

**BULE HORA UNIVERSITY**

**FACULTY OF ENGINEERING AND TECHINOLOGY**

**DEPARTEMENT OF INFORMATION SCIENCE**

***Online Classroom Scheduling System for Regular Student of Bule Hora University.***

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**A group research project**

Submitted to the Department of Information Science, Faculty of Engineering and Technology, University of Bule Hora, in meeting the preliminary project requirement for partial fulfilment for the award of degree of bachelor in information science.

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Approval sheet

This group research Project entitled “online classroom scheduling system for regular student” has been read and approved as meeting the preliminary research requirements of the Department of Information Science in partial fulfillment for the award of the degree of Bachelor in Information Science, Bule Hora University, Bule Hora, Ethiopia.

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# ***Abstract***

*This project is a web-based (online) for Bule Hora University office of registrar scheduling staff. The system is going to developing to replace the manual system of the office to make it online class scheduling system, with the ability of Keep records of Facility, Department, Building, Room, Course, Instructor, Student and Schedule information and allows Update, search and Delete as needed by respected user. It also to developing the new system through* *system analysis and design method and also to develop the new system by different tools by PHP, XAMMP server, MYSQL, Notepad++. This also helps the office from wastage of time, money, man power as well as workload*.

**Table of Contents page**

[Acknowledgement III](#_Toc485371159)

[*Abstract* IV](#_Toc485371160)

[List of Table VII](#_Toc485371161)

[List of figure VIII](#_Toc485371162)

[Abbreviation/acronyms IX](#_Toc485371163)

[SECTION ONE: Introduction 1](#_Toc485371164)

[**1.1 Background of the study** 1](#_Toc485371165)

[**1.2 statement of the problem** 2](#_Toc485371166)

[**1.3 Objective of the Project** 3](#_Toc485371167)

[**1.3.1 General objective** 3](#_Toc485371168)

[**1.3.2 Specific objective** 3](#_Toc485371169)

[**1.4 Scope of the study** 3](#_Toc485371170)

[**1.5 Limitations** 4](#_Toc485371171)

[**1.6 Significance of the Study** 4](#_Toc485371172)

[**1.7 Organization of the project** 5](#_Toc485371173)

[**1.8 Operational definition** 5](#_Toc485371174)

[SECTION TWO: LITREATURE REVIEW 6](#_Toc485371175)

[**2.1 Online System** 8](#_Toc485371176)

[**2.4 Existing system of online system** 9](#_Toc485371177)

[3. METHODOLOGY OF THE STUDY AND SYSTEM DESIGN 12](#_Toc485371178)

[**3.1 METHODOLOGY OF THE STUDY** 12](#_Toc485371179)

[**3.1.1 Methods of data collection** 12](#_Toc485371180)

[**3.1.2 System analysis** 12](#_Toc485371181)

[**3.1.3 Feasibility study** 17](#_Toc485371182)

[**3.1.4 Requirement analysis** 18](#_Toc485371183)

[**3.2 system design** 20](#_Toc485371184)

[**3.2.1 System design methods** 20](#_Toc485371185)

[**Class Diagram** 52](#_Toc485371186)

[**Activity Diagram** 60](#_Toc485371187)

[**3.3 system testing and implementation** 70](#_Toc485371188)

[**3.3.1 System testing** 70](#_Toc485371189)

[**3.3.1.1** **Unit testing** 71](#_Toc485371190)

[**3.3.1.2 Integrated testing** 71](#_Toc485371191)

[**3.3.1.3 System validation** 72](#_Toc485371192)

[**3.3.2 System Implementation** 72](#_Toc485371193)

[**3.4 Documentation** 72](#_Toc485371194)

[**3.4.1 User guide/help** 72](#_Toc485371195)

[**3.4.2 Technical** 73](#_Toc485371196)

[**3.4.3 Hybrid** 73](#_Toc485371197)

[**3.5 evaluation** 73](#_Toc485371198)

[SECTION FOUR 74](#_Toc485371199)

[4 RESULT AND DISSEMINATION 74](#_Toc485371200)

[**4.1 Result and Dissemination** 74](#_Toc485371201)

[**4.1.1 Result** 74](#_Toc485371202)

[**4.1.2 Dissemination** 74](#_Toc485371203)

[**4.2 main project layout and its description** 75](#_Toc485371204)

[CHAPTER FIVE 77](#_Toc485371205)

[5. CONCLUSION AND RECOMANDATION 77](#_Toc485371206)

[**5.1. Conclusion** 77](#_Toc485371207)

[**5.2. Recommendation** 77](#_Toc485371208)

[References 79](#_Toc485371209)

[APPENDICES 80](#_Toc485371210)

# **List of Table**

[*Table 1 hard ware specification. 21*](#_Toc485348868)

[*Table 2 software specification. 22*](#_Toc485348869)

[*Table 3 description of all data bases. 32*](#_Toc485348870)

[*Table 4 Use case documentation for login 36*](#_Toc485348871)

[*Table 5 use case documentation for create account 37*](#_Toc485348872)

[*Table 6 use case documentation for Manage system user 38*](#_Toc485348873)

[*Table 7 Use case documentation for Add Faculty Information 39*](#_Toc485348874)

[*Table 8 Use case documentation for Add Department Information 40*](#_Toc485348875)

[*Table 9 Use case documentation for Add Building Information 41*](#_Toc485348876)

[*Table 10 Use case documentation for Add Room Information 42*](#_Toc485348877)

[*Table 11 Use case documentation for Add Instructor Information 43*](#_Toc485348878)

[*Table 12 Use case documentation for Add Student (year and section) Information 44*](#_Toc485348879)

[*Table 13 Use case documentation for Add Course information 45*](#_Toc485348880)

[*Table 14 Use case documentation for Delete course information 46*](#_Toc485348881)

[*Table 15 Use case documentation to Add Class Schedule 47*](#_Toc485348882)

[*Table 16 Use case documentation to Add Class Schedule 49*](#_Toc485348883)

[*Table 17Use case documentation to Delete Class Schedule 49*](#_Toc485348884)

[*Table 18 Use case documentation to Search Schedule 50*](#_Toc485348885)

[*Table 19 Use case documentation to view schedule 51*](#_Toc485348886)

[*Table 20 symbol used in drawing 80*](#_Toc485348887)

# **List of figure**

[*Figure 1 development technology 23*](#_Toc485349398)

[*Figure 2 Home page 25*](#_Toc485349399)

[*Figure 3 admin log in page 26*](#_Toc485349400)

[*Figure 4: error message when user enters invalid user name or password 27*](#_Toc485349401)

[*Figure 5 class diagram 53*](#_Toc485349402)

[*Figure 6 Sequence Diagram for Login 54*](#_Toc485349403)

[*Figure 7 . Sequence Diagram for Adding Information 55*](#_Toc485349404)

[*Figure 8 Sequence Diagram for Update Information 56*](#_Toc485349405)

[*Figure 9 Sequence Diagram for Delete Information 57*](#_Toc485349406)

[*Figure 10 Sequence Diagram for Adding Account 58*](#_Toc485349407)

[*Figure 11 Sequence Diagram for Search Schedule 59*](#_Toc485349408)

[*Figure 12 Activity Diagram for login 60*](#_Toc485349409)

[*Figure 13 Activity Diagram for Updating Information 61*](#_Toc485349410)

[*Figure 14 Activity Diagram for Deleting Information 62*](#_Toc485349411)

[*Figure 15 Activity Diagram for Adding User Account 63*](#_Toc485349412)

[*Figure 16 Activity Diagram for Adding Class Schedule 64*](#_Toc485349413)

[*Figure 17 Activity Diagram for Searching Schedule 65*](#_Toc485349414)

[*Figure 18 collaborative diagram of login 65*](#_Toc485349415)

[*Figure 19 Collaborative diagram of create account 66*](#_Toc485349416)

[*Figure 20 Collaborative diagram of class schedule 67*](#_Toc485349417)

[*Figure 21 State Chart Modeling for login 68*](#_Toc485349418)

[*Figure 22 component diagram. 69*](#_Toc485349419)

[*Figure 23 architecture system 70*](#_Toc485349420)

[*Figure 24 main project layout 76*](#_Toc485349421)

# **Abbreviation/acronyms**

Abbreviation Meanings

CSS ---------------------------------------------Cascading Style Sheet.

CD-RAM---------------------------------------Compact Disk Read Access Memory.

SAD --------------------------------------------System Analysis and Design.

OOP-------------------------------------------Object Oriented Programing Language.

S/W -----------------------------------------------Software.

GB-------------------------------------------------Gigabyte.

HTTP--------------------------------------------Hypertext Transfer Protocol.

HTM L--------------------------------------------Hyper Text Markup Language.

H/W -----------------------------------------------Hardware.

MYSQL -------------------------------------------My Structured Query Language.

PHP ------------------------------------------------Hypertext Preprocessor.

JS -----------------------------------------------JavaScript.

UC----------------------------------------------Use Case.

BCA-------------------------------------------------- ----Basic Course of Action.

A1-----------------------------------------------Action one.

RDBMS------------------------------------ Relational Database Management System

NPCMST -------------------------------------Northern Philippines College for Maritime Science and Technology.

# 

# **SECTION ONE****: Introduction**

## **1.1 Background of the study**

On line Classroom scheduling system is to keep Track of student, course, class and instructor’s information. These classroom scheduling staffs works like University administrator and the workers of department staff. On line classroom scheduling system seems to be the ideal answer for busy individuals with a job and a family, who need more education in order to advance or just keep pace professionally. What could be better than a class that meets you have, and build a close relationship with professor and classmates through any time you are ready and have a computer available(F.Bourgoult, 2002)**.**

Our Classroom Scheduling service area assigns academic spaces/facilities to classes, final exams, and extracurricular activities on campus. Department administrators may request classroom assignment changes, as needed. These requests must be received by the fourteenth calendar day of the term. Once changes are approved, they will immediately be reflected in the People Soft Class Search and the PeopleSoft Student Schedule.

The team Classroom Scheduling system service area assigns academic spaces/facilities to classes, final exams, and extracurricular activities on campus and also online class room scheduling system it gives the following services classroom search, reserve classroom, report classroom problem, room change request (Dr.Dibon, 2010)**.**

Department administrators may request classroom assignment changes, as needed. The team Course/Class service area works with University departments to prepare the Schedule of Classes for each term for all academic classes. And new for this fall term, anybody can search the Pitt class schedule on your desktop or laptop browser as well as on your tablet or smartphone in the Pitt PS Mobile app!!! Towards the bottom of this page, information on finals, fees, policies and procedures, pre-reqs, and how to order a Course Description can also be found (Trump's, 1958)**.**

Services provided by CLASS room scheduling system include: **-** Providing students with information about all programs in CLASS, Connecting students to departments in CLASS, advising and helping students to identify and solve problems concerning courses, contacts, appropriate forms and procedures, and other issues confronting the students, Assisting students with academic administration paper work, such as late add, late drop, and late withdrawal petitions.

Bule Hora University is one among the public universities established by the federal democratic republic of Ethiopia to provide the higher education in the country through teaching research and community service in 2003 academic year in hosting 350 students in five faculties namely**:** Faculty of engineering and technology, faculty of natural and computational science, faculty of business and economics, faculty of social science and humanities, faculty of agriculture.

The University started initially with 21 academic stuffs in 2004 currently there are more than 230 academic stuff members and more than 100 supportive stuff from the total of University has six colleges consisting of: **-** Business and economics, Dry land agriculture, Engineering and technology, Other Health science, Natural and computational science and Social science humanities, And more than 5500 undergraduate students have enrolled in 21 programs.

The University contains the following staffs: **-** Academic Staffs (Registrar, Faculties, Departments, and Student Library service), Support (Student cafe service), and Administrations (Human resource management system).

The Classroom scheduling system in Bule Hora University is practiced manually here from 2003 still now. After preparing the Schedule for students they store the detail information manually in the registrar office, then the scheduler report the programs to departments and other University communities by posting on the announcement board. The function of the Classroom scheduling system is to keep Track of student, course, class and instructor’s information. This classroom scheduling staff works like University administrator and the workers of department staff.

## **1.2 statement of the problem**

Among the problem the following are the most severe ones:-

* This office perform its activities manually this also power, time and money wastage.
* Manual data handling is more prone to error.
* Class room optimization problem: - assigning a sections having large number of students in the rooms which is small in size.
* Clash of class for students: - in one classroom two section students were assigned.
* Not user friendly: - means only one person can prepare the schedule by deciding the method by him, if that person is not present the office face a problem on scheduling.
* Lot of paper work: - Existing system requires lots of paper work and even small transaction require many papers fill. Loss of even a single paper led to difficult situation because all the papers are interrelated.

Generally speaking the current class scheduling system of Bule Hora University is time wasting and not efficient, so by organizing the above points we develop online classroom scheduling system that solves the above mentioned problems.

## **1.3 Objective of the Project**

### **1.3.1 General objective**

The general objective of the project is to develop online classroom scheduling system for Bule Hora University.

