DESIGN AN ONLINE SCHOOL COMMUNICATION SYSTEM

A CASE STUDY OF MALAYSIAN SCHOOL

(SEKOLAH KEBANGSAAN BANDAR BARU SINTOK)

ALAA A ALKAFAGI

UNIVERSITI UTARA MALAYSIA 2011

DESIGN AN ONLINE SCHOOL COMMUNICATION SYSTEM

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(SEKOLAH KEBANGSAAN BANDAR BARU SINTOK)

A project submitted to Dean of Postgraduate Studies and Research in partial

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By

Alaa A Alkafagi

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Nama Penyelia
(Name of Supervisor) : **DR. ABDUL JALEEL KEHINDE SHITTU**

Tandatangan
(Signature) : _____ Tarikh (Date) : 18/10/2010

Nama Penilai
(Name of Evaluator) : **DR. MOHD KHAIRUDIN KASIRAN**

Tandatangan
(Signature) : _____ Tarikh (Date) : 18/10/2010

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Abstract

The purpose of this research is to develop a prototype for online communication system used at Sekolah Kebangsaan Bandar Baru Sintok Primary school. The online communication system will be used for communication mainly between parents and teacher that have students at the school. Methodology used to develop the system are two which are consider that is object method table (Norshuhada Shiratuddin, 2010) and requirements catalogue entry (Levi-Strauss, 2009). The design of the system was carried out through following each of these stages that were used in system development awareness of the problem which is initiation investigation into the problem area, suggestion which was used as the requirements gathering process, development which is the system design phase, evaluation where necessary testing methods were carried out, and documentation and report findings which was also considered as the last stage of system implementation. The findings that were made concerning the online communication system some of the functions that were supposed to be used in the system where not considered. Lack of information during gathering requirements also contributed to less information being made available when it comes to developing a working system not just a prototype. The unavailability of adequate resources which could be used to develop the system had an impact on the system interface which if applied could have made it possible to come up with a well designed prototype system that could be used in primary schools for communication. The relaying on the correlation model used is not considered as it has been noted to have some variation when it comes to assessing values of questionnaires made and this can also change as some of the answers provided on questionnaires may be

biased. The system users contributed a lot in making sure that some of the usability issues that where faced could be addressed before implementing the system for use.

Acknowledgement

By the name of Allah, the Most Gracious and the Most Merciful

I would like to thank Allah for having made everything possible by giving me strength and courage to do this work.

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INTRODUCTION

1.0 Introduction

The online communication system is an application being developed to meet the needs of parents, and teachers when it comes to communication especially looking into Sekolah Kebangsaan Bandar Baru Sintok primary school where there is less communication due to limited technology availability.

Information and communication technology offers new possibilities for improving existing education system. Distance education methods which carry numerous possibilities in every organization of education process from almost unlimited time, space, and communication possibilities to learning methods. Having that in mind it is important to find the best possible provision of new methods that will be sufficiently in accordance to the conditions and needs incorporated in education system. Moreover information and communication technology is essential part of modern education notably because of numerous possibilities and advantages which that technology brings to education as well as for better achievement of set education goals (Vuksanovic, Zovko-Cihlar, & Boras, 2007).

In these recent years the instant messaging tools such as MSN Messenger or Yahoo Messenger have become popular for daily online communication (Tanaka, Matsumara & Fujita, 2008) with limited communication being used when it comes to communication for parents, and teachers in Primary school to improve the interaction between these people an online school communication will be developed to meet such needs for parents, and teachers.

The history of communication technologies includes mail, telegraph, telephone and the internet. However, the internet is the latest in a long succession of communication technologies (Odlyzko, 2001). These communications technologies have played an important role in providing facilities to people in different aspects of life. The spread of the internet was the biggest role in the process of progress and thus to be deployed a lot of sites on the internet as well to achieve greater interaction between users and owners of these sites, whether personal, governmental sites or organizations, etc and one of these technology is online school communication system.

Online school communication system is an educational system that leverages on the opportunities of digital technologies for delivering contents, assessing learners' competences and enhancing interaction among learners, teachers, and parents. With internet access almost everywhere nowadays, it provides students and teachers the opportunities for networking, developments in any fields of interest, finding new resources, establishing a sense of community among students and teachers as well as providing information that may be required by parents concerning student attendance in

class (Isa, Samah, & Jusoff, 2008). Therefore many primary schools around Kedah should have online communication system available for better education for students as well as up to date interaction between parents and teachers concerning student welfare at school.

1.1 Problem Statement

Advances in educational technology has made it prevalent in higher educational teaching and learning is no longer closed but open as better means of communication are being used which also lead to some of these problems to be noted during the project write up as well as developing the system for communication in rural areas especially looking at Sekolah Kebangsaan Bandar Baru Sintok primary school in Kedah.

- The need to have better communication facilities that will help teachers and parents share information relevant to particular subject areas as well as improve the work of students and teachers.

- Building a communication relationship between teachers, and parents who will make sure that students are abiding by the required regulations.

- Students are able to get less information required when it comes to doing research on particular subject area due to limited infrastructure at Sekolah Kebangsaan Bandar Baru Sintok primary school.

- The parents find it difficult to consult teachers because of the distance between the school and the location of their homes and it would be very useful if they can

use the web to consult with teachers anytime and anywhere without any limitations. The parents find it inconvenient to get time off from work.

1.2 Research Questions

- How can communication be improved between parents and teachers as well as also including the students, in design a system that will meet the requirements of parents and teachers when communicating concerning student attendance?

1.3 Research Objectives

1.3.1 To identify the requirements for the system.

1.3.2 To design an online school communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school.

1.3.3 To develop and test the usability of the prototype system.

1.4 Research Scope

The scope of this research is to come up with an online school communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school to better the communication between teachers and parents as it has been noticed that there is less communication in rural areas. This will be carried out using the web from home at

telecasters that everyone involved will have access to. The study will be carried out at Sekolah Kebangsaan Bandar Baru Sintok primary school in Kedah.

1.5 Significant of Research

Online school communication system will facilitate the interaction of parents and teachers as well as including students. There by making it easy and more effective when looking at communication involved on all of these people. This research is mostly significant to the parents and teachers to enable teachers to communicate with parents of students through use of desktop computer or laptop if there is internet access or service provided. The system will also provide communication between teachers and students in making sure that work that needs to be done is easily accessed by the children using the internet. Using the proposed prototype online school communication system parents can be able to track the attendance records of their children and also students can have access to the system to download materials concerning there homework that would have been uploaded by the teachers.

Therefore this research will try to achieve the following points:

1.5.1 Design an online school communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school in Kedah which will provide efficient communication between teachers and parents anytime and anywhere so that teachers can talk to parents without losing time from work.

1.5.2 Enable parents to be informed with up to date information for their children through privileges that the system will provide.

1.5.3 Students will be able to keep track with class schedules and assignments that need to be done.

1.5.4 The online school communication system will have video tutorials lessons carried in class to assist parents who do not have knowledge about what is happening in class to teach their children at home.

1.6 Organization of the Study

The organization of this study is divided into six chapters each chapter with its relevant information about how the online school communication system is developed. Chapter one is the first chapter for this report which contains the introduction to the online communication system and an overview of the research. Chapter two will look into literature review that will be describing the online communication system with relation to previous work done by other researchers looking into the same area. Chapter three will focuses on the methodology used in this project to achieve the purpose of the study. Chapter four will look into the design of the online communication system looking into information stated in the requirements catalog to design the system usability and coming up with a requirements catalog that will help show what will be required in developing the system being mentioned. Chapter five will show the results and findings concerning the system. Chapter six focuses on the conclusion of the research, any future

work that could be carried out concerning the system, research recommendations, study limitations, and contributions.

1.6 Summary

This chapter looks into main issue which is developing an online school communication system that will be used at Sekolah Kebangsaan Bandar Baru Sintok primary schools located in Sintok Kedah to improve the interaction of parents and teachers in this rural community. It includes a background of the study, problem statement, research objectives, Research scope, and significant of the research to the people involved in the system. The main objective of this research it to design an online school communication system prototype for Sekolah Kebangsaan Bandar Baru Sintok primary schools in Kedah that will allows parents to check there children attendance in class as well as performance.

Chapter Two

Literature Review

2.0 Introduction

This chapter will provide a brief overview on the literature review and related work that will cover the area of online communication system.

2.1 Online Communication

According to (PC Encyclopedia, 2010) there are numerous ways people communicate with each other over the internet, including E-mail, instant messaging (IM), feedback on blogs, contact forms on web sites, industry forums, chat rooms and social networking sites. These are all some of the way in which communication can be made using the internet and by looking into all of these forms of communications carried over the internet not all of them will be employed for use in this system but focus will be made on communication via E-mail, instant messaging (IM), chat rooms, and contact form on web site.

The rapid development of computer and internet technologies has made online communication an important means to communications as it provides cheaper and easy to access methods of communications (Matsumoto, Matsukura, & Ito, 2000).

Communication is a growing issues in the information society these days with the growth of internet it is bring communication to people in corporations, institutes of higher learning, the government and other sectors. The growing need to have better communication technologies as become a crucial factor for making it easy for parents and teachers to have good communication in terms for knowing the student performance in class frequently (Carb'o, Mor & Minguill'on, 2005).

2.2 Types of online communication system available

The following are some of the types of online school communication systems that are available for use that will be stated in detail to have an understanding of how some of the systems work and how well can these type of system be developed to meet the requirements of parents and teachers that will be using the system to monitor the attendance of students as well as provide an additional feature for students to check for their homework. The two types being mentioned are class connection SIP intercom system, and Inter-tel integrated communication solutions (Class Connection., 2009, Inter-tel, 2006).

2.3 Class Connection SIP Intercom System

Class Connection intercom system solutions will interface with all telephone systems and paging equipment. For example, the Class Connection IP System is fully

compatible with the IP PBXs from Cisco, Nortel, Siemens, Mitel and 3Com as well as any SIP or H.323 compatible PBX (Class Connection, 2009).

The following are the features of the system (Class Connection, 2009):

- Flexible: The Scheduler allows schools to easily manage class changes, scheduled music distribution, lunch periods and release times. Eight Schedules, 1024 possible tone events, your choice of tones and unlimited schedule storage combine to provide the ultimate in flexibility.

- Versatile: The MultiPath Intercom minimizes unnecessary disruptions by providing the ability to call just the classrooms and areas that need to hear an announcement.

- Safety: The MultiPath Intercom can manage school entrances through door intercoms, call buttons, electric door lock control, and visual identification. MultiPath can also automate camera activation at school entrances and secure areas.

- Simple: Up to 360 classrooms may be individually accessed for hands-free communication. Instructors may initiate calls to administrators by simply pressing a call button in the classroom. Several priorities of time sensitive, button-initiated call-in are available.

- State of the Art: Class Connection's innovative PVBX system allows up to 192 cameras to be seamlessly integrated into the intercom to provide visual paging.

The system automatically turns on classroom cameras and administrative monitors during intercom communication.

- Convenient: The MultiPath Intercom's inherent building control functionality allows administrators to automate the control of exterior lighting and lighted school signs. Lights may be turned on and off automatically or by dialing a code on the telephone.

2.4 Inter-Tel Integrated Communication Solution

Inter-Tel Integrated Communication Solutions can be effectively implemented in primary and secondary schools, as well as colleges and universities, to improve the security and safety of classrooms and campuses; institute interactive learning programs; enhance student, parent and community relations; and streamline areas such as schedules, course registration and tuition payments (Inter-Tel, 2006).

Inter-Tel Authorized Provider, State Wide Communication Inc (SWC) can assist in determining the best solution for your education environment. Among the technologically advanced Inter-Tel communications software and hardware solutions SWC can help in implement the school system that are flexible Interactive Voice Response (IVR) Solutions (Inter-tel, 2006).

The following areas look into how the system is implemented in primary and secondary schools; college and university (Inter-tel, 2006):

- **Primary and secondary schools:**

  Send outbound messages to parents notifying them of student absenteeism or school closures which help in increasing parent awareness of what is happening at school.

  Increase fundraising results with inbound or outbound messages about pledge drives and upcoming events.

  Streamline office operations by enabling parents and students to order tickets for school and athletic events via phone.

  Implement grade and homework hotlines that strengthen parent awareness and student participation in every area of work that needs to be done in class.

- **Colleges and University:**

  Enable students to register for courses, make payments and access grades, Check the status of admission applications, request transcripts and more Permit students and the community to purchase tickets for events via phone Access a student or department directory—immediately connecting to the appropriate person or group.

2.5 Use of Online Communication System

The following are some of the uses of online communication system according to (Zucker, 2003) these issues can also be noted as some of the useful issues that the system being developed will also look into.

2.5.1 Engage families with improved quality and quantity of contact.

2.5.2 Reduce paper and printing and save time.

2.5.3 Two way communications for example send and receive.

2.5.4 Streamline absence contact and response.

2.5.5 Maximize the use of data already in SIMS; groups, contact details, attendance, addresses etc.

2.5.6 Open from within SIMS, using the Student details screen.

2.5.7 Web Messenger provides access from school, home or abroad.

In making sure that the use of the online communication system is effective the (Dickinger, Heinzmann, & Murphy, 2005) proposed a way in which way that can be used to collect traffic information to help reduce traffic jams and emissions as shown in figure 2.1 below. This shows that information that will be passed through communication interaction taking place between parents and student is not interrupted when being passed over the internet.