### **1.3.2 Specific objective**

To achieve the general objectives of the project; we have to set the following specific objectives:-

* To changing the current manual scheduling system into automated one.
* In order to provide a system that will help scheduling staff to reduce conflicts in classroom scheduling.
* To developing easily accessible system.
* In order to avoid data redundancy.
* To providing Year section (students), Instructors and Course schedule as report form.
* In order to Removing Classroom optimization problem.
* To Store Facility, Department, Building, Room, Year section (students), Instructors and Course information and retrieve it when needed in report form.

## **1.4 Scope of the** **study**

The scope of this project is limited to only the details listed below.

1. Classroom scheduling is only for Regular student of Bule Hora University.

2. The system will assign Course, Instructor and Room for year and section (student).

3. It has the faster that shows classroom, instructors and course information to the user.

4. The system will accepts and store Facility, Department, Building, Room, Year section (students), Instructors and Course information

5. Managing an authorized access to the system by using user name and password

6. The system will provide backup mechanism in case of failure.

## **1.5 Limitations**

TheProject does not include:-

* Make up class.
* Night classes.
* Add and Drop Students.

## **1.6 Significance of the Study**

This project is finished and properly used it gives incredible benefits to the scheduling staff, Instructors and students.

Incredible benefits of online class room scheduling system

Online students can usually [choose a learning schedule](http://blog.connectionsacademy.com/Learning-Coach-Secrets-Creating-Learning-Schedules-for-Virtual-School/) that works best for their lifestyle, but in order to have a successful school year, it’s important for them to still meet their state’s attendance requirements, keep up with their courses and assignments, and stay in frequent [communication with their teachers](http://blog.connectionsacademy.com/Call-Me-Maybe-Teacher-Support-for-Virtual-School-Families/). Some virtual sessions are at fixed times, so students should pay close attention to their course schedules.

The project system has the following significance:-

* Students and Instructors used to search the information and see their results online in anywhere, any time without geographical and organizational affiliation.
* Since it is Online it will speedy up the scheduling staff work and put them in the line of technology
* The system provides all the information need for classroom scheduling.
* The administrator can add users, edit user information and delete user if it is needed.
* The system is Store, Update, and Retrieve the classroom schedule in safe and in reliable manner
* For security reason the system use user name and password for administrator, scheduler, and system user.

## **1.7 Organization of the project**

Our project organization contains five chapters. Chapter one contains Introduction and Background, Statement of problem, Objective of the project, Scope and significance of the project. Chapter two explain of the Literature Review. Chapter Three express about System Analysis and System Design, Methodology and Chapter Four deals about result and dissemination, Chapter five explains about conclusion and recommendation.

## **1.8 Operational definition**

**Scheduling**: - in the case of routing used to operating time standards for the students and instructor.

**Assigning classroom**:-it is used to assign class room for the students and instructor and also used to create and distribution of class room for the instructor and students.

**Feedback**: - from anonymous user to the Admin.

**Room** - The place where the student grasps the knowledge and the instructor teach the student.

**Class**:-is the period of time during which students meet to pursue a course of instruction.

**Instructors** - The one who teach the student.

**Robustness**: **-** The system should be tolerant of errors and produce error reports that are simple to be understood by the users.

**Course**: A curricular offering is a University course of instruction only if it is approved by Academic Affairs.

**Methodologies:** A system of broad principle or rules from which specific method or procedure may be derived to interpret or solve different problems within the scope of a particular discipline.

**Security:** Security requirement is very important in this project, including privacy. The administrator (including course admin and system admin) should provide high security interface for user and protect their personal data.

# **SECTION TWO: LITREATURE REVIEW**

According to Dr. Dibon (2010), a study on a report about online class scheduling system in the case of Teachers and Student’s stated that Teacher’s expressed concern that higher level of frustration and stress due to a lack of assigned time to prepare classes can negatively impact on their interactions with students. The lack of preparation time can also result in classes that are not planned/prepared as well as they could be(Dr.Dibon, 2010)**.**

Further, when a teacher doesn’t have time to properly assess student work, in a timely fashion, and has little time to provide tutorial classes, remedial work for students who need extra help is often compromised. Having adequate preparation time is a critical factor to a teacher satisfaction. In this Study, the proponents that will help organize the teachers work load. When teachers are satisfied with the amount of time they had for preparation they were much more positive about their work and profession in general. Manual system is retrieving, maintaining, security and filling of records consume lot of time and effort. There are some cases wherein misplaced of records are taking place because of the years gone by. Furthermore, these files were only kept in envelope, folder or wooden racks. There are also instances when the right information is given to the wrong person, which may affect quality of service. (M. Cantonas, 2008) the need for a computerized system is very much essentials to establishments, especially schools. It provide a great help when it comes to organizing and speeding up process of work in offices.it will be solve the manual system to change online form and also to avoid a lack of assigned time to prepare classes can negatively impact on their interactions with students(M.cantonas, 2008)**.**

Technology is the making, modiﬁcation, usage, and knowledge of tools, machines, techniques, crafts, systems, and methods of organization, in order to solve a problem, improve a pre-existing solution to a problem, achieve a goal, handle an applied input or output relation or perform a speciﬁc function. It can also refer to the collection of such tools, including machinery, modiﬁcations, arrangements and procedures (williams, online classroom scheduling, 2012) **.**

One of the remarkable and much known products of technology advancement is the conversion of manually-operated system in to automated system. Automation produces a

Great impact in the lives of man, particularly in the ﬁeld of industry, business, medicine, and education (williams, online classroom scheduling, 2012). A scheduling system is usually a form of software that allows someone to construct schedules in an easier, faster and error minimized.(williams, online classroom scheduling, 2012)

It is very time consuming and sometimes leads to a disaster if output is not eﬃcient. Northern Philippines College for Maritime Science and Technology (NPCMST) as an educational institution oﬀers services to the clientele more particularly the students and to the community. The primary operations of the school are non-stop starting from pre-enrolment up to the post-graduation activities. These activities require money, labor force and time. It is a fact that arranging class schedules, instructor’s load and room utilization for the students and faculty in every department is one of the many activities that each department heads must prepare before classes start. But the school used the manual way of preparing the class schedule. With the manual system, more time and labor force is required to plot, arrange, and revise the class schedules, room utilization and instructors’ load provided by the department heads. This process is a very large, complex, and time consuming task with many inputs to take into consideration. The quality of the output has an immense impact on students, faculty, and the department as a whole. Poorly planned oﬀerings pose a great impact on students’ ability to take courses, class utilization, and students ‘ability to fulﬁll prerequisites, time to graduation, budget, and more (williams, online classroom scheduling, 2012)**.**

Faculty has a big impact to the quality of instruction, the satisfaction of faculty members, student retention, and department policies. Poorly scheduled time table can also aﬀect students’ ability to take courses due to conﬂict, course utilization, lab utilization, time to graduation, student satisfaction, faculty satisfaction, department policies, and it can lead to undesirable last minute.

Changes. This study is proposed with the aforementioned reasons as stated. This process partially deﬁnes the lives of students and faculty members in terms of schedule and should not be taken lightly. Because of the impact of this process, it is important to incorporate individual and group preference into as many areas of this process as possible and to create a robust process that generates close to optimal solutions. There has been a research around course assignment and course time tabling and many operations research techniques have been utilized to address these problems, however often the techniques are tested, but rarely implemented as shown by Carte rand Lamporte (1998). While some solutions have been fully implemented and there are a couple products available in the market, those weren’t thoroughly investigated due to the software and implementation cost associated with them. Since much of the research focuses only on generating a feasible schedule and appears to lack the preference drivers that are valuable in creating a highly desirable (lamporte, 1998).

## **2.1 Online System**

A system that is connected to the internet. An offline system would be a system that is disconnected from the internet. And also online is the condition of being connected to a network of computer or other device. The term is frequently used to describe someone who is currently connected to internet. A computer or a device connected to a network (such as internet) and ready to use other computer or device.

**2.2 Advantage of online system**

In today busy life style, most people have no time to go back to school even they have intention to get more knowledge for carrier advancement, job promotion or simply to learning something is new.it also to provide you with a flexible learning environment from any location as long as you are offered with internet connection (W.burgard, 2000)**.**

With a proper time management you can easily plan your online system session to fit in to your busy schedule and follow your own pace of study to complete your degree program.

Prepares Students for the Future: It is without question that students will need to know how to use technology to communicate and collaborate in their future careers.

Increases Student Engagement and Motivation: Technology allows teachers to engage and motivate students in new ways, like taking students on a virtual field trip to other parts of the world, No need of install software on your server or device, less time, Easy to use.

**2.3 Disadvantage Online system**

Can become the disadvantage if you are not the right candidate of online system. The flexibility of planning your own schedule in online system (W.burgard, 2000)**.**

Students do not have equal access to technological resources**:-**There will be students who do not have iPads or cameras or even the textbooks for class. It will be up to you to point them in the direction of the library or community resources, or to create assignments that allow them to work in groups and share resources.

**Cost:** Quality materials take time to produce and adequate staff time as well as resources need to be allocated.

**Quality:** Teacher-made materials will not normally have the same standard of design and production as commercial materials and hence may not present the same image as commercial materials.

**Training:** To prepare teachers for materials writing projects, adequate training is necessary. Materials writing is a specialized skill and not all teachers’ area capable of writing good materials and Need constant access to the internet.

## **2.4 Existing system of online system**

In 1994 the National Education Commission on Time and Learning found the issue of how time is spent in schools to be a matter of urgency. Likewise, the National Education Association reported that "across the nation in schools and districts engaged in transforming schools into more effective learning communities, the issue that has emerged as the most intense and the one that universally dominates discussion is time" To spend the "time budget" more wisely, schools use a variety of scheduling arrangements. Discussed here are the various types of schedules that schools use to make optimum use of the school day. In the early nineteenth century, teachers typically had a limited education and were expected to function well in all subject areas. Staff at all levels taught any subject at any time of the day. In the late 1800s, the Carnegie unit–comprised of approximately fifty-minute class periods in which a single subject is taught, and for which teachers specialize in particular subject areas–became the most frequently used scheduling format. J. Lloyd Trump's An Image of the Future*,* published in 1958, caused schools to experiment with ungraded instruction, long periods of independent study, and large group instruction. The plan failed, however, partly due to the large amount of unstructured, independent study time for students(Trump's, 1958)**.**

Other scheduling experiments have also failed. In the 1970s, the notion that flexibility in scheduling is beneficial to staff and students led to the Open School concept. Divisions between classrooms in elementary schools were eliminated and students were able to progress at their own speed, moving from one grade area to another. During the 1960s and 1970s, some schools modified the traditional seven-period day, breaking the day up into twenty-minute modules and calling the plan modular flexible scheduling*.* Neither plan took hold(Jack, 1970)**.**

In the 1970s, with flexibility continuing to be a priority*,* fluid block scheduling became popular and successful. This scheduling pattern allots a block of two to three hours to teams of teachers from various subject areas, allowing teachers to schedule instruction according to student needs. Another flexible scheduling alternative that began in the late 1980s and continues in popularity is the zero period schedule. Designated courses begin an hour earlier than the regular school day, allowing some students to leave an hour earlier or enroll in an extra class(james, sheduling, 1980)**.**

The 1989 publication of Turning Points*,* by the Carnegie Council on Adolescent Development, brought major changes for middle-level schools. Recognizing that junior high schools were simply mirror images of high schools, the council recommended that schools be reconfigured to fit the developmental needs of young adolescents. Thus, various forms of block scheduling and interdisciplinary teaming took hold in middle schools, and later in high schools as well. With block scheduling*,* teachers are given longer periods of time–usually ninety minutes–to work with students. Interdisciplinary teaming is a popular arrangement where a group of teachers (usually four or five) works with 125 to 150 students, essentially creating a school within a school. Interdisciplinary units of study help students' understand the connections between subjects. Teaming is sometimes combined with block scheduling (james, sheduling, 1980)**.**

Selecting a Schedule:-Selecting an appropriate school schedule involves some fundamental assessments, including examining what teachers are doing and determining if classroom instruction is improving student achievement. When teachers make instruction optimally effective for students, it is appropriate to consider how use of time could further enhance learning–the schedule must support, not drive, the instructional program.

**2.5 Advantage of classroom scheduling system**

Provides interactive classroom setting that promotes the open exchange of ideas.  
Having numerous students learning in the same classroom has the added benefit of allowing students to exchange ideas and questions with one another providing another valuable learning medium that online environments cannot replicate. First-hand interaction with the educating professor also allows for ideas to be exchanged freely and without any communication barriers(james, classroom sceduling, 1989)**.**

Easy to use, drag and drop - Saves you time and money. Clean and clear interface - See the visibility of all your resources. Create workload schedules, shift plans, work and task list. Schedule 1000's of resources in a single easy to use application. Automated checks - Check for the correct skills, availability and conflicts. Share - Share via Outlook, iCal, Google Calendar, Email, SMS, and Internet. Access with any device - Windows, Mac, iPad, iPhone and Android (james, classroom sceduling, 1989)

The online classroom scheduling system advantage the scheduler wants to preparing the schedule the system will be automatically provide instructor, course, year section (students) and room information according to the department the schedule is preparing, It will be automating service given by the system to increase performance of the system, to developed more security data and take the system back up file to prevent loss of data (james, classroom sceduling, 1989)**.**

**2.6 Disadvantage of classroom scheduling system**

Depending on the level of interaction in the classroom setting, shy students may be allowed to attend classes without providing alternative ways to communicate ideas. Forcing students to learn by vocal exchange with a professor may limit their ability to learn. Ignore individual learning differences between students.