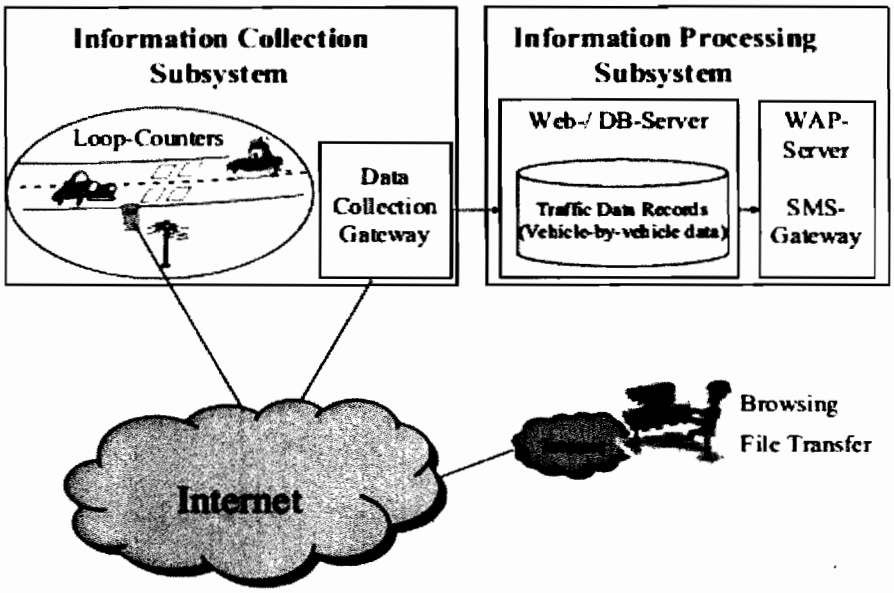


Figure 2.1: Traffic Information System Architecture Adapted from (Dickinger et al., 2005)

2.6 Communication between parent and teachers

The communication of parent and teachers is very important when looking into this system as this will help in making sure that attendance for students is monitored there by reducing the number of absent students in class as the students will be familiar that if an class missed their parents will also know that same day that a particular class was not attendant by their child. (Tanaka et al., 2008) provides an ISP chat service which is then used to model the interaction of chat that will be used by parents and teachers to check for any absent or missed classes by their child. This can be presented in the Figure 2.2.

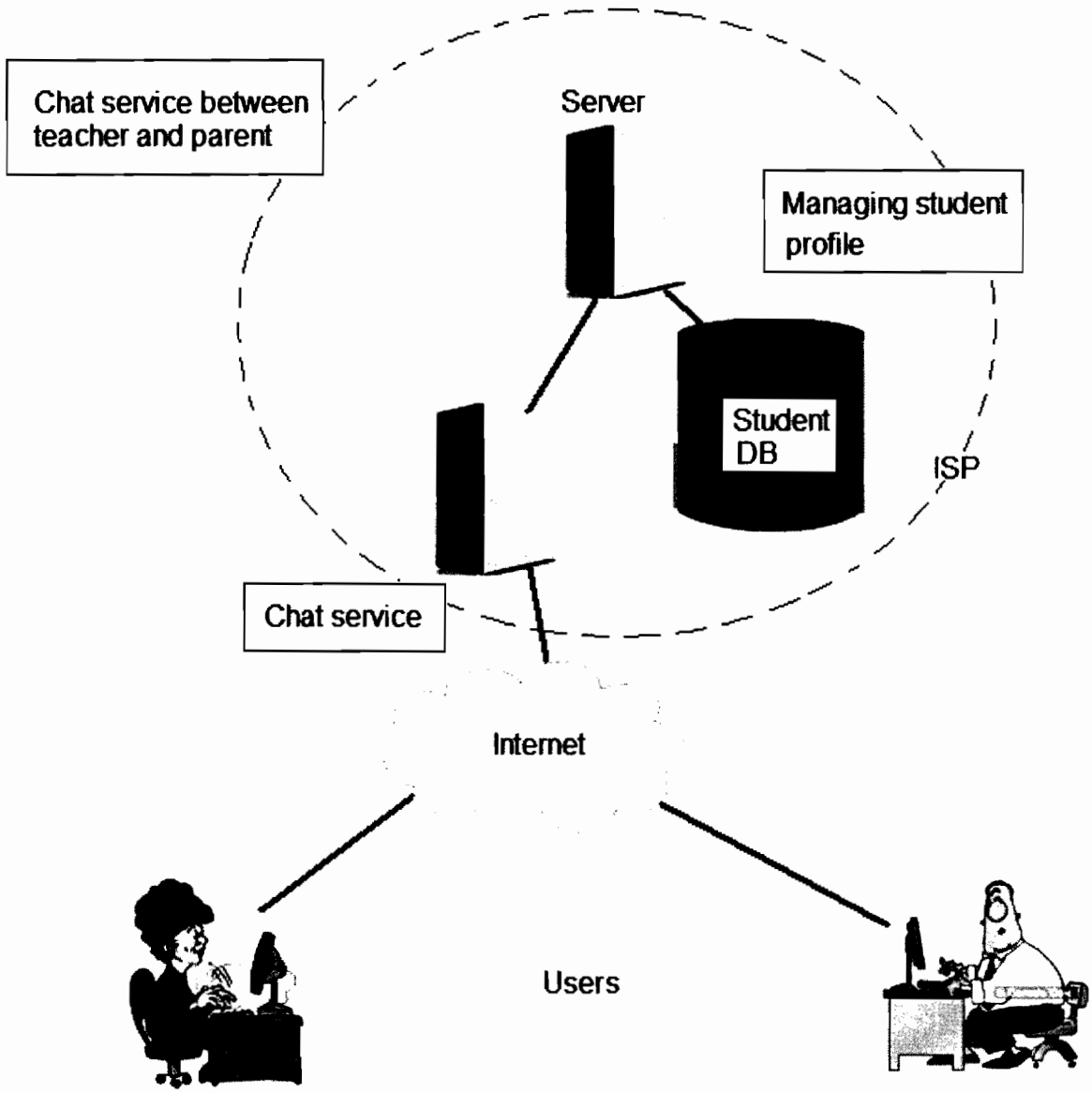


Figure 2.2: Interaction between Teacher and Parent

This is a two way interaction where both the teach and the parents are online talking about the issues that need to be solved concerning the student or any sharing

information on any recent developments from the school that parents need to be notified of as soon as possible.

2.7 Summary

The above chat looked into the literature review of online communication system looking into some of the research done that are related to the topic area for example looking into online communication, the types of online communication that are available already on the market, and communication between parent and teacher concerning issues of student attendance and an development that may need to be notified to parents about the primary school.

Chapter Three

Research Methodology

3.0 Introduction

The research methodology refers to the methods and techniques used by the researchers in performing the research such as data collection technique, data processing techniques and instruments used. When carrying out a research either descriptive or prescriptive approaches in information technology research are used (March & Smith, 1995). Descriptive research seeks knowledge about the nature of reality whereas prescriptive research also known as design science will improve the performance of a task or system (Egeberg, 2006). The research methodologies that will be used in this research are Objective Method Table (Norshuhada & Shahizan, 2010) and research design (Vaishnavi & Kuechler, 2004) which are accepted among researchers. The Objective Method Table (OMT) which is used for linking research problem statement, questions and objectives which illustrates relationships among the stated ideas or planned task (Norshuhada & Shahizan, 2010). The design will involve the analysis of the use and performance of designed artifacts to understand, and explain improvements in some aspects of information system (Vaishnavi & Kuechler, 2004). There by solving problems effectively and efficiently.

3.1 Objective Method Table

This looks into how to construct a method to develop online communication system that will be used by both parents and teachers. Then the objectives will be to develop a procedure, produce analytical model and design tools to assist in developing the online communication system (Norshuhada & Shahizan, 2010). The method column for the Objective Method Table will be filled after validation column has been filled which will ensure that strategies outcomes meet the claims of the research (Norshuhada & Shahizan, 2010). The following table is according to Norshuhada & Shahizan (2010).

Table 3.1: Objective Methods Table Source (Norshuhada & Shahizan, 2010)

Questions	Objectives	Outcomes	Methods	Validation
Methods of developing Online communication system	To develop the following procedures A system that will allow Parents and teachers to monitor student attendances	The system should allow parents and teacher to monitor student attendance in class	User interface with forms that allow parents and teachers view such as teacher and parent view of student attendance	Sequence diagrams for student, and teachers
	To produce analytical model which are Stages	The required or stated stages of system	Pearson	Use of correlation

	of system development	development should be followed	Correlation models	models to check for functionality when using the system
	To design the following tools Use Case diagrams, Entity relationship diagrams, Sequence diagrams	Draw the required use case diagram, entity relationship diagram, Sequence diagrams	Testing using database the running of all objects	Check the follow for events, objects, and entities in each and every diagram drawn
Techniques to analyze the Online communication system	To produce the following procedures user acceptance test	The system should make user easy for users to use it	Implement the following test methods alpha and bets test	Carry out alpha and beta testing
	To produce the following guidelines follow the required steps when accessing the system	How will parents, teachers and student accessing the system	Implementation of test environment for the system	Evaluation of use acceptance
	To develop the following framework	The framework is show below in	Use of UML	Development

	stages for system development	Figure3.1.		
	To identify the following processes these processes are check for system functionality	Login or out, viewing announcements, student information, attendance,	Interactive with user	Check if user can be able to login or out, viewing announcements, student information, and attendance

3.2 Design Research Methodology

According to Weerd, (2005) the design research methodology for performing research in information system is used for webManager implementations. This would allow for better internet connection between parents and teachers thereby improving the communication that would be taking place through adequate web page layouts. The design research methodology includes steps as shown in figure 3.1 below which is in phases (Vaishnavi & Kuechler, 2004).

Looking into the design methodology below all of the stages have been followed but due to limited time and resources availability some of the stages stated below have been

looked into but in fewer details. This areas that have not been looked into more adequately there will be looked into during the time when future research into this study is carried out and there is available time for all the areas to be well looked into to come up with an actual working system not just a prototype system that is being developed for this study.

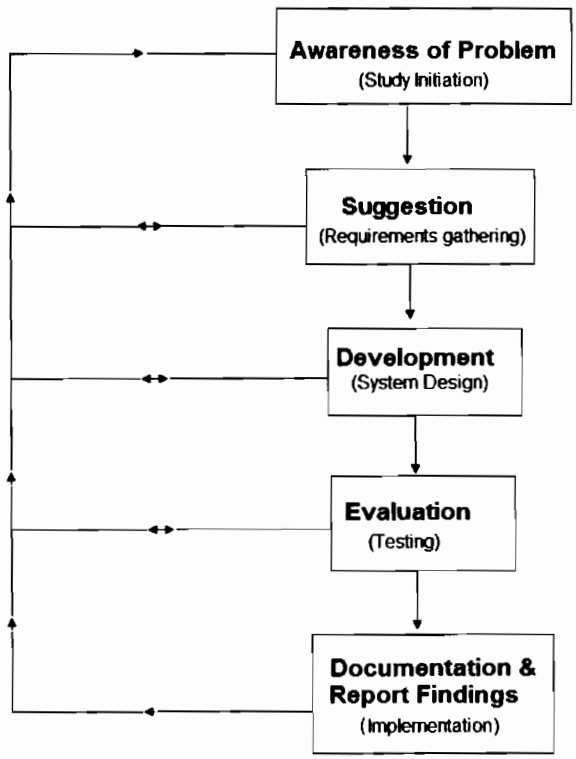


Figure 3.1: Design Research Methodology (Vaishnavi & Kuechler, 2004)

3.3 Awareness of Problem (Initial Investigation)

The main objective in methodology research will be to identify the requirements of the prototype which is the most important phase in prototype development. This helps in understanding the objectives, scope and also problems. It brings one to understand the problems with online communication system that are being address which are improving the communication of parent, teachers, and students in rural communities of Kedah Sintok. Then after noting down the problem statement the objectives and scope will be clear as one would have noted the problem that needs to be resolved with the introduction of online communication system.

3.4 Data Collection (gathering information)

Data collection is necessary in requirements gathering for the prototype model as this would help in fulfilling the user requirements for the system after having gone through interviews with the users to note down the functionalities that they would require in online communication system. This method was done by visiting primary schools that are in Kedah Sintok which where the main focus for this research.

The table 3.2 below shows some of the functional requirements for the online communication system.

Table 3.2: Functional Requirements

Requirements	Description
Functional Requirement 1	The system should allow teachers to edit student information for record keeping.
Functional Requirement 2	The system should allow parents and teachers to search for students attendance information.
Functional Requirement 3	The system should allow teachers to post announcements and give feed back to parents about students requirements.
Functional Requirement 4	The system should allow students to view homework posted by teachers.
Functional Requirement 5	The system should allow teachers to send online questions and video taken for teaching period to parents.

3.5 Suggestions

The main suggestion will be to solve the problem of communication brake down between parents and teachers concerning students' attendance in class. The output will be to design a interface that allows teachers to send student attendance records to parents if request by them. The analysis and design of the system will include UML diagrams. The UML diagrams are general use case diagrams, detailed sequence diagrams for each use case and class diagrams.

3.6 Development (System Design)

In this study the prototype will be developed using java or ASP.net programming language environment. Microsoft Net Framework will provide developers with the opportunity to create and deploy applications and services via the web. These services can facilitate communication between clients and .NET application servers such as database servers and so on. The online school prototype will be developed and the website will be through using requirements of usability guidelines.

The usability guideline is an online form which describes the ability of teachers to use online forms to full advantage so that the technology will support the users and the forms will achieve the attendance record keeping for students.

3.7 Evaluation (Testing)

Online school communication system evaluation is important in IS developments to assess and improve the quality of the web presence of a communication system for parents, teachers, and students. When it comes to evaluation of system it is time consuming and expensive, other methods vary depending on both method used and the individual evaluator.

3.8 Requirements

In this area all the relevant information that is required to develop the prototype system for Sekolah Kebangsaan Bandar Baru Sintok primary school in Kedah. Will be gathered through use of requirements catalogue entry where the functional and non-functional requirements of the system will be stated.

3.8.1 Requirements Catalogue Entry

The following table 3.3 below shows the requirements catalogue entry that will used to enter all the necessary details about the system that was gathered through fact finding methods that were carried out during the initial investigation into the problem area.

Table1 3.3: Requirements Catalogue Entry (Levi-Strauss, 2009)

Requirements Catalogue Entry		
Source: Information gathered during requirements gathering	**Owner:** Name: Alaa	**Priority:** High
Functional Requirements		
Non Functional Requirements		

Description	Target Value	Comments
Benefits		
Comments / Suggested Solution		
Related documents		
Related requirements		
Resolutions		

3.8.2 Functional Requirements

These are intended to capture the anticipated behavior of the system which can be stated through naming of the users that will be using the system such as the teachers, parents, and students. The interaction that the system will have with the above mentioned users is through system interface. The table 3.4 below summaries the functional requirements for the system and gives a brief description of the different requirements.

Table 3.4: Functional Requirements

1	Teacher

1.1	Teacher needs to login first
1.2	Teacher manage classes (Upload, and Delete Classes)
1.3	Teacher can manage students attendance and announcements (View, Add, Send, and Delete)
1.4	Teacher can search student records by name, and Matric number
2	**Parents**
2.1	Parents need to login first
2.2	Parents can view student attendance in class, and announcements send by teachers
2.2	Parents can make payments on fees and other matters
3	**Students**
3.1	Student needs to login the system first
3.2	Student view announcements, send online questions and answers on work given
3.3	Student view class that have been uploaded by the teachers
3.4	Student can search about teachers and other students by using their Name

3.8.3 Non-Functional requirements

These non-functional requirements will capture properties of the system that has to do with performance, quality or features that are not fundamental for the system to work but they are however very important because they are often properties that are highly desired. The user can help system gain competitive advantage over other systems the lists of the non functional requirements for the system are shown in the table 3.5 below.

Table 3.5: Non-Functional Requirements

Description	Target Value	Comments
Time response	Maximum of 10 seconds delay time	Being able to respond quickly to a command, meeting user's requirements and user friendly
User friendly	Interface usability and the user	The system should be able to satisfy user's needs, easy to navigate through and operate

Secure	Restricted access for users	The system should not be vulnerable to different users such as hackers and crackers
Access time and password where necessary	During working hours for example 9 hours a day	Having passwords that could be used to grant access to the system and also limited accessing to all of the systems operations
Level of accuracy	System output with a very minimum error	The system should be able to accurately make all the calculations without room for mistakes
Reliability	Rate of failure occurrence should be very low in the system	The system should be robust enough to offer the required services to the users
Flexibility	Database flexible	The database should be able to store large number of data that is needed to be managed

Portability	Can it be used with other operating system that are available now	This system should be portable for each and every user using a different operating system such as windows, Linux, and Mac OS.
Maintainability	Developers are they able to make regular updates	The developer should be able to make updates and maintain the system for any future updates
Navigation	Able to transfer from one view to the next view	Students, teachers, and parents should have the opportunity to transfer from one view to another view without problems occurring during the transfer process
Help and Support	Users can should be able to get support from the system	Does the system provide the adequate support required by all users of the system when needed?

Error handling	System able to solve errors that occur	Errors are avoided as much as possible
Software Requirements		
Operating system	System function	Microsoft Windows XP Professional
Database	System function	This component used to store information for the prototype such as Microsoft Access, Microsoft SQL Server 2005.

Table 3.6: Benefits of Using the Online School Communication System

Benefits	
1	Will reduce time spend on sending messages about any announcements that need to reach the parents concerning their children
2	Time will also be reduced in notifying parents about student attendance in class
3	The use of paper will reports will be cut as parents and teachers will be communicating electronically through the system
4	Messages about meets that parents have to attend will be send to them as soon as possible and they will get the messages without time delays
5	Parents will be able to monitors student activities in class and outside as they will be have access to the system that will provide real time information
6	Parents will be directly involved with the student work in real time

Table 3.7: Comments / Suggested Solutions concerning use of Online School Communication System

	Comments / Suggested Solutions
1	To move toward a better communication system among parents and teachers
2	Notifying parent through teachers about their student or child's attendance in classes using the online school communication system
3	Delivery of reports and announcements in time before the due date is near
4	Have students assignment ready in the system so that they can be able to see and do the assignment on time
5	Provide easy to access methods of submitting assignments for students
6	The interface that will be provided should be user friendly that each and every user can easily have access to the system
7	Login details should be made available to each and every student, parent and teacher when accessing the system

Table 3.8: Related Documents that will be used in Online School Communication System

Related Documents
The use of Use Case Diagrams, Entity Relationship, Class Diagrams, Sequence Diagrams, collaboration diagrams and Activity Diagrams Microsoft Access, Microsoft SQL 2005, Java, ASP.Net

Table 3.9: Related Requirements for Online School Communication System

Related Requirements	
1	To offer a user friendly system to teachers, parents and students.
2	To identify the most areas that needs focus on in the system development process.
3	The system should be able to send soft copies in real time and should be able to check student's attendance and notify parents if classes are over missed at any particular time period.
4	Having necessary back up files for the records stored in the school's database for an problems that may occur in the system.

Table 3.10: Resolution for Using the Online School Communication System

Resolution	
1	Make use of the limited time made available for the development of a system that meets all its requirements.
2	Carry out testing at each and every stage of development.
3	Trying to reduce the number of errors that may acquire during the development of the working system making sure that the requirements stated are done to avoid any problems in the system.

3.9 Summary

In summarizing the above information it can be noted that if the required steps are followed as there are stated in the research methodology the online school communication prototype will be able to meet the requirements of the users as proper development standards will been followed. There will be an evaluation of the system to make sure that it meets all the requirements and proper testing methods will be carried out to test functional and non-functional areas of the system.

Chapter 4

Analysis and Design

4.0 Introduction

This chapter will look into the design of the online communication system that will be used for interaction between parents and teachers concerning the attendance of students in class. The use case diagrams, use case specification, entity relationship diagrams, activity diagrams, sequence diagrams, and collaboration diagrams are all some of the areas that will be looked into during the write up of this chapter. The following diagrams are drawn so that the user understanding of the system can be implemented and used into developing an actual working system.

4.1 Proposed system

The proposed system for this study is to design an online school communication system that helps communication between parents and teacher in rural areas especially at Sekolah Kebangsaan Bandar Baru Sintok primary schools in Kedah.

4.2 Use Case Diagrams

The Use Case diagram describe what the system does from an external observer and the emphasis is on what the system does rather than how when looking into making sure that parent have access to check on their child's attendance and also the teach can be able to log into the system and make any necessary updates that may be required for both parents and students. Use case is a functional requirement that describes users defined functional requirements of the system. It describes a series of steps which include actions and interactions between the system and the actors, use cases address the question of how to interact with the actor of the a system and describes the actions that the system works (Alhir, 2003). Use cases uses scenario as an example for what happens when someone interacts with the system (Ambler, 2009).

4.2.1 Use Case: this is a use case which describes a sequence of actions that provide something of measurable value to an actor in this research the actors are parents, teachers, and students and is drawn as a horizontal eclipse.

4.2.2 Actor: An actor is a person, organization or external system that plays a role in one or more interactions with online school communication system (Ambler, 2009). Actors are drawn as stick figures.

4.2.3 Association: Associations between actors and use cases are indicated in use case diagrams by solid lines (Ambler, 2009). An association exists whenever an actor is involved with an interaction described by a use

cases (Ambler, 2009). Associations are modeled as lines connecting use cases and actors to one another with an optional arrowhead on one end of the line (Alhir, 2003). The arrowhead is often used to indicating the direction of the initial invocation of the relationship or to indicate the primary actor within the use case.

4.2.4 **System Boundary:** A rectangle around the use cases is called the system boundary box to indicate the scope of the system and anything within the box represents functionality that is in scope and anything outside the box is not. System boundary boxes are rarely used (Alhir, 2003).

The use case diagram that is shown in figure 4.1 below shows the overall operations that will be taking place in the system to model the system functions at a high level which will be broken down to more detailed diagrams for user understanding when designing the online communication system between the parents and the teachers which also incorporates student so that they can take advantage of the system.

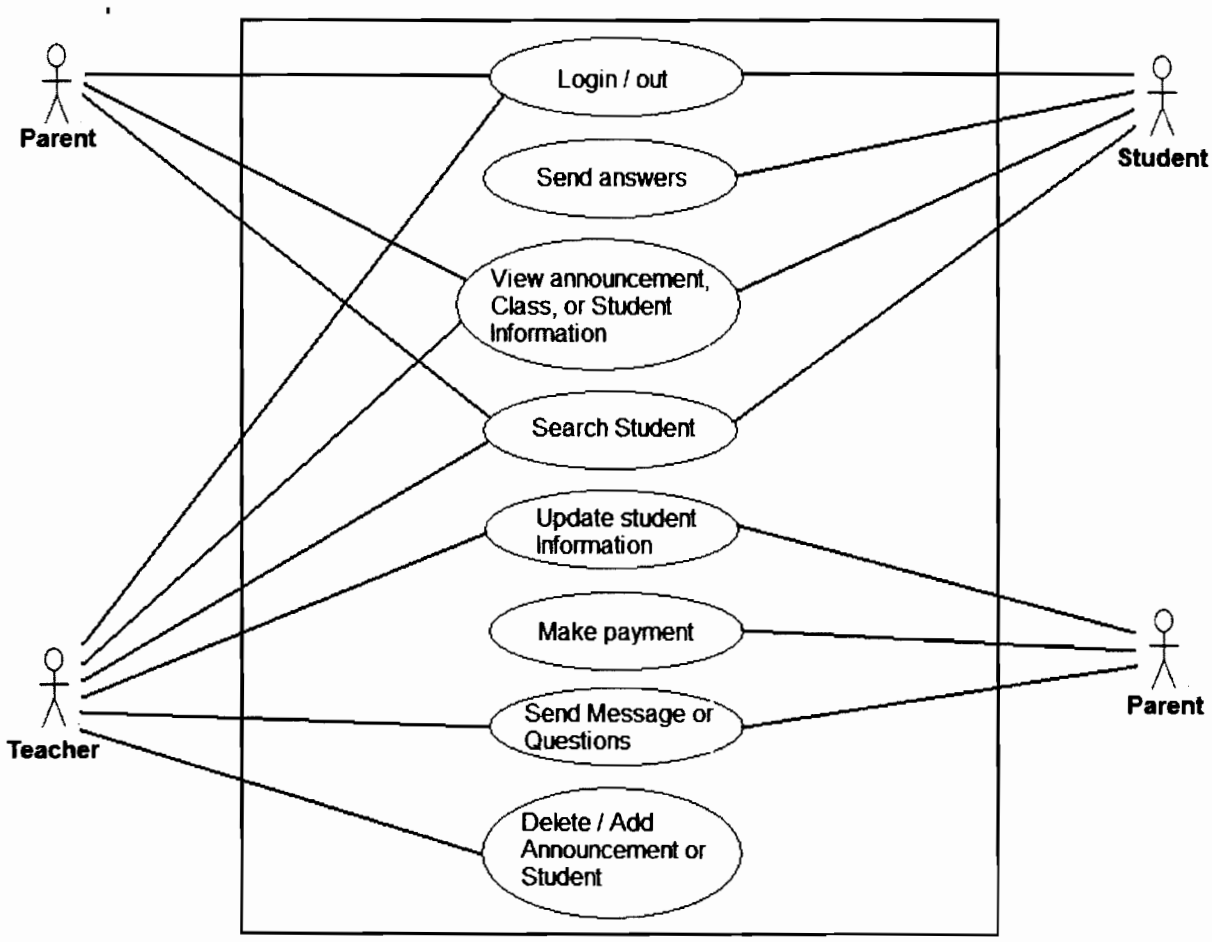


Figure 4.1: Use Case diagram for online communication system

After identifying this particular use case diagram it was then broken down to model the main functionalities of the system so that a person could clearly understand the use case and its functions used.

4.3 Use Case Specification

The use case specification provides the functionality that the system will support and describes how the actor will use the system in order to obtain specific results of value when using the online communication system (Modern Analyst, 2010).

4.3.1 **Basic Flow** The basic flow this shows the process by which events are going to be taking place when a particular user is using the system for example looking at the teacher use case all of the procedures that the teacher will be carrying out when using the system are flowed and stated down.

4.3.2 **Parent Information Flow** This shows the way in which a parent will be interacting with system whether logging into or logging out of the system and also checking the attendance of the student during a particular time period.