Classrooms environments tend to group students together in large number often making it difficult for instructors to isolate learning deficiencies (james, classroom sceduling, 1989)**.**

**SECTION THREE****:**

# **3. METHODOLOGY OF THE STUDY AND SYSTEM DESIGN**

## **3.1 METHODOLOGY OF THE STUDY**

### **3.1.1 Methods of data collection**

To study about the existing system we used the following data collection methods:-

**Interview**

Through interview we communicated with the Bule Hora University office of the Registrar Director and Scheduler those responsible employees to get information about the existing system like:-staff problem like Clash of classroom, Assign instructor for more than one year section (students) at the same time, Assigning classroom more than its capacity, inefficient way of using resource like class room and to be identify/solve this problem in the case of proposed system and special task for the Bule Hora University office of the Registrar Director and Schedule.

**Observation**

This method of data collection is very important because it helped us to understand how the existing working environment is look like and in addition to that it help us to decide how new system should be done.

### **3.1.2 System analysis**

#### **3.1.2.1 Existing system**

First let us see how the registrar office prepare Scheduling; the scheduler collect all course from each department and write it in Microsoft word, then the scheduler prepare a table in Microsoft access for each department and sections, the table have educational time(2:00-6:00 and 7:00-11:30) and educational days (Monday – Friday), and Venue (Room). then Scheduler creates a schedule by drag form list of courses and drop in to tables for the section that he already created, when he finished this, he sends it to the Manager to verify it finally the schedule distribute for all the department heads, and announce the schedule to all of the university community by posting in announcement boards. (Sample for Sleep which comes from department and Schedule which send to department heads and the schedule which is posted in the announcement board is attached in the Annex part of this document).

As you see the task is processing by the Microsoft word and access, even they are not using the whole futures of Microsoft access the scheduler use the access for tabling purpose not for automatically generating schedule or for using algorithms to generate schedules, So this proposal will be emphasis to more computerize the existing system of Bule Hora University classroom Scheduling system.

**3.1.2.1.1 Problem of the Existing System**

Problems are undesirable situations that hinder the registrar from fully achieving its purpose, goals or objectives. Assigning classrooms, instructors, courses and viewing schedules are done by director but under director there is one person who help to prepare the schedule that is the scheduler.

The staff has some problems like Clash of classroom, Assign instructor for more than one year section (students) at a time, Assigning classroom more than its capacity, inefficient way of using resource like class room and some related problems as follow:-

**1. Manual operator control:-**As we know if there is manual operator control, there will be chaos and errors.

**2. Inability of modification of data:-**As we say previously there is a lot of paper work because all the transaction is done in printed paper, so this makes difficult or inability the modification.

**3. Not user friendly:-**The existing system is not user friendly because there is no simple and formal way to generate schedule, the mechanism and the method of generating class room scheduling is known by one person, if something happens on this person the staff can’t cover his work.

**4. Difficulty in reports generating:-**In the current system reports are generated with great difficulty and it take a long time to generate the report because they use Paper based report generating.

**5. Lot of paper work:-**Existing system requires lots of paper work and even small transaction require many papers fill. More over any unnatural cause (such as fire in organization) can destroy all data of organization. Loss of even a single paper led to difficult situation because all the papers are interrelated.

**6. Inability of sharing the data:-**Data cannot be shared in the existing system. This means that no two persons can use the same data in existing system. Also the two departments in a campus cannot interact with each other without the actual movement of data.

**7. Use a lots of times:-**To assign classrooms, instructors, courses and preparing the schedule report.

#### **3.1.2.2 proposed system.**

It will be solve the above problem of existing system, the team proposed to developed web-based application to enhance or improve the online classroom scheduling system, list of proposed solutions is:-

* It will be automating service given by the system to increase performance of the system.
* It will be developed more security data.
* It will be take the system back up file to prevent loss of data.
* It will be reduce the work overload and increase quality.

The proposed system will be controls the online classroom information in Bule Hora University in computerized way. These system will be stores the detail of every Building, Room, Faculty, Department, Instructor and Course information in the campus. Additionally the General overview system is described as follow:-

The proposed system is related to online classroom scheduling system for regular students of Bule Hora University.

The proposed system will maintains four levels of users Administrator, Scheduler, User and any system user (the free interface no need to be registered for accessing it).

* The system needs a system Administrator who control the system.
* The system Scheduler who prepare the schedule.
* The system will registered User (department Heads) When the scheduler wants to preparing the schedule the system will be automatically provide instructor, course, year section (students) and room information according to the department the schedule is preparing.

**3.1.2.2.1 Goals of the Proposed System**

The goal of the proposed system should be provide the following:-

* To Seeing Time management in classroom scheduling of Bule Hora University office of registrar in scheduling staff by making the system available at any time and accessible from any ware since it’s online.
* To Change the existing system with the efficient and speedy new online system to decrease the burden of scheduling staff members, since the system will developing with the aim to overcome the drawbacks of manual system.
* To Prepare user friendly classroom scheduling system, since the retrieval and storing of data will easy and fast and also the system will be maintain the data efficiently, moreover the graphical user interface it will be attractive and easy for the user to deal with the system.
* To prepare easy reports generating mechanism; the system will be provide various reports in accordance with requested information i.e. (about Course, Instructor, and Room period of time (weekly or for the semester).
* To minimize or not use of paper work, the proposed system will be either does not require paper work or very few paper works is required. All the data will be feted into the computer immediately and various reports can be generated through computers. Since all the data will be kept in a database no data of the campus can be destroyed. More over work becomes very easy because there is no need to keep data on papers.
* To Computer operator control, since the system will be computerized there will be effective, efficient and onetime work.
* To storing and retrieving of information is easy.

#### **3.1.2.3 Proposed system over existing system**

The proposed system controls the classroom information in Bule Hora University in computerized way. These system stores the detail of every Building, Room, Faculty, Department, Instructor and Course information in the campus and to reduce the work overload and increase quality, the new system distributes the functions to different sections based on the relevance they have to the job. Such work division highly relieves the registrar from doing redundant and tiresome jobs daily. It should also have the accuracy of information, timelines (both in being up-to-date and available when required), easy of processing documents, easy of taking out/insert data/information from/to database (for Registered users), easy of searching and viewing the search result that can be printed or saved for any system user and providing good service for all. Hence to create such system we need to make the new system to be Online System***.***

But the existing system are the registrar office prepare Scheduling; the scheduler collect all course from each department and write it in Microsoft word, then the scheduler prepare a table in Microsoft access for each department and sections, the table have educational time (2:30-6:20 and 9:30-12:20), educational days (Monday – Friday). then Scheduler creates a schedule by drag form list of courses and drop in to tables for the section that he already created, when he finished this, he sends it to the Manager to verify it finally the schedule distribute for all the department heads, and announce the schedule to all of the university community by posting in announcement boards.

#### **3.1.2.4 Analysis tools (models)**

The admin Add:-Faculty, department, instructor, year and section, course, building, room, academic year as the lists. And used for crate user account, record, search, edit and delete information about scheduling system.

The Scheduler:-used for Search class schedule, View course, create class schedule, View notice about scheduling system.

The user of Scheduling system objectives is to provide user with well-organized user interface that could help users to spend less time to understand how they can use the system and what the system can offer to them and the user crate account is after administration login then the user are crate account.

### **3.1.3 Feasibility study**

This study is the measurement and study of how beneficial of proposed system will be to the organization. Feasibility measure success or failure of the system. A feasibility study is comes out form following different aspects:-

#### **3.1.3.1 Technical feasibility**

The technical feasibility assessment is focused on gaining an understanding of the present technical resources of the organization and their applicability to the expected needs of the proposed system. It is an evaluation of the hardware and software and how it meets the need of the proposed system.

The new system is operationally feasible because:-The new system fits with the existing system.

Satisfy the user needs or requirements Provides the end users and administrator with timely, accurate, reliable, flexible and usefully formatted information. Provides adequate through put and response time.

The system offers adequate control to protect against fraud and embezzlement (misuse) to guarantee the accuracy and security of the data and information.

#### **3.1.3.2 Operational feasibility**

The operation Feasible this system is that, its GUI/ simple button click and provide appropriate information. So the only things is to read the notification and use English language.

#### **3.1.3.3 Economic feasibility**

The project is economically feasible since we are getting sufficient free software required for the project from Internet and others materials are covered by the group members.

Tangible benefits: benefits that are easily quantified from the conducted system are:-

* Fastest processing time and small amount of processing error.
* Small response time and many services.
* Easy and fast file management.
* Reduce cost for manual data management (Reduced expenses).
* Easy update & retrieval on stored records.

### **3.1.4 Requirement analysis**

#### **3.1.4.1 Functional Requirements Specification**

Functional requirements determine what the system can do, as well as the input and output of the system

* **Administrator functionalities**

Administrator can interact with the system as follows:

**Add:-**Faculty, department, instructor, year and section, course, building, room, academic year as the lists.

**Record:-**The University depends on information to develop programs and services, make critical strategic decisions, protect property rights, manage projects, serve students, and generate revenue. That information is contained in [University records](http://www.case.edu/its/archives/Records/glossary.htm#UniversityRecords). Records can only be fully utilized as an asset if they are properly managed to enhance access to information and to reduce costs and risks. A records disposition program is a critical component in properly managing records.

**Search:-**Online classroom scheduling system it can search classroom schedule for students, teacher/instructor.

**Edit:-**Online classroom scheduling system it can edit the class room of students, time table.

**Delete and stored information:-**Online classroom scheduling system it can delete and store information by respected user.

**Preparing schedule for each year and section:-**The system it can use to prepare schedule for each year and section by effectively assigning room, course, and instructor.

**View feedback:-**The system it can be show the feedback activities that is submit from user and scheduler function and the admin also send feedback to user and schedulers.

**Create account:-**The system it can be create account for the users can be create account by providing all the required information and update this information when it is needed, and this capability is given to the Administrator of the system.

**Backup data base: -** Administrator it can be backup data base of the system and it can be view the backup data base by structured query languages (SQL).

* **Scheduler functionalities**

**Search class schedule**:-Online classroom scheduling system it can search classroom schedule for students, teacher/instructor.

**View course: -** by Course List for All Department.

**Create class schedule:-**it can be create class schedule by facility and department by filling all lists.

**View notice: -** The system it can be show the view notice activities that is submit from user and administration function and the scheduler also send feedback to user and admin.

* **User/department functionalities**

**View course: -** by Course List for All Department.

**View notice: -** The system it can be show the view notice activities that is submit from scheduler and administration function and the user also send feedback to scheduler and admin.

**Search class schedule**:-Online classroom scheduling system it can search classroom schedule for students, teacher/instructor.

#### **3.1.4.2 Non-functional Requirements Specification**

There are many non-functional requirements ranging from user interface to security issues. Generally non-functional requirements of the system can be viewed as follows.

**Performances**

**A. Speed: -**the system perform at optimum speed at normal circumstances (i.e., when networks and nodes are OK).

**B. Robustness: -** The system tolerant of errors and produce error reports that are simple to be understood by the users.

**C. Reliability: -** The system is reliable in generating schedule without any conflict.

**User Friendly Interface**

Since there are potentially many users of this system, it will have different types of user interface. It will include the necessary features for each user so the application will have a user friendly interface for low knowledge of computer users, and simple and interactive user interface components should be part of the system.

**Guide and Help**

Frequently Asked Questions are included in the system and as help or tips hover action (when the mouse placed on some buttons or links it have to show what the user can do with that) is should be available for the end-users.

**Security Issues**

The system should be protected with different security features (techniques) on both the software and hardware part.

**On software part**: - on this part when the registered user wants to login firs he has to select his/her privilege (means Administrator, Scheduler or User) then the system will display login page to enter his user name and password. This protects the system from any unauthorized access. Without Administrator, scheduler, and User other users (anonymous system users) can’t add, edit, delete any data, but they can view information they need by preparing query to the system and the system will display the result as report...

**On hardware part**: - the server is expected to be placed in a secured room.

## **3.2 system design**

In the previous chapter we have identified the functional and non-functional requirements of the system and produced the analysis model. The following are discussed in this chapter: design goals, system architecture, system decomposition, deployment and database design and interface design.

### **3.2.1 System design methods**

System design methods is the way used to solve the existing problem. Among the different methodologies available the team will use the SAD (System Analysis and Design) methodology for the development of the system. This is because SAD provides the following advantages:-

* Promotes better understanding of user requirements.
* It is best way to construct, manage and assemble objects that are implement in the system. And the composition of objects and collaboration between objects on the system.
* Leads to clear design by using use case, activity diagrams, and sequence diagrams.

Develop the overall activities such as activity diagrams, sequential diagrams, and use case diagrams.

#### **3.2.1.1 Software and hardware requirements**

**Hardware requirement**

For the successful run of the proposed system, the personal computer should have the following minimum hardware requirement:

A monitor:-for perform project.

A printer: used for printing necessary documents.

Flash:-to store file or save important file.

CD; - for backup important folder.

**Hardware tool**

To develop the new system the following hardware are will help us to develop the new system.

|  |  |  |  |
| --- | --- | --- | --- |
| **Item no** | **Hardware** | **Capacity** | **specification** |
| 1 | Flash disk | 8GB | Process data. |
| 2 | Desktop | 465GB | To do overall activities. |
| 3 | CD-RAM | 4.7GB | Process data. |
| 4 | Camera | 21px | To collect different image. |

Table 1 hard ware specification.

**Software tool**

In addition above HW the following SW will help us to develop the new system.

|  |  |  |  |
| --- | --- | --- | --- |
| **Item no** | **software** | **capacity** | **Specification** |
| 1 | Operating system | Window 8.1 | To processing all the work. |
| 2 | WAMP server |  | To provide response for user. |
| 3 | MYSQL |  | To store and access the data and database. |
| 4 | A vast anti-virus |  | For scan the document. |
| 5 | MS word 2013 |  | To process writing document. |
| 6 | Apache server |  | To the process of data base. |
| 7 | Web browser |  | To run the system or test the code. |
| 8 | Edraw max |  | To create table and diagram. |

Table 2 software specification.

Software Development approach

As known there are much software development methodology from those objects oriented and structure model.

Structured Programming:-Structured programming can be defined as a Software application programming technique that follows a top down design approach with block oriented structures.

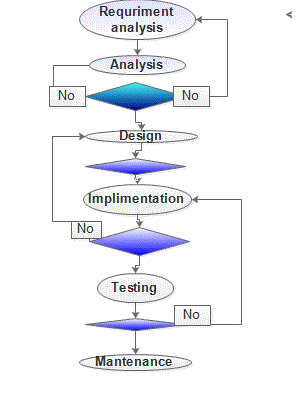
Such as waterfall model.

Object-Oriented Programming:-Object-oriented programming can be defined in simplest terms as software application programming where there is an interaction between self-contained mini-programs or objects within the main program. Such as iterative model.

From those we decide to do the system with Iterative software development methodology.

Iterative is a design methodology based on a cyclic process of prototyping, testing, analyzing and refining a product or process is intended to ultimately improve the quality and functionality of a design, in iterative design interaction with the designed system is used as a form of research for informing and evolving a project. A successive version or iterations of a design are implemented and also it allows risk management control. This methodology is more flexible based on the current problem we face.

Started in development process, we can’t revert back to the previous step to redevelop or perform any change.

Figure 1 development technology

Requirements: This is the first phase of development where all the requirements gathered and documented.

Analysis: In this phase we analyze all the gathered requirements whether the requirements are valid or invalid.

Design: In this phase all the system design is analyzed and specified like hardware, system configuration and architecture or the system.

Implementation: In this phase all the development works are performed and development components or units handed over to testing team.

Testing: Once the development completed, testing phase starts and in this phase we test the each unit or component and make sure the developed components are working as expected. All the testing activities are performed in this phase.

Deployment: Once testing is completed and make sure there is no bug or defect or any kind of issue, then project is deployed to production. Once product is deployed to production the end users start using the product.

Maintenance: We always keep eye on the product and provide all the necessary bug or issue fixes if occurs in production or reported by end users. Also time to time we keep updated the product with new updates or patches if developed or available.

#### **3.2.1.2 Development tools for design**

##### **3.2.1.2.1 Tools for designing of the system**

Notepad++ and Adobe Dreamweaver. - used for processing of code writing

Adobe Photoshop: - for the process of photo editing like banners.

Web browser: - used to run the system or test the code.

Edraw max. Used to create table and diagram.

WAMP server. Used To provide response for user.

Flash disk: - used for Process data.

###### **3.2.1.2.1.1 User interface**

Scheduling system objectives is to provide user with well-organized user interface that could help users to spend less time to understand how they can use the system and what the system can offer to them. Another objective is to avoid user to spend much time entering the time schedule for each control unit. Scheduling system provide users with function to entering the schedule for all control unit of the same type and multiple control unit.

The following user interface is the work space or home page for the classroom scheduling system. User can select any job from the menu or from links by clicking on them.



Figure 2 Home page

This User interface appears always when a user enters the classroom scheduling system address in to the web browser that is “local host\ index.php". It gives the free service to the system user.

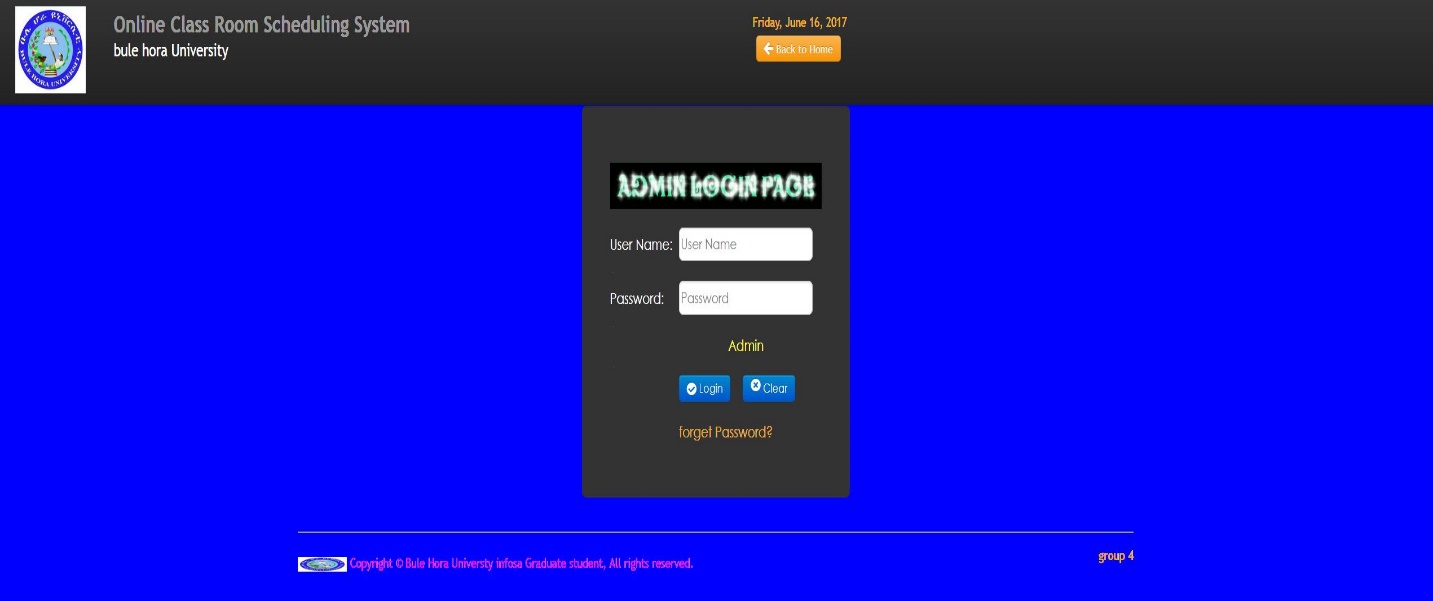


Figure 3 admin log in page

It helps to identify the user of the system. And also it redirect the user to his home page if the username, password and the account type provided are valid (or if it match with the user information that is registered when creating account), and the user press Login Button or Enter Key.

The following User interface shows error message "Please fill out this field" when a user clicks login Button or press enter without entering user name and password And the message **" please check your User Name, Password and select your account type and try again!!!** "Is shown when user entered user name, password or account type is wrong

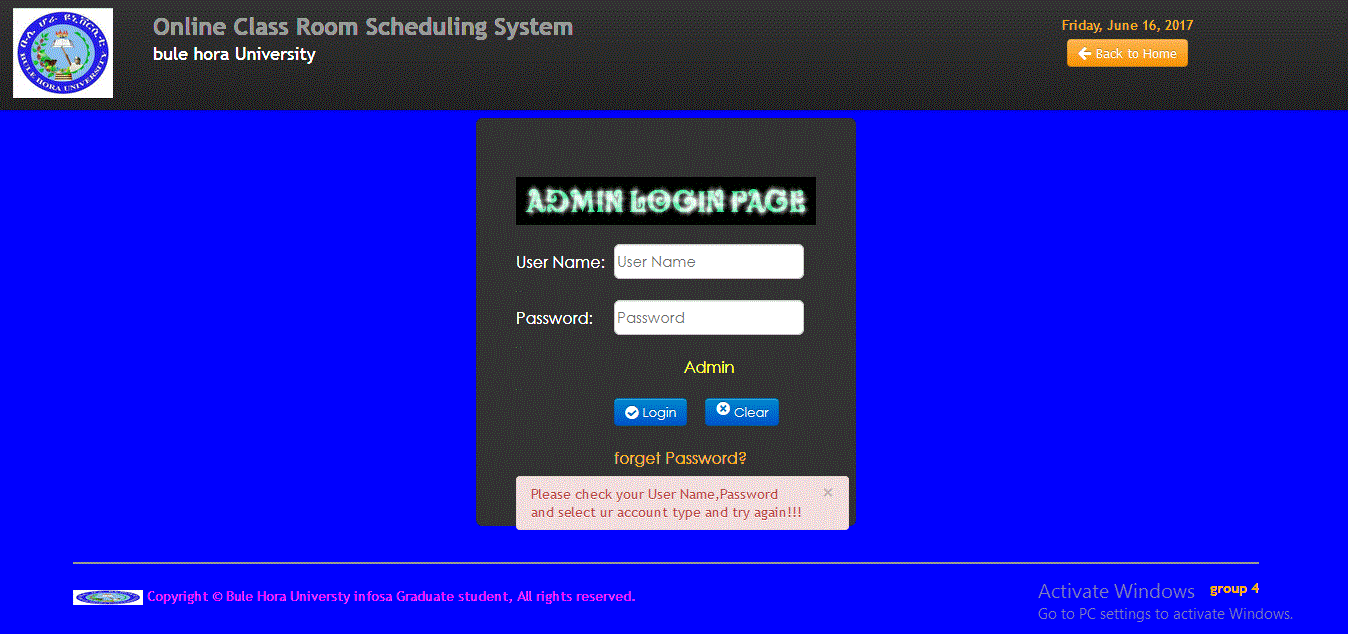


Figure 4: error message when user enters invalid user name or password

###### **3.2.1.2.1.2 Database (data dictionaries)**

A data dictionary is a collection of descriptions of the data objects or items in a data model for the benefit of programmers and others who need to refer to them. A first step in analyzing a system of objects with which users interact is to identify each object and its relationship to other objects. This process is called data modeling and results in a picture of object relationships. This contains all data definitions for cross-referencing and for managing and controlling access to the information repository / database. It provides a very thorough interface description (comparable to Interface Control Documents) that is independent of the model itself. Changes made to a model may be applied to the data dictionary to determine if the changes have affected the model’s interface to other systems. Data dictionaries do not contain any actual data from the database, only keeping information for system. Without a data dictionary, however, a database management system cannot access data from the database. Below are the illustrations:-