Table 4.1: Parent Information Flow

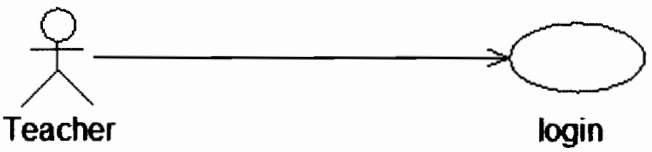
Parent Login	
Brief description	The parent login into the online communication system through inserting ID or password.
Pre Condition	Inserting correct login information
Characteristics of Activation	This depends on the parent and teacher that will allow access to the information to be viewed.
Flow of event	Basic Flow: 1. Parent login or out 2. View announcement, classes and student information 3. Search for their child in the system database 4. Can make updates to the student information if there is any missing or wrong written information 5. Can be able to send messages to teachers or questions about student and announcements 6. Can make payment for promotions, tuition fee, and

	other things
	Alternative Flow Not applicable Exceptional Flow The system will display a message upon entering wrong login information when parents enter wrong information.
Post Condition	View student information, announcements posted and make payments
Rule	Only authorized parent can be able to view information in the database for their child.

4.2 Teacher Information Flow

This shows how the teacher will be interacting with the system whether logging in or out or send any messages to parents concerning the attendance of the student in class are all the area that are being looked into in this part.

Table 4.2: Teacher Information Flow

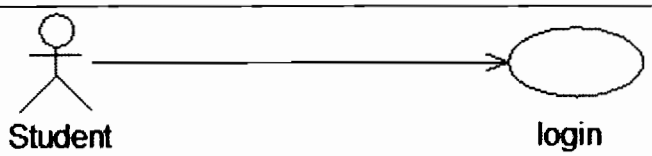
Teacher login use case	
Brief Description	This use case is used for teacher to login into the online communication system that is being developed to view classes, enter announcements, delete, add, and update information about student attendance
Pre Condition	View announcements, delete, and add, students, classes, send information or chat with parents online
Characteristics of Activation	This depends on the teacher if he or she is able to enter into the online communication system
Flow of events	Basic Flow 1. Teacher can log in or out of the system 2. View announcement, classes, and student information 3. Teach is able to search for any student 4. Teach can update attendance records for student and also class marks 5. Teacher can send message and questions concerning

	student to parents 6. Teacher can delete or add announcement and even student from classes
	Alternative Flow Not applicable Exceptional Flow If invalid information is entered it should be noted that wrong information has been entered
Post conditions	Add, delete, view, post announcement to parent and student. Chat with the parents or send message
Rules	Only authorized teacher can access the relevant information

4.3 Student Information Flow

This shows the interaction that will be taking place between the system and the students actually trying to understand how best some of the methods that are used will be necessary for the students when using the system.

Table 4.3: Student Information Flow

Use case student login	
Brief description	This use case allows student to login to the online communication system, view classes, announcements, questions send
Pre condition	Insert correct login information
Characteristic of activation	Depends on the teacher whether a student can login
Flow of Event	Basic Flow 1. Student can login or out of the system 2. Send answers on an class work required 3. View announcement from teachers, class to attend, and even other student information stored 4. Student can search for class mates
	Alternative Flow

	Not applicable Exceptional Flow The system will display wrong login information if made
Post conditions	View information posted by teacher concerning class and school work
Rules	Enter correct information to login

4.4 Entity Relationship diagram

In developing the entity relationship diagrams for the online school communication system for checking student's attendance in class the following tables are the main tables that will be used in the system Parents, Teachers, and Students. According to Cummings, (2008) the development of entity relationship diagrams has to go through some process were one has to first find the relationship, second draw a rough ERD, third filling cardinality, fourth defining the primary keys, and fifth draw a key based ERD. All of these processes will be followed in developing the ERD diagram for the online school communication system which will help in design the system database that will be used to store all the required information used in the system.

4.4.1 Finding Relationship

The entity relationship matrix will be draw to obtain the relationship of tables that will be used in the database. Table 4.4 below shows the entity relationship matrix.

Table 4.4: Entity Relationship Matrix

	Parent	**Teacher**	**Student**
Parent		Checks attendance and class work	Monitor student attendance
Teacher	Makes announcements, inform class performance and student attendance		Send questions, can search, delete, and add student
student	Informs for payments	Sends answers, and view announcement	

4.4.2 Rough ERD

Connection of entities where relationships is shown in the entity relationship matrix can be shown in figure 4.1 below.

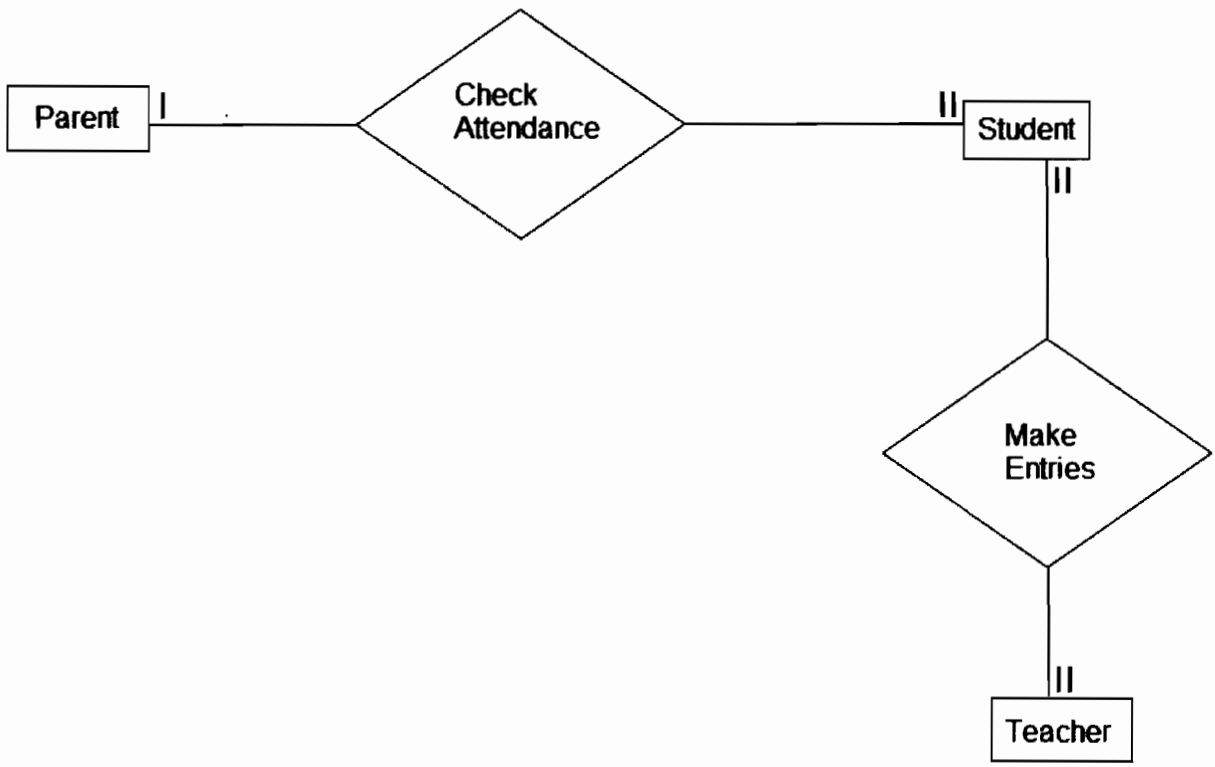


Figure 4.2: Connection of Entities

4.4.3 Filling Cardinality

From the diagram in figure 4.1 above the following cardinality can be made for the online communication system:

- Each parent checks attendance from teacher
- Teacher informs parents on student attendance
- Teacher can add, delete, and make announcement to student
- Student makes necessary entries to teacher

4.4.4 Defining Primary Keys

The primary keys that will be used in the system will be Parent ID, Teacher ID, and Student ID.

4.4.5 The Key Based ERD

The figure 4.2 below many to many type of relationship between all the entities that are shown in the diagram, for example many parents can check attendance of student from many teachers that will be teaching their child as well as many teachers can make entries for many students.

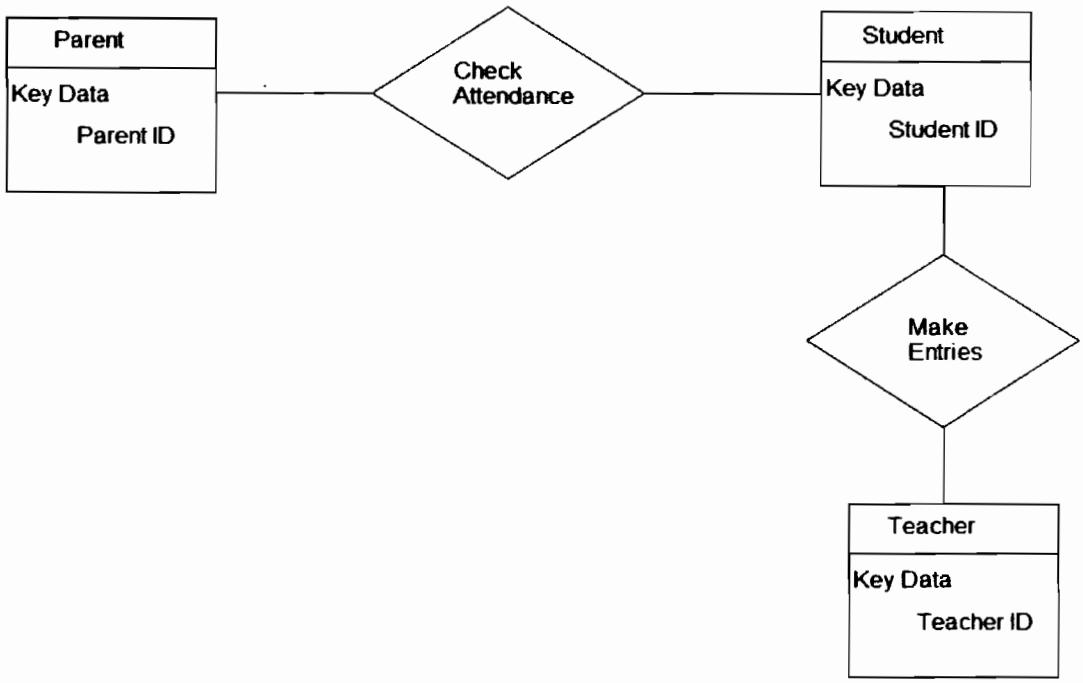


Figure 4.3: The Primary Key for Each and Every Table

4.5 Activity Diagram

Activity diagrams are typically used for business process modeling which could be capturing a single use case or usage scenario or for modeling the detailed logic business rule (Ambler, 2009). Looking into this study the use case diagrams are used to model the use case diagrams that are drawn for parents, and teachers.

4.5.1 Activity Diagram for Parent

This Figure 4.4 as shows the following parts of the online communication system where parent will check for the attendance of their child in class, any announcements that would have been posted by teachers, search for student, make updates to student information, or send message to teacher, and make any payments required.

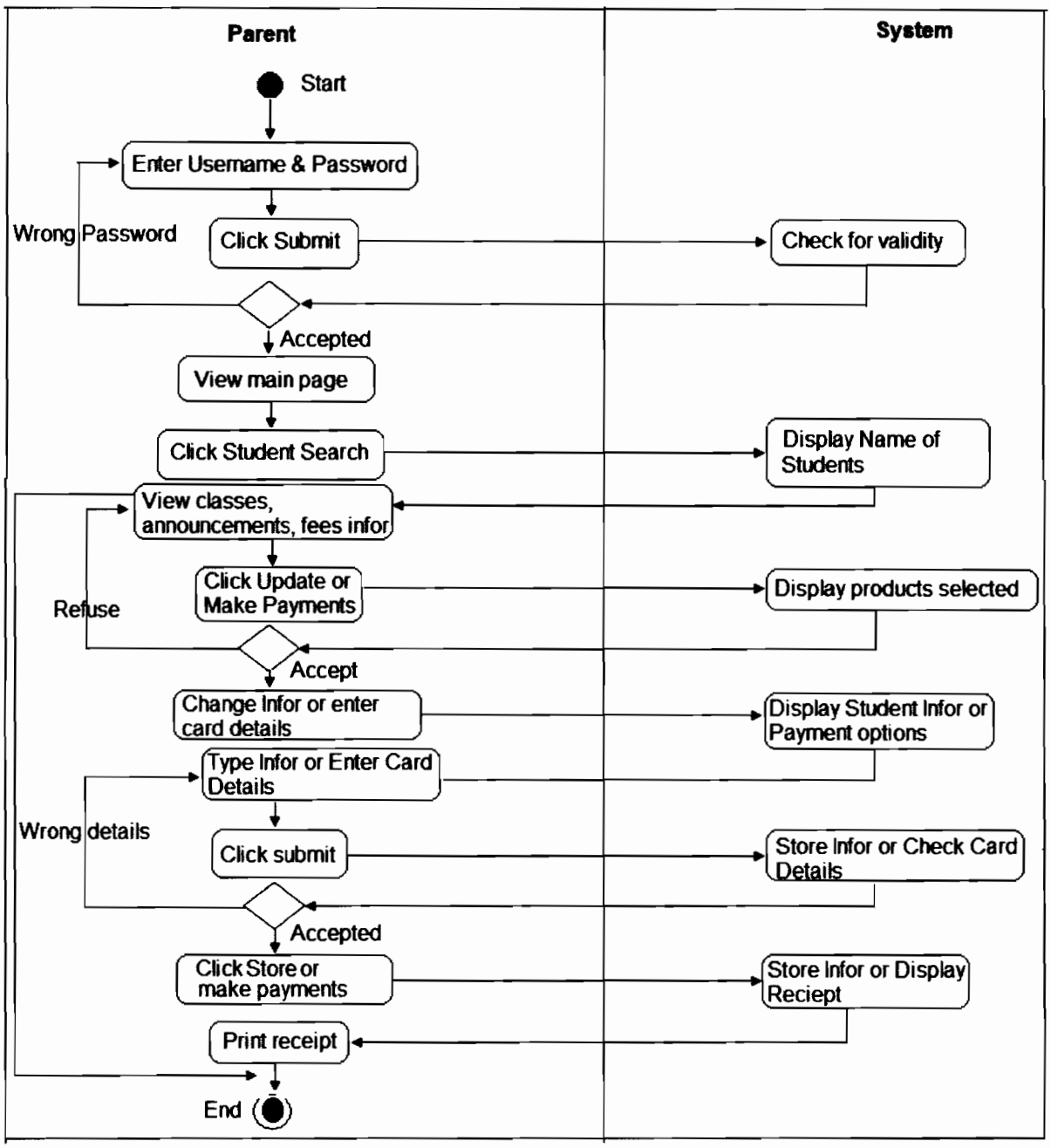


Figure 4.4: Activity Diagram for Parent

4.5.2 Activity Diagram for Teacher

The Figure 4.5 shows the part when the online communication system looks into the teacher and how he or she will be interacting with the system, figure 4.4 below shows the activity diagram for teacher.