**Description of all data bases.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Class Name | Attribute and Description | Return | Method | Description |
| **faculty** | faculity\_id | int (PK) |  |  |
| faculty\_name | varchar (U) |
| faculty\_in charge | varchar |
| address | varchar |
|  |  | add() | Allow the User to add faculty information |
| edit() | Allow the User to edit faculty information |
| delete() | Allow the User to delete faculty information |
| search() | Allow the User to find faculty information from the database |
| **department** | department\_id | int (PK) |  |  |
| faculty\_name | varchar |
| department\_name | varchar (U) |
| person\_in charge | varchar |
| address | varchar |
|  |  | add() | Allow the User to add department information |
| edit() | Allow the User to edit department information |
| delete() | Allow the User to delete department information |
| search() | Allow the User to find department information from the database |
| **instructor** | instructor\_id | int (PK) |  |  |
| instructor\_name | varchar |
| acadamic\_rank | varchar |
| destination | varchar |
| department | varchar |
|  |  | add() | Allow the User to add instructor information |
| edit() | Allow the User to edit instructor information |
| delete() | Allow the User to edit instructor information |
| search() | Allow the User to find instructor information from the database |
| **course** | course\_id | int (PK) |  |  |
| department | varchar |
| course\_code | Varchar (U) |
| course\_title | varchar |
| course\_catagory | varchar |
| year | varchar |
| semester | varchar |
| lab\_hours | varchar |
| lecture\_hours | varchar |
| total\_chr | varchar |
| mod\_of\_delivery | varchar |
|  |  | add() | Allow the User to add course information |
| edit() | Allow the User to edit course information |
| delete() | Allow the User to delete course information |
| search() | Allow the User to find course information from the database |
| **year -section** | year\_section\_id | int (PK) |  |  |
| year\_section | Varchar (U) |
| department | varchar |
|  |  |
| no\_of\_student | varchar |
|  |  | add() | Allow the User to add year section information |
| edit() | Allow the User to edit year\_section information |
| delete() | Allow the User to delete year\_section information |
| search() | Allow the User to find year\_section information from the database |
| **building** | bulding\_id | int (PK) |  |  |
| bulding\_name | varchar (U) |
| no\_of\_room | varchar |
|  |  | add() | Allow the User to add building information |
| edit() | Allow the User to edit building information |
| delete() | Allow the User to delete building information |
| search() | Allow the User to find building information from the database |
| **room** | room\_id | int (PK) |  |  |
| bulding\_name | varchar |
| room\_name | Varchar (U) |
| description | varchar |
| max\_capacity | varchar |
|  |  | add() | Allow the User to add room information |
| edit() | Allow the User to edit room information |
| delete() | Allow the User to delete room information |
| search() | Allow the User to find room information from the database |
| **Academic\_year** | acadamic\_year\_id | int (PK) |  |  |
| acadamic-year | varchar |
|  |  | add() | Allow the User to add academic\_year information |
| edit() | Allow the User to edit acadamic\_year information |
| delete() | Allow the User to delete academic\_year information |
| search() | Allow the User to find academic\_year information from the database |
| **schedule** | schedule\_id | int (PK) |  |  |
| department | varchar |
| acadamic\_year | varchar |
| semester | varchar |
| year\_section | varchar |
| course | varchar |
| instructor | varchar |
| day | varchar |
| time\_start | varchar |
| time\_end | varchar |
| room | varchar |
|  |  | add() | Allow the User to add class schedule |
| edit() | Allow the User to edit class schedule |
| delete() | Allow the User to delete class schedule |
| search() | Allow the User to find class schedule from the database |
| **user** | user\_id | int (PK) |  |  |
| first\_name | varchar |
| last\_name | varchar |
| user\_name | varchar (U) |
| password | varchar |
| email | varchar |
| faculity | varchar |
| department | varchar |
| user\_type | varchar |
| security\_q | varchar |
| security\_a | varchar |
|  |  | add() | Allow the User to add user account information |
| edit() | Allow the User to edit user information |
| delete() | Allow the User to delete user information |
| search() | Allow the User to find user information from the database |
|  |  |  |  |  |

Table 3 description of all data bases.

3.2.1.2.1.2.1 Use case diagram

**A) System Use Case Documentation and Diagram**

A **use case** describes a sequence of actions that provide a measurable value to an actor. In other words, it shows a way in which a real world actor interacts with the system.

**Use Case Diagram** is used to describe the boundary and interaction between the user and the system and also it used to visualize what the system can do.

System use case reflects analysis decision and arguably, even design decision. The main difference between an essential use case and system use case is in the system use case, we include high level implementation decision. But we don’t include high level design issues when we are think to deal with essential use case model.

A system use case model is composed of a use case diagram and the accompanying documentation describing the use case, actors and association. A use case description sequences of action that measurable value to an actor. And also the use case is written by narrative.

In order to identify use cases the team examined the needs of users, the main tasks of users, the information n users’ needs to examine, create or change inform to the system.

Use Case Diagram consists of:-

* **Actor**: a role that a user plays in a system and represent in the diagram by a stick figure.
* **Use Case**: a set of scenarios that the system will perform and represent in the diagram by an oval shape.
* **Association**: represent interaction that the actor makes with the system and represent by a connector line.

Here are some use cases that we have identified:

**UC1**. **Login**

**UC2. Add System User**

**UC3.** **Manage** System **user**

**UC4.** **Add Faculty Information**

**UC5.** **Add Department Information**

**UC6. Add Building Information**

**UC7.** **Add Room Information**

**UC8.** **Add Instructor Information**

**UC9.** **Add Student (year and section) Information**

**UC10.** **Add course information**

**UC11.** **Delete course information**

**UC12. Add Class Schedule**

**UC13.** **Edit Schedule**

**UC14**. **Delete Schedule**

**UC15. Search Schedule**

**UC16. View Schedule**

***SYSTEM USE CASE DIAGRAM***

**BULE HORA UNIVERSITY CLASS ROOM SCEDULING SYSTEM**

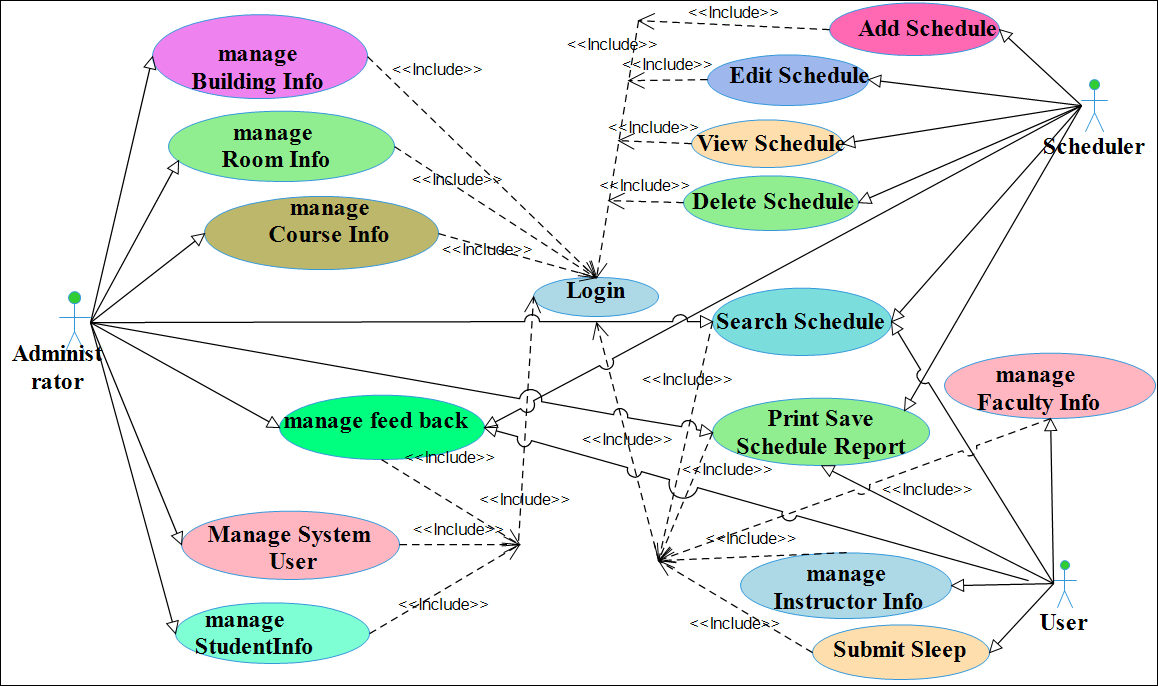


Figure 5 Use Case Diagram of classroom scheduling system

**(C) System Use Case Documentation (Process Description)**

**UC1. Login**

|  |  |
| --- | --- |
| **Use Case Name** | **Login** |
| **Use Case ID** | UC1 |
| **Brief description** | User who have privilege to access the system’s functionalities should be able to login each time he/she wants to use the system |
| **Actor** | **Administrator, Scheduler and User (Department Heads) not all System user** |
| **Pre-condition** | The user must to be registered to user Account. |
| **Post Condition** | If the user is authenticated the User logged into the system and the system displays all features available for the role associated to the user. |
| **Basic Course Of Action (BCA)** | |
| This use case starts when the User accesses the login in feature of the system by selecting his privilege.  The system displays a login form  The user enters his/her user and password  The user clicks login button  The system validates the entered information.  The system takes the user to his/her interface.  The use case ends. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 User forgot password | 1. system display invalid password  2. The system asks the e-mail name.  3. System displays his password if his answer is correct.  4. use case continues with BCA 2 |
| 4.2User fills invalid username and/or password | 1. The system Displays error message.  2. The system prompts the user to reenter the valid information. |

Table 4 Use case documentation for login

**UC2. Add System User**

|  |  |
| --- | --- |
| **Use Case Name** | **Add System User** |
| **Use Case ID** | UC2 |
| **Brief description** | This use case allows for register new system user. |
| **Actor** | **Administrator** |
| **Pre-condition** | Administrator already login into the system and load the Add user form |
| **Post Condition** | User of the system success fully added |
| **Basic Course Of Action (BCA)** | |
| This use case starts when the Administrator accesses the system feature that enables him/her to create an account by entering information that is saved in the User’s account.  The system displays user Account Form.  Administrator enters the required user account information on the form.  The system verifies values entered are valid. Al  System saves the new account in the database after Administrator Click the save button.  The system notifies success message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 3.1 User inserts Invalid User Account Information | The system prompts invalid user account  system prompts user to reenter valid account  use case continues with BCA 2 |
| 3.2 user inserts existed account | 1. system prompts error message  2. System display message that the account is already exist.  3. use case ends |

Table 5 use case documentation for create account

**UC3. Manage System user**

|  |  |
| --- | --- |
| **Use Case Name** | **Manage system user** |
| **Use Case ID** | UC3 |
| **Brief description** | This use case allows Editing, Updating, or Deleting each system users by using user\_id. |
| **Actor** | Administrator |
| **Pre-condition** | Administrator already login into the system and load the user Account page |
| **Post Condition** | User profile changed in the data base. |
| **Basic Course Of Action (BCA)** | |
| This use case starts when the user access the system feature that enable Edit system user  1. Administrator is able to edit, update and delete information for each user in the system by clicking on  The edit/Save or Delete Buttons on the form for each system users.  2. If he press Edit button the system Display change profile form  2.1 The administrator changes the users profile  2.2 The administrator clicks on save  2.3 The system Update the information changed to the user profile or  3. If the Admin Press Delete Button  3.1 The system will prompt that he is really wanted to delete the account?  3.1 The system will Delete the user account from the system.  4. The system shows success acknowledgment  5. The use case is end when Administrator clicks the OK button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 2.1 User inserts Invalid Account Information when editing | The system prompts invalid user account  System prompts user to reenter valid account information. |

Table 6 use case documentation for Manage system user

**UC4. Add Facility Information**

|  |  |
| --- | --- |
| **Use Case Name** | **Add College Information** |
| **Use Case ID** | UC4 |
| **Brief description** | This use case represents the procedure which the Administrator goes before using the system resource. It typically accomplished by typing information of faculty and program on the form and sends to the data base. |
| **Actor** | Administrator |
| **Pre-condition** | Administrator already login into the system and load the Add faculty form |
| **Post Condition** | Faculty information added to the database |
| **Basic Course Of Action (BCA)** | |
| The use case starts before scheduling is done.  The Administrator has to enter the Faculty information.  When the Administrator click on the save button.  The system then validates the entry.  If it is correct save the file to the database. Al  The system shows success acknowledgement message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 Entered Faculty already exists | 1. system prompts error message  2. System display Faculty information already exists.  3. Use case ends. |
| 4.2 Required information is missing | 1. system prompts error message  2. System display Required Faculty information is missing.  3. Use case continues with BCA 2. |

Table 7 Use case documentation for Add Faculty Information

**UC5. Add Department Information**

|  |  |
| --- | --- |
| **Use Case Name** | **Add Department Information** |
| **Use Case ID** | UC5 |
| **Brief description** | This use case represents the procedure which the Administrator goes to add information to the system. It typically accomplished by typing information of Department information to the form and sends to the data base. |
| **Actor** | Administrator |
| **Pre-condition** | Administrator already login into the system and load the Add Department form |
| **Post Condition** | Department information added to the database |
| **Basic Course Of Action (BCA)** | |
| The use case starts before scheduling is done.  The Administrator has to enter the Department information.  When the Administrator click on the save button.  The system then validates the entry.  If it is correct save the file to the database. Al  The system shows success acknowledgement message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 Entered Department already exists | 1. system prompts error message  2. System display Department information already exists.  3. Use case ends. |
| 4.2 Required information is missing | 1. system prompts error message  2. System display Required Department information is missing.  3. Use case continues with BCA2. |

Table 8 Use case documentation for Add Department Information

**UC6. Add Building Information**

|  |  |
| --- | --- |
| **Use Case Name** | **Add Building Information** |
| **Use Case ID** | UC6 |
| **Brief description** | This use case represents the procedure which the Administrator goes to add information to the system It typically accomplished by typing information of building on the form and sends to the data base. |
| **Actor** | Administrator |
| **Pre-condition** | Administrator already login into the system and load the Add Building form |
| **Post Condition** | The information is Added to the database. |
| **Basic Course Of Action (BCA)** | |
| The use case starts before scheduling is done.  The Administrator enter the building information.  When the Administrator click on the save button  The system validates the entry. Al  The system shows success acknowledgement message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 Entered Building information already exists | The system Display the already exist message  The use case end |
| 4.2 Required information is missing | The system Display the required information is missing  The use case continue with use BCA2 |