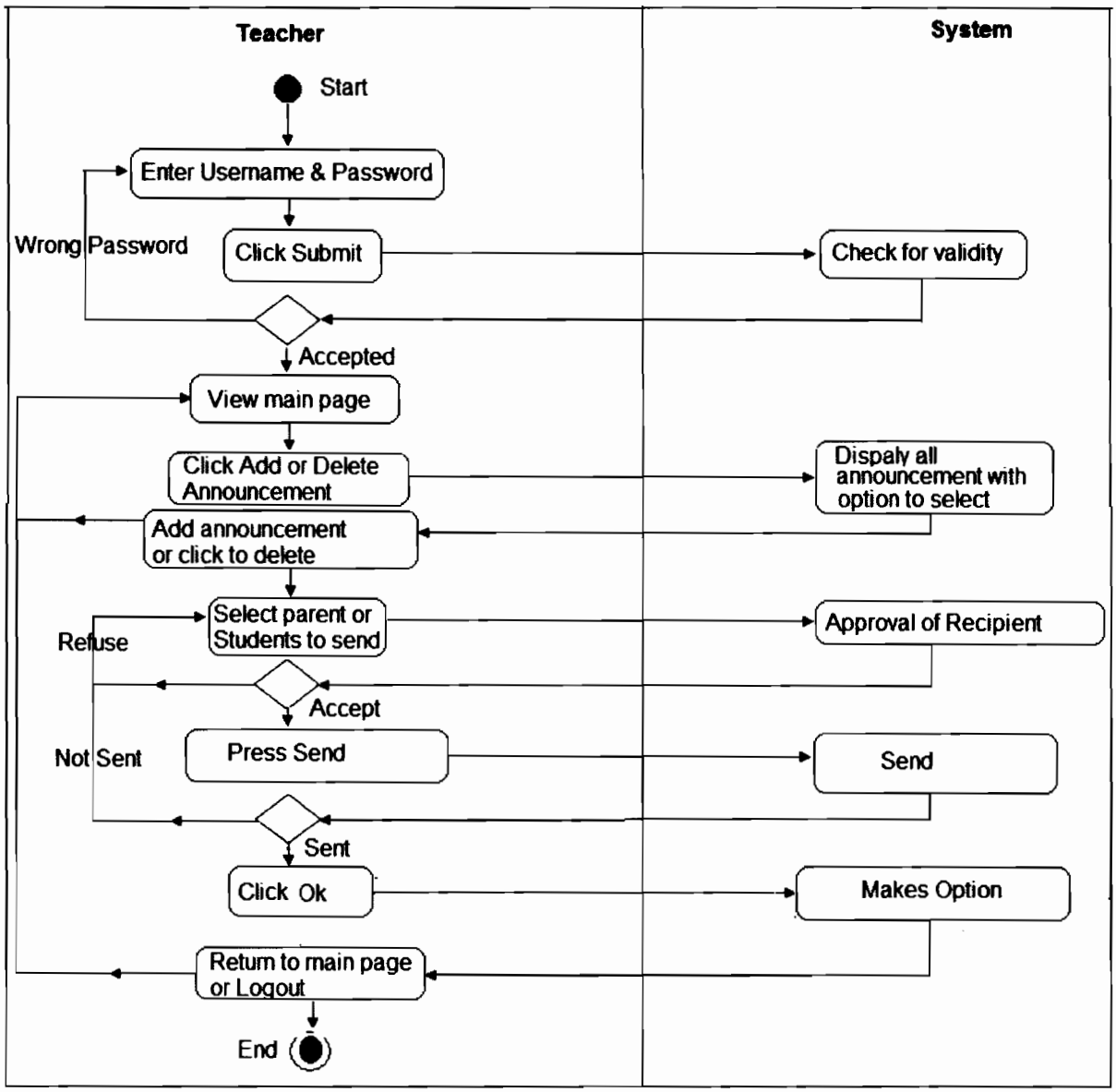


Figure 4.5: Activity Diagram for Teacher

4.6 Sequence Diagrams

The sequence diagrams are static model views or interaction diagrams that are dynamic and they describe how objects collaborate. A sequence diagram is an interaction diagram which details operations that will be carried out in mobile technology system were messages are sent and when. The time in sequence diagrams progresses as one goes down with the operation as it will be carried out by the system and the object are listed from left to right according to when operations take part in the message sequence. The following figure below shows the sequence diagram for parent interaction with the online communication system.

The sequence diagram are most draw from the use case diagrams these will be broken down into more details so that a detailed description of how the system works will be stated and when it comes to the development of the required interface for the system. This will be easily as the functions that a user requires to carry out will be noted and those that the system will be carrying out will be noted as well. The database entity that will be affected by each and every process that is carried out will be noted in the sequence diagram below.

4.6.1 Parent Sequence Diagram

The following sequence diagram below as shown in figure 4.6 the process that will be taking place when parent access the online communication system.

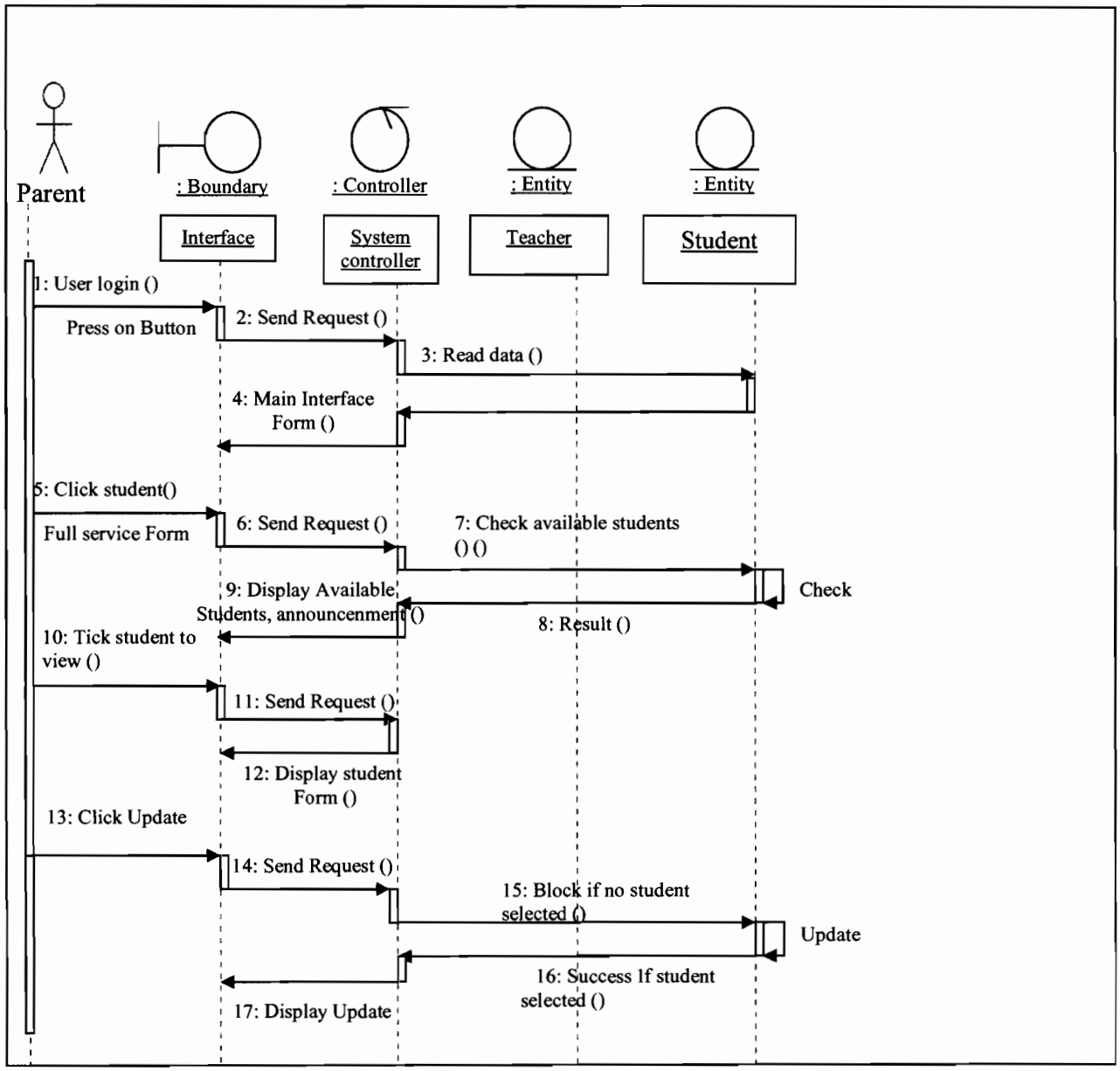


Figure 4.6: Parent sequence diagram

4.6.2 Collaboration diagram for parents

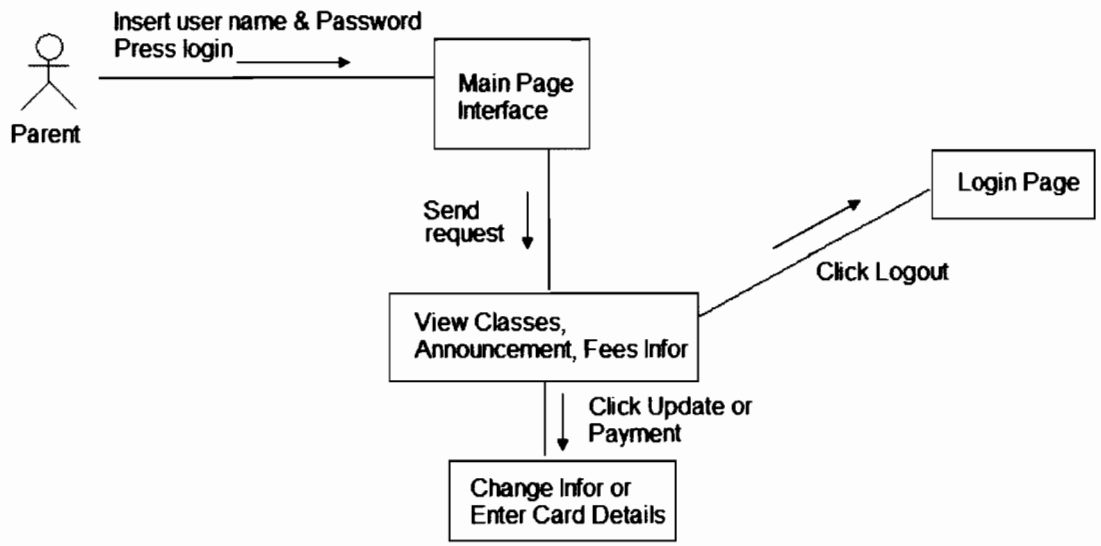


Figure 4.7: Collaboration diagram for parent

4.6.3 Teacher Sequence Diagram

The following sequence diagram below as shown in figure 4.8 shows the process that will be taking place when teacher is accessing the online communication system.

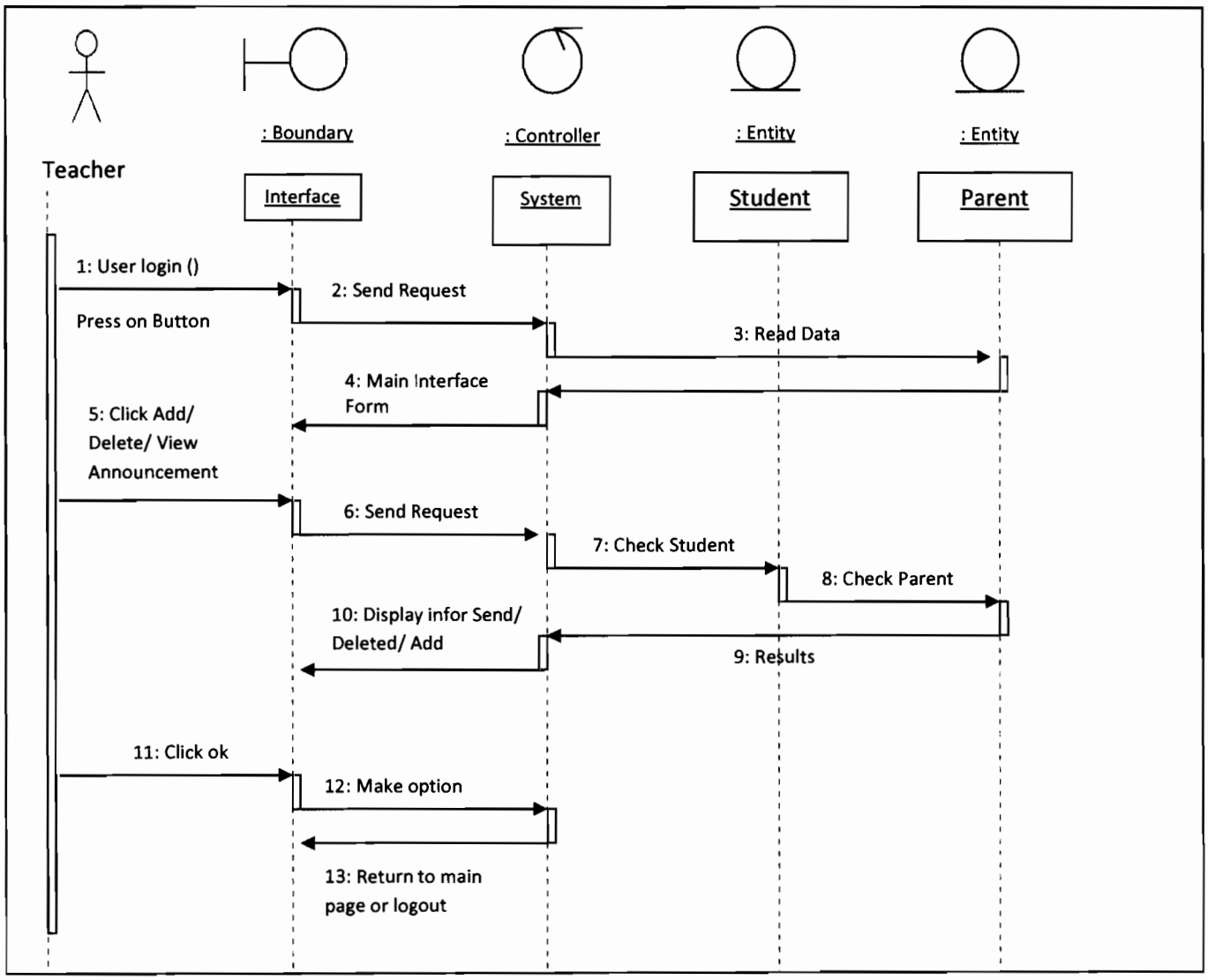


Figure 4.8: Teacher Sequence diagram

4.6.4 Collaboration diagram for teachers

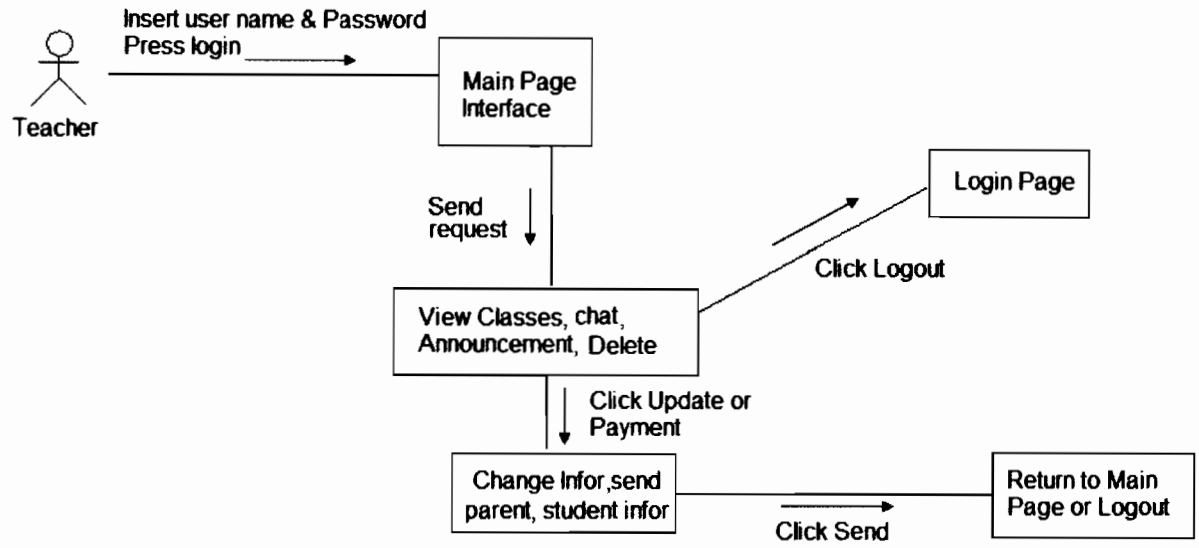


Figure 4.9: Collaboration Diagram for Teacher

4.7 Database Design

This study uses Microsoft SQL Server (2005) because there are many features in it which includes the following:

- The Microsoft SQL Server 2005 allows of the users to create tables queries, forms, reports, pages and modules.
- Tables are grids that store related information that helps in system interactions
- Queries ask questions for the database to help locate specific information

- Another software feature of Microsoft SQL Server 2005 is its support of a variety of data formats

- It's also possible to post information such as forms and reports on the web so that people in remote locations may view the required information

The database of the online school communication system consists of 3 tables these are:

4.8 Teacher Table

The table 4.5 below illustrates the information that is contained in the teacher table.

Table 4.5: Teacher Table

Field Name	Data Type
TeacherID	Int
First name	Varchar
Last name	Varchar
Phone number	Varchar
email	Varchar
Specialization	Varchar
Password	Varchar

4.8.1 Parent Table

The following table 4.6 below shows the information that is found in the parent table

Table 4.6: Parent Table

Field Name	Data Type
ParentID	Int
First Name	Varchar
Last name	Varchar
Address	Varchar
Phone Number	Varchar
Email	Varchar
Password	Varchar

4.9.1 Teacher page

- Main Page
- Home page
- Login page

4.9.2 Parent Page

- Home page
- Login page
- Parent page

4.9.3 Student page

- Main page
- Login page
- Student page

4.10 Home Page

From this page the teacher, parents and student can be able to login into the online communication system and also being able to view the areas that they can be able to view from the system. The figure 4.10 that is below shows the home page of the system.

Figure 4.10: Home page

4.10.1 User Login Page

In this page user inserts the username and password then press login button as illustrated in the figure 4.11.

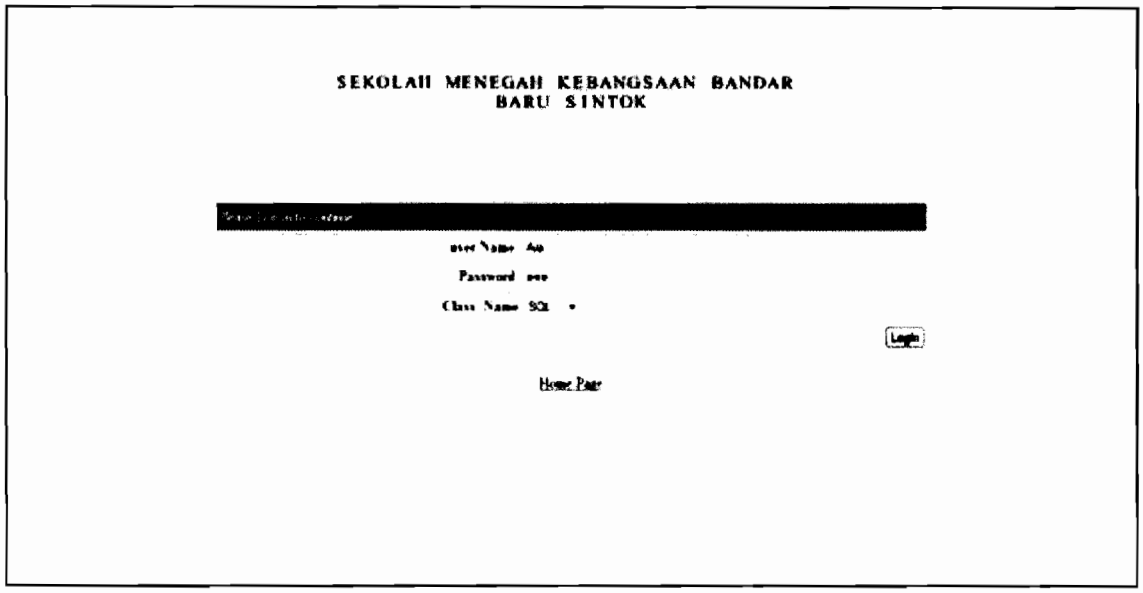


Figure 4.11: Login page

4.10.2 Teacher page

This is the teacher home page where he or she can make all the necessary entries such as send email to parents, enter announcements, and send class work to students. The following figure 4.12 below shows the teacher page.

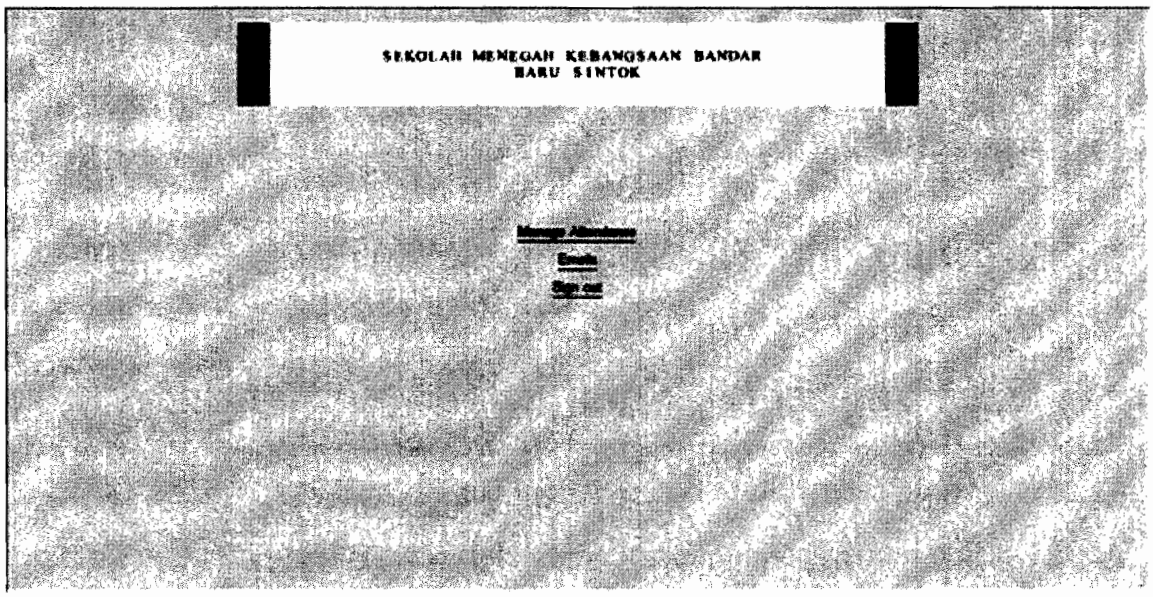


Figure 4.12: Teacher page

The figure 4.13 below shows the information that the teacher can be able to work with when using the system.

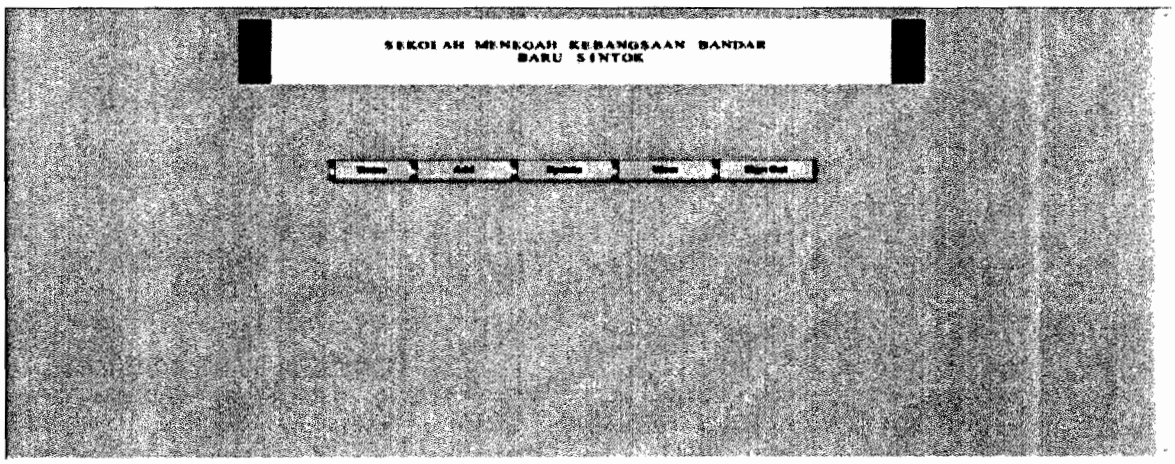


Figure 4.13: Manage Attendance

4.10.3 The send email page

The following figure 4.14 below shows the screen that the teacher will be viewing when sending email to parent.