Table 9 Use case documentation for Add Building Information

**UC7. Add Room Information**

|  |  |
| --- | --- |
| **Use Case Name** | **Add Room Information** |
| **Use Case ID** | UC7 |
| **Brief description** | This Use case represents also which the Administrator accomplishes by typing information of building in Use case adds room information send to the database. |
| **Actor** | Administrator |
| **Pre-condition** | Administrator already login into the system and load the Add Room form |
| **Post Condition** | Entered Room information is saving. |
| **Basic Course Of Action (BCA)** | |
| The use case starts before scheduling is done.  The Administrator has to enter the Room information.  When the Administrator click on the save button.  The system validates the entry. Al  The system will save the information to the database.  The system shows success acknowledgement message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 Entered Room information already exists | 1.The system Display the already exist message  2. The use case end |
| 4.2 Required information is missing | The system Display the required information is missing  The use case continue with use BCA 2 |

Table 10 Use case documentation for Add Room Information

**UC8. Add Instructor Information**

|  |  |
| --- | --- |
| **Use Case Name** | **Add Instructor Information** |
| **Use Case ID** | UC8 |
| **Brief description** | This Use case represents also which the Administrator accomplishes by entering instructor information to the database |
| **Actor** | Administrator |
| **Pre-condition** | Administrator already login into the system and load the Add Instructor form |
| **Post Condition** | Instructor Information Saved |
| **Basic Course Of Action (BCA)** | |
| The use case starts before scheduling is done.  The Administrator has to enter the Room information.  When the Administrator click on the save button.  The system validates the entry. Al  The system will save the information to the database.  The system shows success acknowledgement message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 Entered Instructor information already exists | 1.The system Display the already exist message  2. The use case end |
| 4.2 User inserts Invalid instructor information | The system Display the required information is missing  The use case continue with use BCA 2 |

Table 11 Use case documentation for Add Instructor Information

**UC9. Add Student (year and section) Information**

|  |  |
| --- | --- |
| **Use Case Name** | **Add Student (year and section Information** |
| **Use Case ID** | UC9 |
| **Brief description** | This Use case represents also which the Administrator accomplishes by entering information to the database |
| **Actor** | **Administrator** |
| **Pre-condition** | Administrator already login into the system and load the Add year and section form |
| **Post Condition** | year and section Information Saved |
| **Basic Course Of Action (BCA)** | |
| The use case starts before scheduling is done.  The Administrator has to enter the year and section information.  When the Administrator click on the save button.  The system validates the entry. Al  The system will save the information to the database.  The system shows success acknowledgement message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 Entered year and section information already exists | 1.The system Display the already exist message  2. The use case end |
| 4.2 User inserts Invalid year and section information | The system Display the required information is missing  The use case continue with use BCA 2 |

Table 12 Use case documentation for Add Student (year and section) Information

**UC10. Add Course information**

|  |  |
| --- | --- |
| **Use Case Name** | **Add Course Information** |
| **Use Case ID** | UC10 |
| **Brief description** | This Use case represents also which the Administrator accomplishes by entering instructor information to the database |
| **Actor** | Administrator/ User(Department Heads) |
| **Pre-condition** | Administrator/ User already login into the system and load the Add Course form |
| **Post Condition** | Course Information Saved |
| **Basic Course Of Action (BCA)** | |
|  | |
| The use case starts before scheduling is done.  The Administrator has to enter the Course information.  When the Administrator click on the save button.  The system validates the entry. Al  The system will save the information to the database.  The system shows success acknowledgement message.  The use case is end when Administrator/ User click the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1Entered Course information already exists | 1. The system Display the already exist message  2. The use case end |
| 4.2 User inserts Invalid Course information | The system Display the required information is missing  The use case continue with use BCA 2 |

Table 13 Use case documentation for Add Course information

**UC11. Delete course information**

|  |  |
| --- | --- |
| **Use Case Name** | **Delete Course Information** |
| **Use Case ID** | UC11 |
| **Brief description** | This Use case represents also which the Administrator accomplishes by entering instructor information to the database |
| **Actor** | Administrator |
| **Pre-condition** | Administrator already login into the system and load the Course form |
| **Post Condition** | Course Information Saved |
| **Basic Course Of Action (BCA)** | |
| The use case starts when the Administrators select the particular Course ID that needs to be deleted  The Administrator click on Delete button.  The system will prompt that he really wants to delete the course.  When the Administrator select Yes Button, Al  The system will delete the course information entry from the database..  The system shows success acknowledgment message.  The use case is end when Administrator clicks the OK button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 When the Administrator select No Button, | 1.The system Return back to the course page  2. The use case end |

Table 14 Use case documentation for Delete course information

**UC12. Add Class Schedule**

|  |  |
| --- | --- |
| **Use Case Name** | **Add Class Schedule** |
| **Use Case ID** | UC12 |
| **Brief description** | This use case allows the scheduler to setup scheduling time for each year and section by assigning room, instructor, course, education day and time and to prepare Schedule based on the request of Programs. |
| **Actor** | Scheduler |
| **Pre-condition** | The Scheduler already login into the system and the system has load the Add Class schedule form.  All required information must be entered. |
| **Post Condition** | The Class schedule data is saved to the database |
| **Basic Course Of Action (BCA)** | |
| The use case starts when the scheduler load class schedule page.  The system prompts the scheduler to select departments that he or she wishes to Add Class schedules.  The system display Add schedule form.  The Scheduler fill all the required information by selecting and by writing.  When the scheduler click on the save button.  The system validates the entry. *Al*  The system will Save the Class Schedule to the database  The system shows success acknowledgement message. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 5.1 If year and sections have a class on that time | 1. The system Display a message This year and section student have schedule on this day and time  2. The use case continue with use BCA 3 |
| 5.2 If Instructor have class on that time for other year and section student | 1.search respectively |
| 5.3 room | 1. Room filled displayed including semester and academic year. |

Table 15 Use case documentation to Add Class Schedule

**UC13. Edit Schedule**

|  |  |
| --- | --- |
| **Use Case Name** | **Edit Schedule** |
| **Use Case ID** | UC13 |
| **Brief description** | The Scheduler wants to edit or modify the Schedule for any year and section |
| **Actor** | Scheduler |
| **Pre-condition** | 1.The Scheduler have to logged inland  2. The Schedule for the Class and Year students must exist. |
| **Post Condition** | Save the changes on the schedule to the database. |
| **Basic Course Of Action (BCA)** | |
| The use case starts when the scheduler Click Edit Button on Class schedule page for the selected schedule by using Schedule ID  The system displays Edit Schedule Form that have all information about the previous schedule and prompts the Scheduler to edit the Schedule details  The Scheduler makes the modifications and clicks on Save.  The system validates the entry. *Al*  The system will Save the Class Schedule to the database  The system shows success acknowledgement message.  The use case is end when Scheduler clicks the ok button | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 4.1 If year and sections have a class on that time | 1. The system Display a message This year and section student have schedule on this day and time  2. The use case continue with use BCA 3 |
| 4.2 If Instructor have class on that time for other year and section student | 1. The system Display a message This Instructor have schedule on this day and time for this Year and section students.  2. The use case continue with use BCA 3 |
| 4.3 If the Room already reserved by other year and section student | 1. The system Display a message This Room is Reserved by Instructor name for the year and section student with the course  2. The use case continue with use BCA 3 |
| 4.4 User inserts Invalid Schedule information | 1. The system Display the required information is missing  2. The use case continue with use BCA 3 |

Table 16 Use case documentation to Add Class Schedule

**UC14. Delete Schedule**

|  |  |
| --- | --- |
| **Use Case Name** | **Delete Schedule** |
| **Use Case ID** | UC14 |
| **Brief description** | The Scheduler may decide to delete Schedule if it no more necessary, clears unnecessary Schedule. |
| **Actor** | Scheduler |
| **Pre-condition** | 1. The scheduler is logged in  2. The Schedule exists. |
| **Post Condition** | Delete the schedule from the data base |
| **Basic Course Of Action (BCA)** | |
| The Use case Begin when the Scheduler Click DELETE button on class schedule page for the selected schedule by using scheduling Id  The system will Prompt the scheduler that he Really want to Delete the Selected schedule  When the Scheduler select Yes Button, Al  The system Delete the class Schedule information entry from the database.  The system shows success acknowledgement message.  The use case is end when Administrator clicks the ok button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 3.1 When the Scheduler select No Button, | 1.The system Return back to the Schedule page  2. The use case end |

Table 17Use case documentation to Delete Class Schedule

**UC15. Search Schedule**

|  |  |
| --- | --- |
| **Use Case Name** | **Search Schedule** |
| **Use Case ID** | **UC15** |
| **Brief description** | The user should be able to search and filter the schedule information detail using different criteria. |
| **Actor** | All system User |
| **Pre-condition** | The user is logged in to the system or not |
| **Post Condition** | Properties and schedule matching the criteria are displayed in a report view. |
| **Basic Course Of Action (BCA)** | |
| The Use case Begin when the users click on search class schedule link  The user select search schedule for Year and section  The system displays a search Form to select Year and section, semester and academic year.  When the user click on the Submit button  The system filters the data from the database according to the search criteria's.  The system displays a Search result as Report.  The user select Print Schedule Button  The system prompt the user to select his printer form list  The system Print the Report  The use case is end when the user clicks on Back Button. | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 2.1: User Select Instructor schedule search | The user select search schedule for Instructor  The system displays a search Form to select Instructor Name, Semester and Academic year. |

Table 18 Use case documentation to Search Schedule

**UC16. View All Schedule**

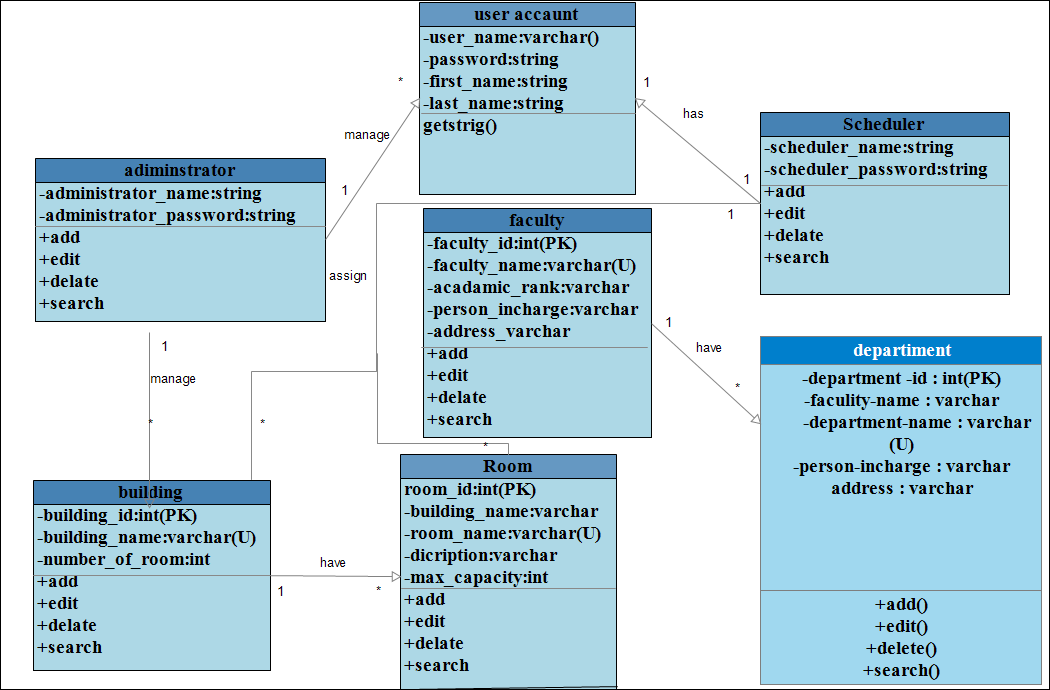
|  |  |
| --- | --- |
| **Use Case Name** | **View Schedule Report** |
| **Use Case ID** | UC23 |
| **Brief description** | To view the status of class room, instructor and year and section |
| **Actor** | Scheduler |
| **Pre-condition** | Scheduler have to login into the system  System has load the schedule form for each Department |
| **Post Condition** | Report is viewed to the user |
| **Basic Course Of Action (BCA)** | |
| The use case starts when the scheduler load class schedule page.  The system prompts the scheduler to select departments that he or she wishes to view schedules.  The system display List of schedules for that selected department for all year and sections. Al  The system Display academic year, semester, department, year and section, day, course, time start, time end, instructor name, room and actions  The Scheduler can sort the schedule in Ascending or Descending order.  The Scheduler can Determine items to preview per page  The System provide capability to Navigate from one page to another by clicking on 1,2,3,...pages or By Click on Next , Last, First or Privy Buttons or to Determine  The use case is end when Scheduler Click All Button (Back to All Department List) | |
| **Alternate Flows** | |
| **Title** | **Description** |
| 3.1 When the scheduler wants to search specifically | 1. The Scheduler can search:  By Instructor Name, By Year And Section, By Room Name  By Academic year, By Semester  By Department  By Day  BY Course |

Table 19 Use case documentation to view schedule

**Class Diagram**

Class Diagram is used to describe the structure of a system by showing the system’s classes, their attributes and the relationship between the classes. In addition to that it shows the static relationship between the classes.