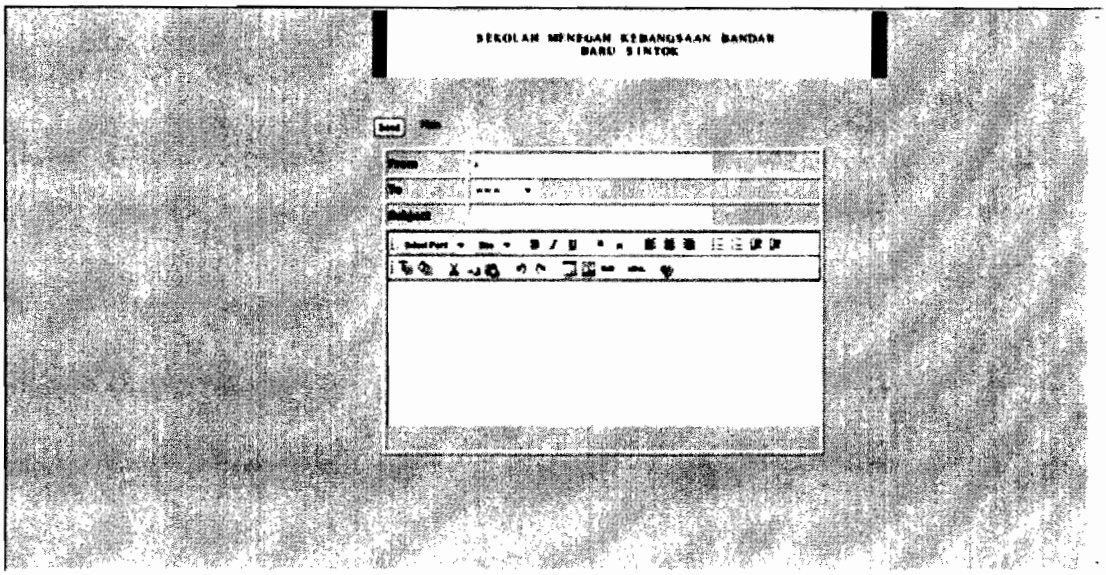


Figure 4.14: Sending E-mail between Parents and Teacher

4.10.4 Parent main page

The following figure 4.15 below shows the main page that the parents will be viewing after login into the online communication system. They will be able to view announcements and attendance of student, and also send email to teacher concerning any information that they may require.

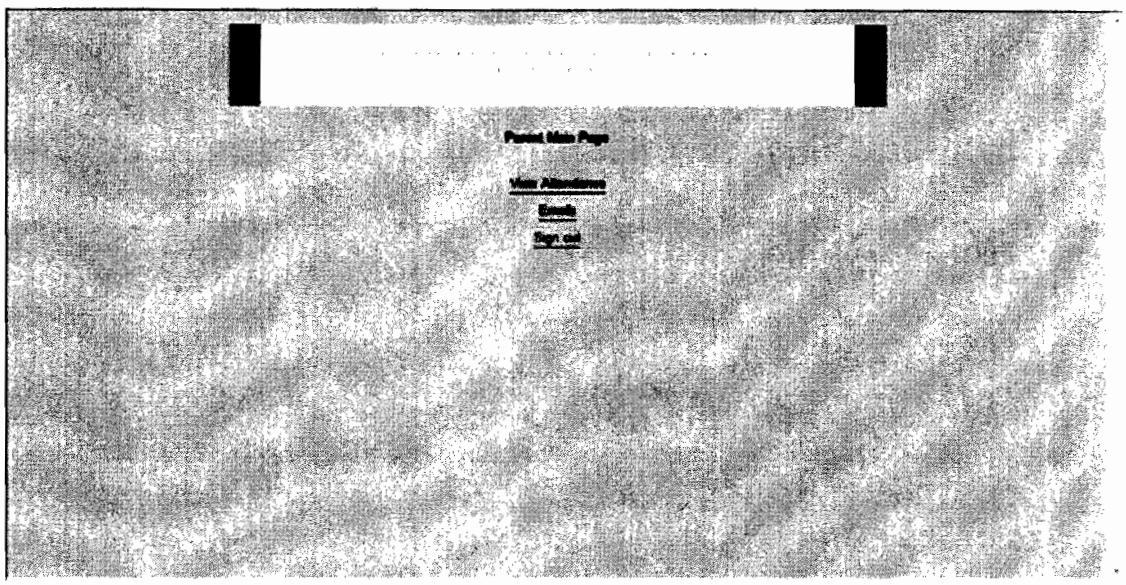


Figure 4.15: parent main page

4.11 Summary

The following chapter looked into the online communication system development through analysis and design of the require information that was used develop the online communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school. In the end of the chapter the user interface of the system was shown to help the read understand the actual system that was developed.

CHAPTER FIVE

RESULTS

5.0 Introduction

The main aim of this chapter is to discuss and evaluate the online school communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school developed as a prototype. The evaluation questionnaire was designed according to the Likert Scale. According to Uebersax, (2006) Likert scales were first developed by Rensis Likert a sociologist at the University of Michigan from 1946 to 1970. Likert relates to the measurement of psychological attitudes and hopes to do so in a "scientific" way. This questionnaire is divided into four parts each part contains many questions which have to be answered by teachers, students, and parents. An interview was also carried out between some teachers in order to gather as much information concerning the development of the online communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school. The questionnaire that was used is shown in appendix.

5.1 Evaluation Techniques

The evaluation was achieved after the system has been developed to verify the level of the usability operability of the system; it is tested through a questionnaire which was distributed to the students, parents and teacher at Sekolah Kebangsaan Bandar Baru Sintok primary school. The sample size was 49. Nine parents were able to answer the questionnaire and ten teachers as well; thirty students were asked to complete also the questionnaire. All of the above information was then recorded. Each respondent was

given a brief description of the functionality of the system. Afterwards they were allowed to use and explore the system, finally there were given a set of prepared questionnaire to obtain their perceptions. The aim was to see the level of the prototype usability.

5.2 Evaluation of Questionnaire

The questionnaires which were used in this study have been adopted depending on usability guideline. It is consisted of four main sections firstly general information of respondent; second section includes questions about the user experience. The third section included questions about moving around the form, and fourth section included question about reading the site which is written content.

5.3 Data analysis

The data collected through the questionnaire has been analyzed using SPSS software, version 14.0. Different statistics were used for the data analysis. The following section describes the result obtained through analysis of data.

The following information was gathered from all the questions that were used in the questionnaire concerning usability of the online communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school.

5.4 Respondent Profile Analysis

The following was gathered from the first section of the questionnaire for participants. The analysis shows that 65% of participants are male and 35% are female as shown in figure 5.1.

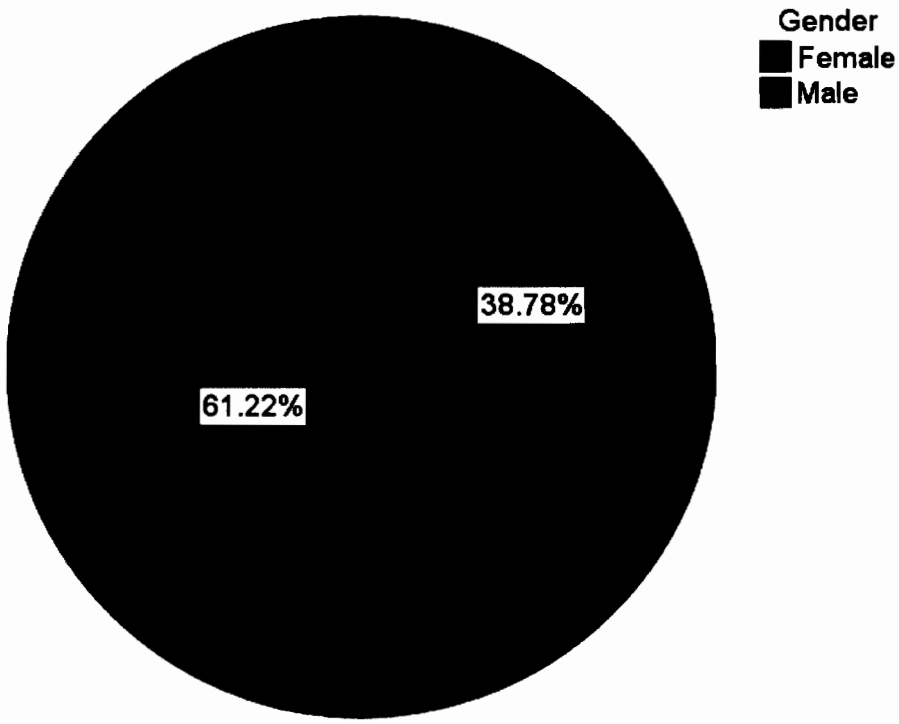


Figure 5.1: Illustrate the Gender of the Respondents

5.5 Internet Usage

Most of the responded uses the internet daily (D) while list the responded for usage of the internet is almost the same on weekly (W), monthly (M), and yearly as shown in figure 5.2.

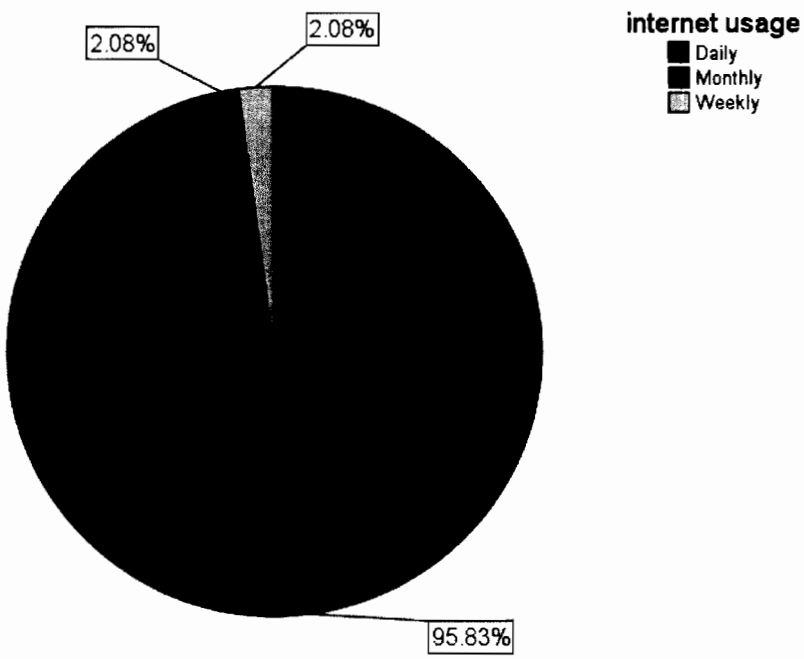


Figure 5.2: Illustrates the Respondent Usage of the Internet

5.6 Race Distribution

The race distribution of the sample is high for Malaysian (M) and very low for those who are not Malaysian (NM). The figure 5.3 below shows the distribution of race at Sekolah Kebangsaan Bandar Baru Sintok primary school.

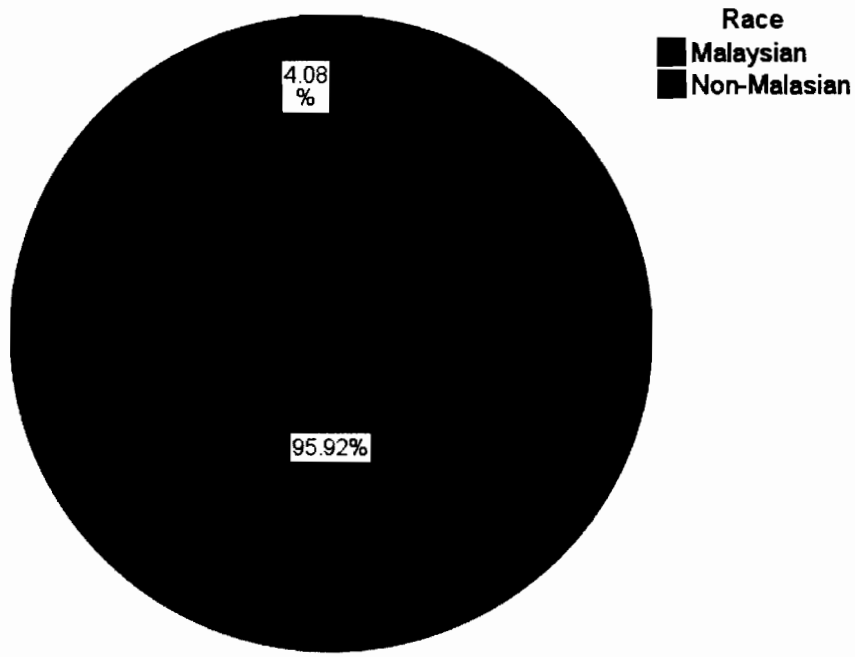


Figure **5.3: Race Distribution**

5.7 Responded Distribution

The figure 5.4 below shows the distribution of respondents of each and every question answered in the questionnaire.

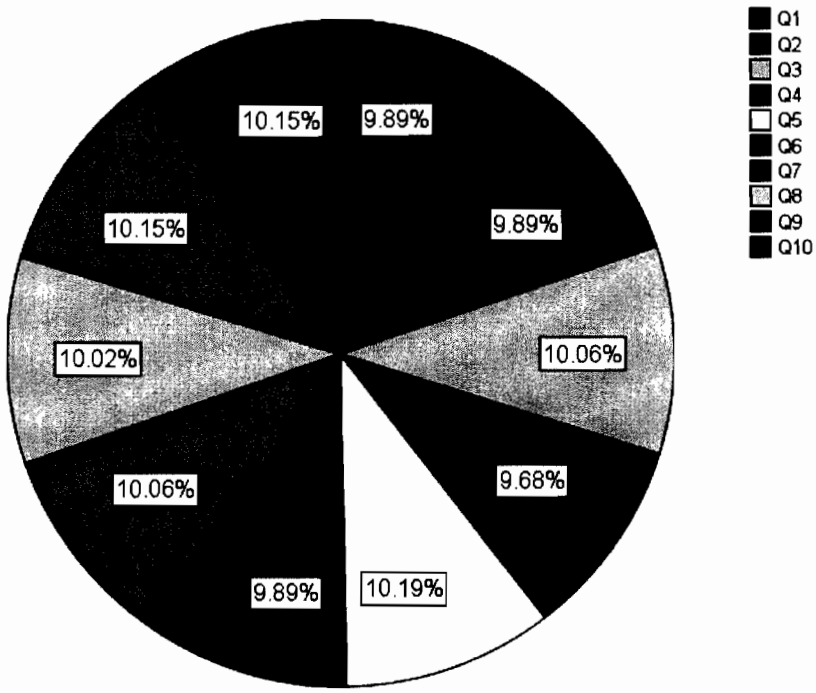


Figure 5.4: Respondents Distribution

5.8 Descriptive Statistics for all Sections

Table 5.1 below describes the number of respondent, the range, minimum and maximum answer, the mean and Std deviation for all sections using the Pearson Correlation Analysis. This was used because it will be able to note the significant relationships in answers provided during the time when the questionnaires where answered by all the users of the online communication system that is being developed for Sekolah Kebangsaan Bandar Baru Sintok primary school.

Table 5.1: Descriptive Statistic

Questions	N		Mean	Median	Std. Deviation	Range	Minimum	Maximum
	Valid	Missing						
Q1	49	0	4.78	5.00	.422	1	4	5
Q2	49	0	4.78	5.00	.422	1	4	5
Q3	49	0	4.86	5.00	.354	1	4	5
Q4	49	0	4.67	5.00	.474	1	4	5
Q5	49	0	4.92	5.00	.277	1	4	5
Q6	49	0	4.78	5.00	.422	1	4	5
Q7	49	0	4.86	5.00	.354	1	4	5
Q8	49	0	4.84	5.00	.426	2	3	5
Q9	49	0	4.90	5.00	.306	1	4	5
Q10	49	0	4.90	5.00	.306	1	4	5

5.9 Correlation statistics

Pearson Correlation Model was used based on the questionnaires that were provided and answered in this study where the relationships of different functional areas of the system where being considered to check if there relate in order to make the system more user friendly. The Pearson correlation model was used main because the online communication system is user based system and the functionality of the system has to meet the user requirements or else the problems will be incurred when using the system especially to parents and student that will be less familiar with some of the functions in the system. This then made it possible to use Pearson's correlation model as a basis to check for the functionality of all the components in the system when it comes to usability or user interaction with the system. The following table 5.2 below shows the correlation descriptive statistics.

Table 5.2: Correlation Descriptive Statistics

Questions	Mean	Std. Deviation	N
Q1	4.78	.422	49
Q2	4.78	.422	49
Q3	4.86	.354	49
Q4	4.67	.474	49
Q5	4.92	.277	49
Q6	4.78	.422	49
Q7	4.86	.354	49
Q8	4.84	.426	49
Q9	4.90	.306	49
Q10	4.90	.306	49

The table 5.3 below now shows the correlation of all the questions that were used in the study according to Pearson's correlation statistics.

Table 5.3: Pearson Correlation Statistics

Correlations

		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Pearson Correlation	Q1	1	.179	.339*	.147	.197	.062	.060	.024	-.020	.142
	Q2	.179	1	.060	.043	.018	.297*	.200	.256	.142	-.020
	Q3	.339*	.060	1	.089	-.122	-.220	.000	-.158	-.138	.248
	Q4	.147	.043	.089	1	.110	-.166	.089	-.063	-.235	.197
	Q5	.197	.018	-.122	.110	1	.018	.091	.061	.146	-.101
	Q6	.062	.297*	-.220	-.166	.018	1	-.080	.372**	.303*	-.020
	Q7	.060	.200	.000	.089	.091	-.080	1	-.020	.055	.055
	Q8	.024	.256	-.158	-.063	.061	.372**	-.020	1	.350*	-.131
	Q9	-.020	.142	-.138	-.235	.146	.303*	.055	.350*	1	-.114
	Q10	.142	-.020	.248	.197	-.101	-.020	.055	-.131	-.114	1
Sig. (2-tailed)	Q1		.217	.017	.314	.175	.671	.683	.872	.893	.331
	Q2	.217		.683	.771	.901	.038	.169	.076	.331	.893
	Q3	.017	.683		.544	.405	.129	1.000	.278	.346	.086
	Q4	.314	.771	.544		.451	.254	.544	.666	.104	.176
	Q5	.175	.901	.405	.451		.901	.533	.675	.318	.492
	Q6	.671	.038	.129	.254	.901		.585	.008	.034	.893
	Q7	.683	.169	1.000	.544	.533	.585		.893	.707	.707
	Q8	.872	.076	.278	.666	.675	.008	.893		.014	.371
	Q9	.893	.331	.346	.104	.318	.034	.707	.014		.437
	Q10	.331	.893	.086	.176	.492	.893	.707	.371	.437	
N	Q1	49	49	49	49	49	49	49	49	49	49
	Q2	49	49	49	49	49	49	49	49	49	49
	Q3	49	49	49	49	49	49	49	49	49	49
	Q4	49	49	49	49	49	49	49	49	49	49
	Q5	49	49	49	49	49	49	49	49	49	49
	Q6	49	49	49	49	49	49	49	49	49	49
	Q7	49	49	49	49	49	49	49	49	49	49
	Q8	49	49	49	49	49	49	49	49	49	49
	Q9	49	49	49	49	49	49	49	49	49	49
	Q10	49	49	49	49	49	49	49	49	49	49

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

5.10 Summary

This chapter focuses on the system analysis, from the testing and evaluation conducted, the prototype fulfills the student need requirements. The prototype still needs to be uploaded on the internet fro further testing and development and real usage.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

This chapter will conclude the study by summarizing the review the findings that were found from the study and presenting research contribution, problems and limitations and the direction of the future work.

6.1 Conclusion of the Study

As it was stated in chapter one the objectives of this study is to develop an online school communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school in Sintok, Kedah. This system was mainly developed for the purpose of parents and teacher interaction concerning the attendance of student and the system was not developed as a fully functional system but as a prototype. The prototype was developed due to limited time available as completing a fully functional system would take a long time and the project would not be finished in time.

6.2 Study Contribution

After designing and developing the online school communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school. This system would help parent track

their child attendance in class and make sure they are up to date with information that may have an concern with school and student attendance. The prototype was developed using ASP.NET with C# in coding the online school communication system. In this study it showed how user such as teachers, parents, and students can make efficient interaction between them when they use the system. Microsoft SQL Server was used to make the database that stores the required information in the system.

6.3 Problem and Limitations

Although this system allows the user such as parents, teacher, and students have easier way for efficient interactions, and many features in the Microsoft SQL Sever as database that is more appropriate with online applications. There are some significant shortcomings in the application in real world which include: in case of application of the system into real world we face some difficulties when it comes to use of English which may also limit on system functionality that would be good for the system in spite of the numerous illustrations available in this system. But these difficulties are temporarily and could end quickly with further education into the language use and some of the terms that will be accumulated along the learning process.

6.4 Future Work

The online communication system for Sekolah Kebangsaan Bandar Baru Sintok primary school is a communication system that will enable parents and teacher to

communicate together concerning the attendance for student. The following future work is list below:

- Expand system function to cover secondary and university schools in Malaysia and other countries that may require the system
- Upload the system on to a server and test it in real world to see how the system will work and if there are any changes that need to be made.

6.5 Recommendations

In my opinion and as I see no one can deny the importance of an online communication system between parents and teachers concerning student. It helps make sure that parents track the student activity in and around school there by reducing students from not attending class or missing on any school activities that may need to be attended by them.

6.6 Summary

The first chapter looks into introducing the development of an online communication system for Sekolah Kebangsaan Bandar Baru Sintok primary schools in Kedah and also explains a brief background of the research areas. Then the problem statement is constructed which help one understand why there is a need for this system to be developed for rural communities. The research question, scope, objectives, significant and organization of the study are all the following topics that are looked into in the first

chapter. The second chapter then looks into literature review of the online communication system from relevant information gathered online concerning the system. Chapter three the looks into the research methodology, design, data collection, and suggestions that are all necessary topics to be looked into in research methodology of the system.

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Appendix (A): Questionnaire

- **Questionnaire for Student**

Class:.....

Age:.....

1-Do you have a computer at home? Tick appropriate answer

(Yes) [ ] (No) [ ]

If yes what type of computer?

(Laptop) [ ] (PC)[ ] (Other) [ ]

2-Do you have access to internet at home?

(Yes) [ ] (No) [ ]

3-Does your parents have computer at work or office?

(Yes) [ ] (No) [ ]

4-Does your parent have internet at work or office?

(Yes) [ ] (No) [ ]

- **Questionnaire for Teacher**

Academic achievement:……..

Age:……..

1-Do you have computer at school?

(Yes) [ ] (No) [ ]

2-Do you have access to internet using the computer?

(Yes)] (No) [ ]

3-How many computers are available for use? [ ]

Template

FCULTY OF ARTS AND SCIENCES

UNIVERSITY UTARA MALAYSIA

DESIGN AN ONLINE SCHOOLCOMMUNICATION SYSTEM A CASE STUDY OF MALASYIAN SCHOOL (SEKOLAH KEBANGSAAN BANDAR BARU SINTOK)

I am MSC in Information Technology final semester student at University Utara Malaysia

Currently I am conducting this questionnaire to gain an understanding of the user who will be using online communication system for Sekolah Kebangsaan Bandar Baru Sintok primary schools.

The aim of this research is to design an online school communication systemto improve and facilitate the efficient interaction and communication between parents and teacher concerning student attendance in class. I request your kind assistance and valuable time to complete this questionnaire as it will be very important to complete my study. Please take a few minutes to complete the questionnaire. All your information will be held in strictest confidence and will be used only for this research purpose. Your insights feedback in making this study successful is highly appreciated.

If you have an queries or if you would like to know the result of this study please do contact me at 0175498700 or through email alaco_75@yahoo.com

Thank you for your valuable time and help in completing this Questionnaire.

MSc. IT Candidate

ALAA A ALKAFAGI

Questionnaire FOR DESIGN AN ONLINE SCHOOLCOMMUNICATION SYSTEM A CASE STUDY OF MALASYIAN SCHOOL (SEKOLAH KEBANGSAAN BANDAR BARU SINTOK)

Section A: General Information

Please kindly tick your answer to the given statements:

User [ ] student [ ]parent [ ] teacher

Gender [ ] Male [ ] Female

What is your race?

[ ] Malaysian [ ] Non Malaysian

Internet usage [ ] Daily [ ] Weekly [ ] Others

Section B: User Experience

Please check the appropriate column. The numbers 1 to 5 represent the following:

1: Strongly Disagree 2: Disagree 3: Natural 4: Agree 5: Strongly Agree

Please choose the appropriate number

Questions		1	2	3	4	5
1	The online communication system provides short cuts to all forms from main page					
2	The online communication system does not use embedded fonts in PDF; it uses the Times New Roman fonts in all texts					
3	In online communication system all forms do not consists of more than one page					
4	In online communication system can any page in the website be printed on A4 paper					
5	In online communication system all spelling and grammar have been reviewed					
6	In online communication system all links are working					

Section C Moving Around the form Navigation, workflow and orientation

Please choose the appropriate number

Questions	1	2	3	4	5

1	The online communication system minimizes the amount of data that l require to enter					
2	The online communication system makes it easy for me to understand the workflow and structures of the form in the website					
3	The online communication system avoids me lots of asking about the details					
4	The online communication system avoids the using of submit as I feel this language is too technical, unfriendly or authoritative					
5	The online communication system provides me with efficient and quick workflow					
6	The online communication system avoid me the need to read and complete or chose any irrelevant details					

Section D: Reading the site write content

Please choose the appropriate number

Questions		**1**	**2**	**3**	**4**	**5**
1	The online communication system uses positive language for messages and errors					
2	The meaning is clear in all text and labeling that is used					

	throughout the pages in the website					
3	The online communication system uses required fields instead of mandatory fields					
4	The online communication system uses a friendly language and it avoids the computer or technical unintelligible words or writing for example it uses send instead of submit					
5	Each page in the online communication system contains the related data					
6	The online communication system does not blame me in error messages					
7	I do not need to remember any information from a previous page or reenter it again					
8	The online communication system uses screen controls such as drop downs control and check boxes control it is easier to me to enter the data					
9	The online communication system provides me with reasonable default text					
10	The online communication system forms in website avoid me					

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/7/2010

TO WHOM IT CONCERN

Salam Alykem...

Dear Sir/Madam

Please help student Mr. Alaa A. Alkafagi about implementation and application his research **(Design an Online School Communication System for Rural Community)** in your school and inform us the results.

Thank you.

Yours Faithfully

Supervisor : Dr. Abdul Jaleel Kehinde Shittu

Signature :

DR. ABDUL JALEEL K. SHITTU
Contract Lecturer
Information Technology
UUM College of Arts and Sciences
Universiti Utara Malaysia
06010 UUM Sintok, Kedah.

Date : 25/7/2010

We have discussed the issue and we are pleased to have the design set up for the School.

HJ. AHMAD HULMI BIN HJ. ISMAIL, PCK
Guru Besar
Sekolah Kebangsaan Bandar Baru Sintok
06010 Sintok,
Kedah Darul Aman.

28/7/10.

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