Classes that identified form scheduling system are specified by adding the possible methods an attributes for each classes. The Class during this phase is detailed to help the developer to start developing the source code.

Figure 5 class diagram

**Sequence Diagram**

Sequence diagrams are used to model the logic of usage scenarios or the description of the potential way the system used. Sequence diagrams are a great way to validate and flesh out the logic of use case scenarios and to document the design of the system.

Bule Hora University Online Classroom Scheduling System has the following sequence diagrams.

**Sequence Diagram for Login**

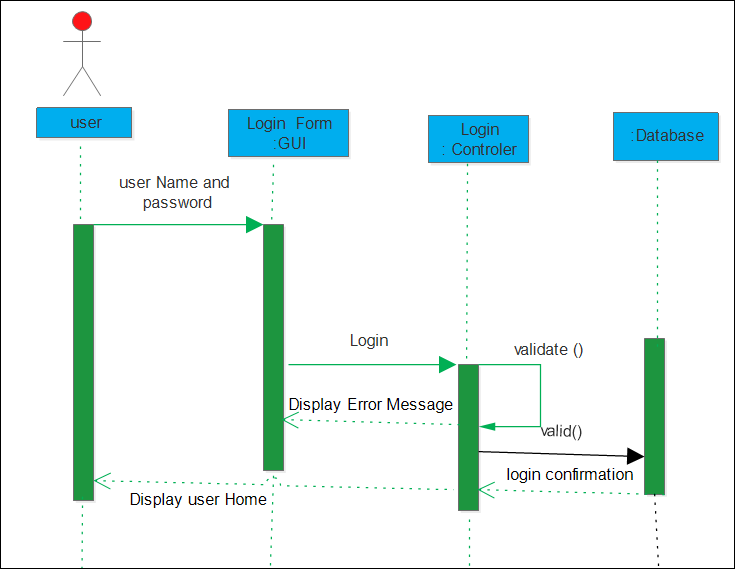


Figure 6 Sequence Diagram for Login

**Sequence Diagram for Adding Information**

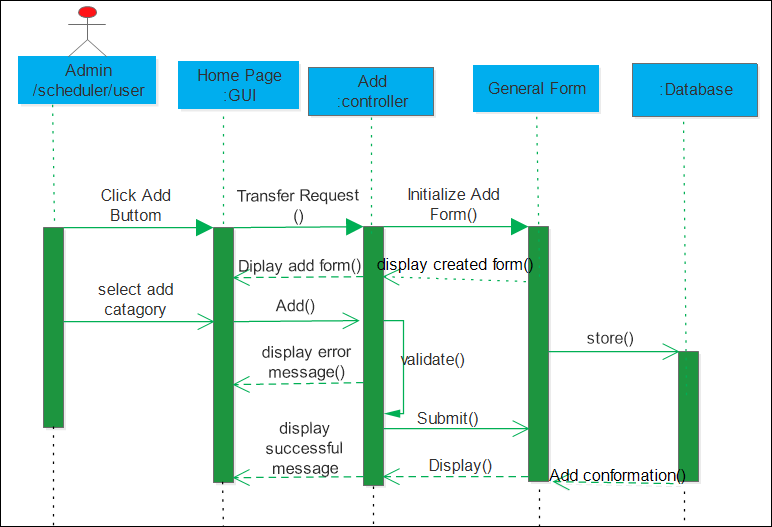


Figure 7 . Sequence Diagram for Adding Information

**Sequence Diagram for Update Information**

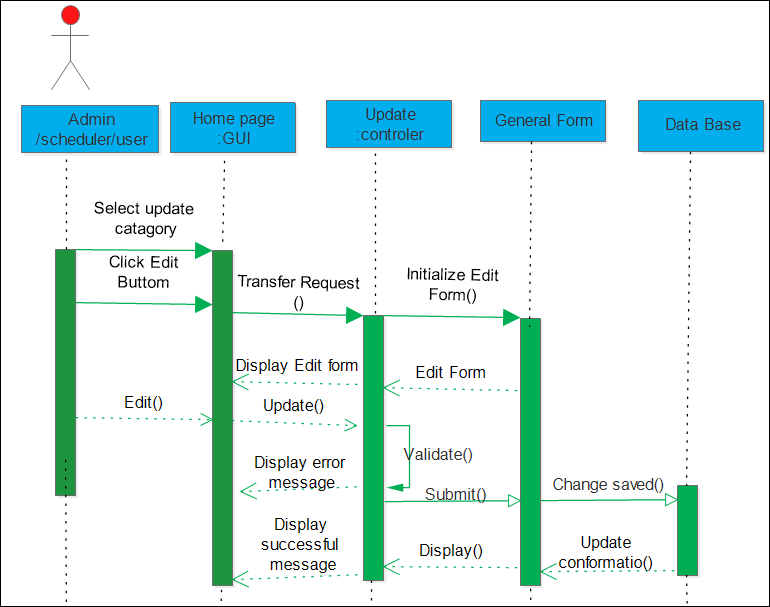


Figure 8 Sequence Diagram for Update Information

**Sequence Diagram for Delete Information**

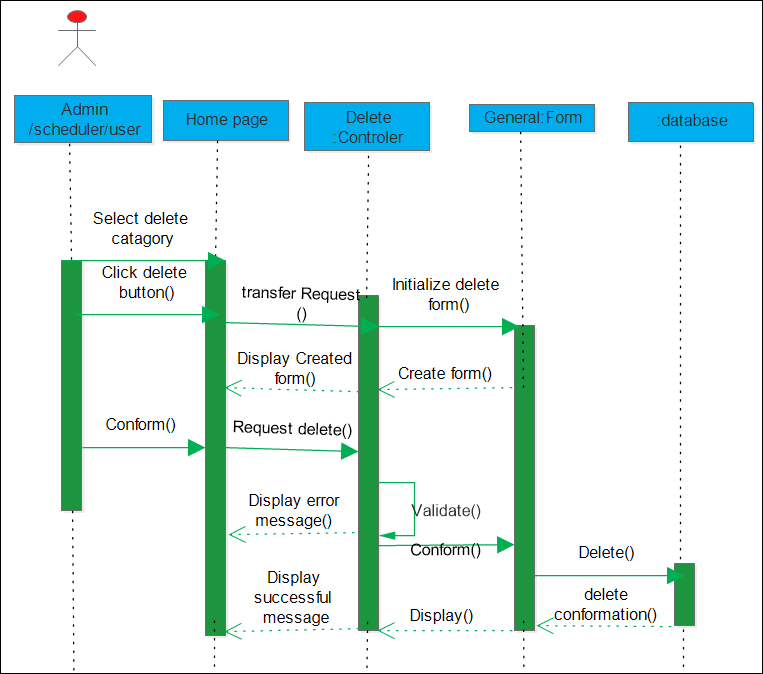


Figure 9 Sequence Diagram for Delete Information

**Sequence Diagram to Add User Account**

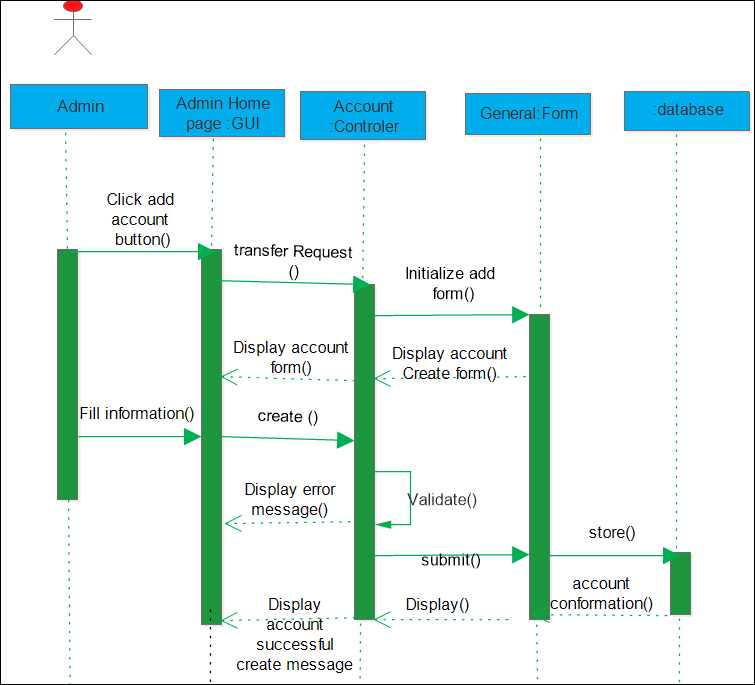


Figure 10 Sequence Diagram for Adding Account

**Sequence Diagram for Search Schedule**

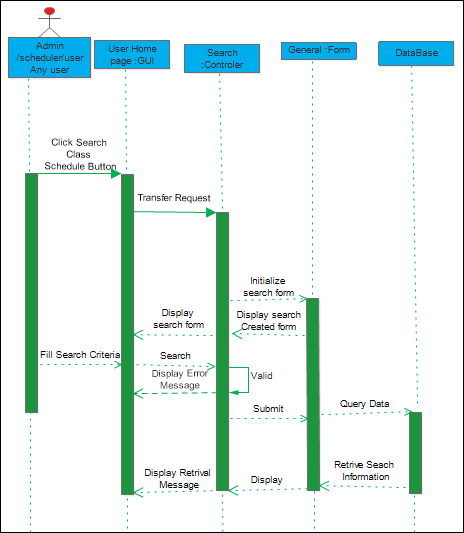
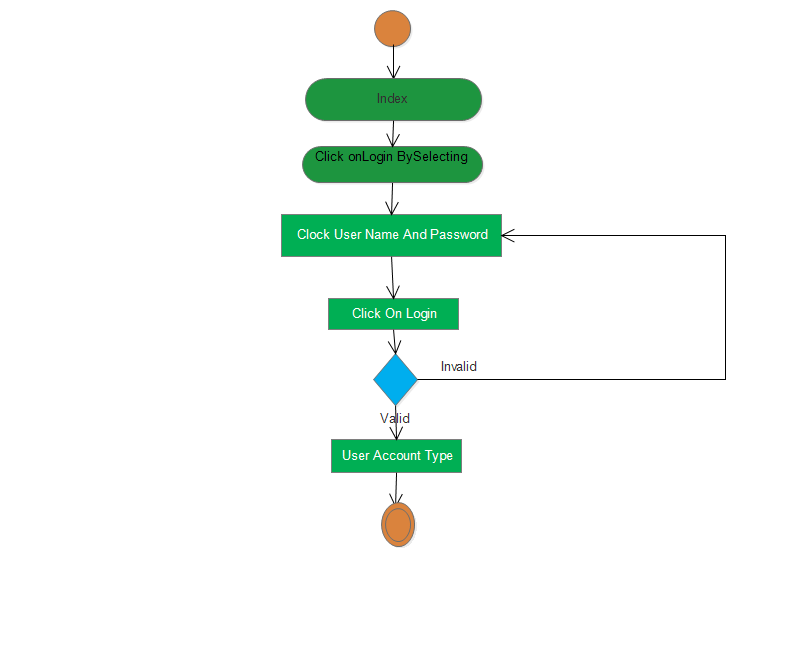


Figure 11 Sequence Diagram for Search Schedule

**Activity Diagram**

Activity diagram is used to document the logic of a single operation/method, a single use case or the flow of logic of a business process. It is equivalent to flowchart and data flow diagram from s structured development.

**Activity Diagram for login**



**Invalid**

validvalid

Figure 12 Activity Diagram for login

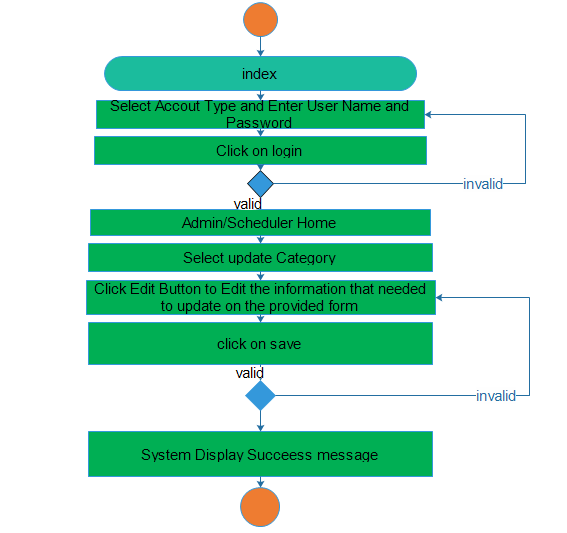
**Activity Diagram for Updating Information**

Figure 13 Activity Diagram for Updating Information

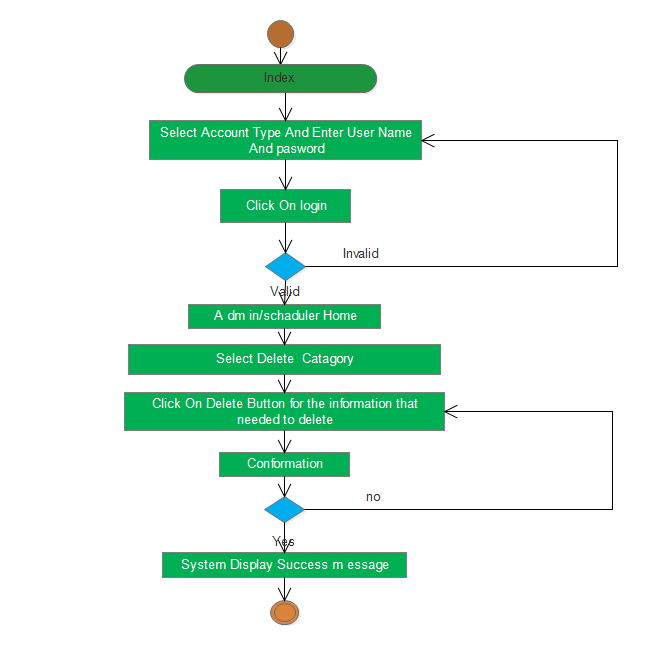
**Activity Diagram for Deleting Information**

Figure 14 Activity Diagram for Deleting Information

**Activity Diagram for Adding User Account**

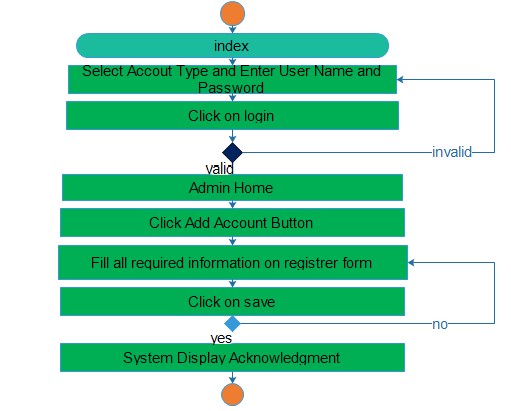
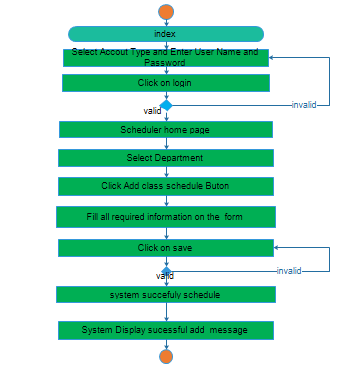


Figure 15 Activity Diagram for Adding User Account

**Activity Diagram for Adding Class Schedule**

 Figure 16 Activity Diagram for Adding Class Schedule

**Activity Diagram for Searching Schedule**

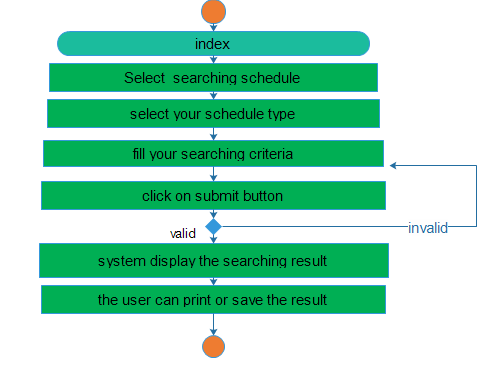


Figure 17 Activity Diagram for Searching Schedule

**Collaborative Diagram**

Collaboration diagram is the Unified Modeling Language diagram that describes the interactions among objects in terms of sequenced messages. Collaboration diagrams represent a combination of information taken from class, sequence, and use case diagrams describing both the static structure and dynamic behavior of a system.

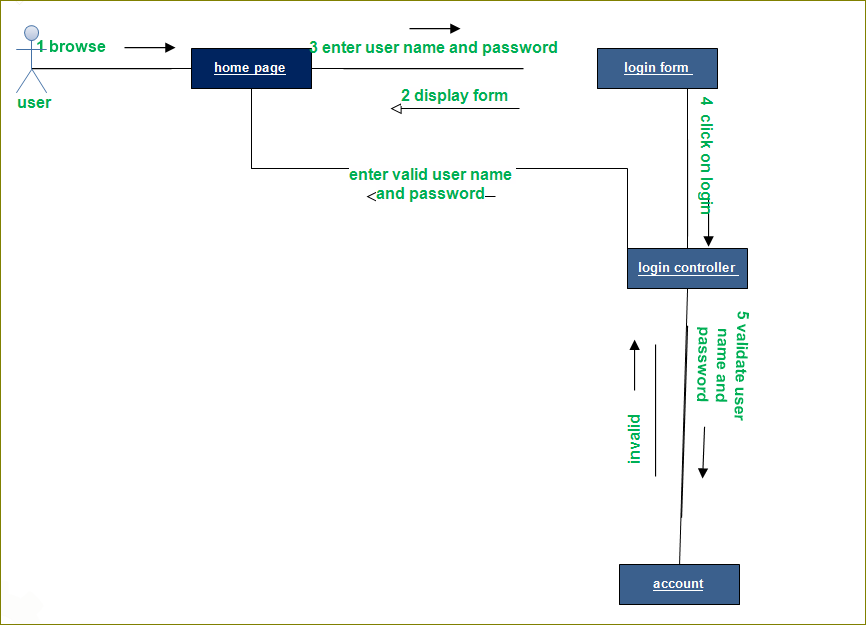
**Collaborative diagram of login**

Figure 18 collaborative diagram of login

**B) Collaborative diagram of create account**

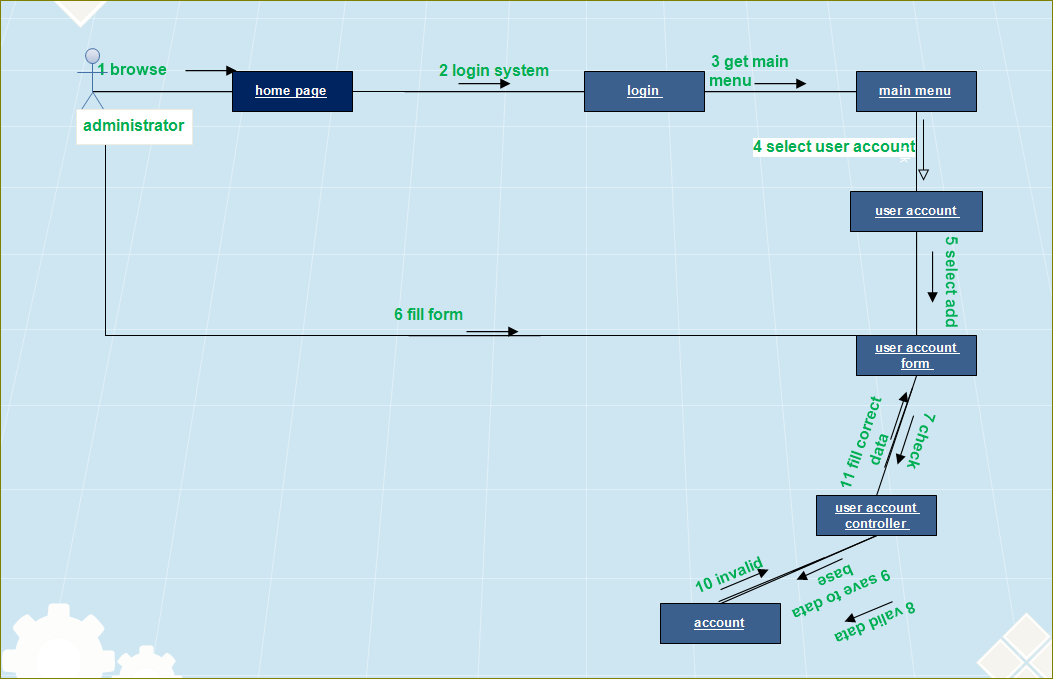


Figure 19 Collaborative diagram of create account

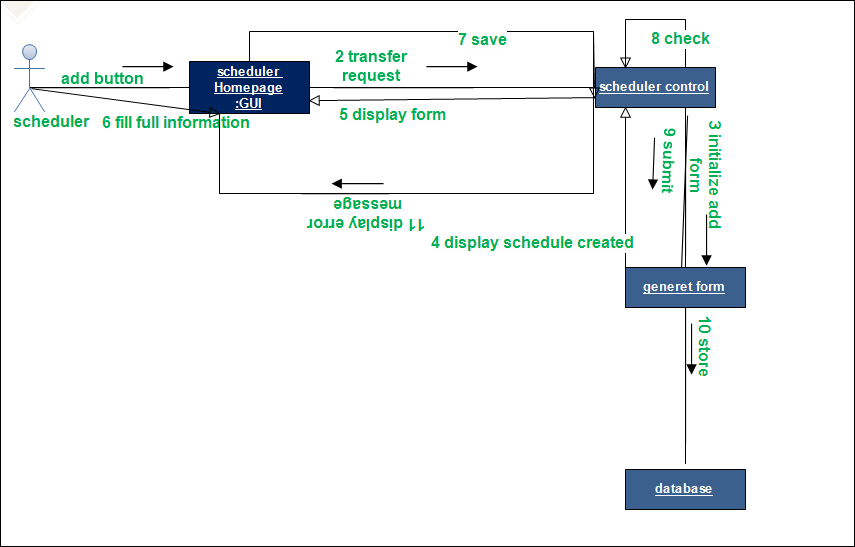
**C) Collaborative diagram of class schedule**

Figure 20 Collaborative diagram of class schedule

**State Chart Modeling**

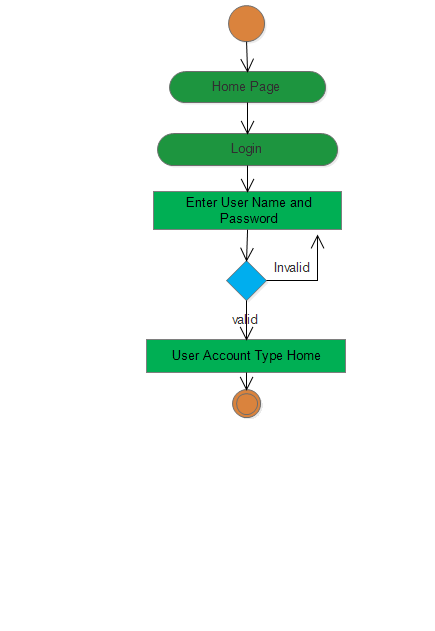
State chart diagram is used for modeling the dynamic aspects of systems if focuses on identifying the behavior within our system, behavior specified to the instances of a single class. It is similar to activity diagram. Both activity and state chart diagrams are useful in modeling the lifetime of an object. However, activity diagram shows flow of control from activity to activity; whereas state chart diagram shows flow of control from state to state.

Figure 21 State Chart Modeling for login

**Component diagram**

A component diagram displays the structural relationship of components of a software system. These are mostly used when working with complex systems that have many components. Components communicate with each other using interfaces. The interfaces are linked using connectors.

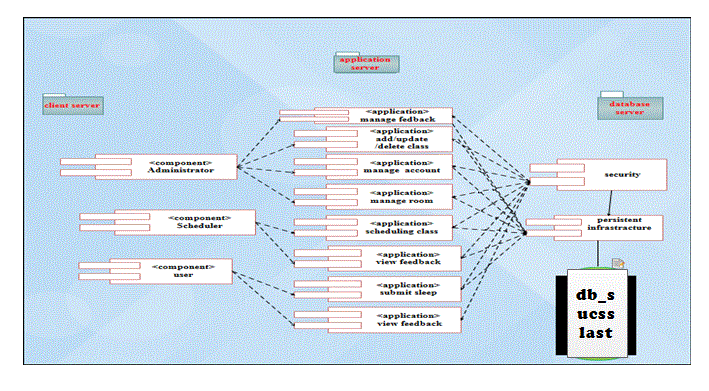


Figure 22 component diagram.

###### **3.2.1.2.1.3 Architecture**

**Current Software Architecture**

Bule Hora university uses manually classroom scheduling from the establishment of the Organization till know. All this classroom scheduling is done by the scheduler. The scheduler perform this schedules and assign for classroom, courses, instructors, and all time scheduling are done in Microsoft access it uses this application in order to use the table, then after printing all the document he/she distributed for each department, and stored in a documented catalog form in order to keep all these scheduling document files.

**Proposed Software Architecture**

The proposed system is expected to replace the existing manual system by an automated system. It is mainly based on the system Analysis document of our previous chapter.

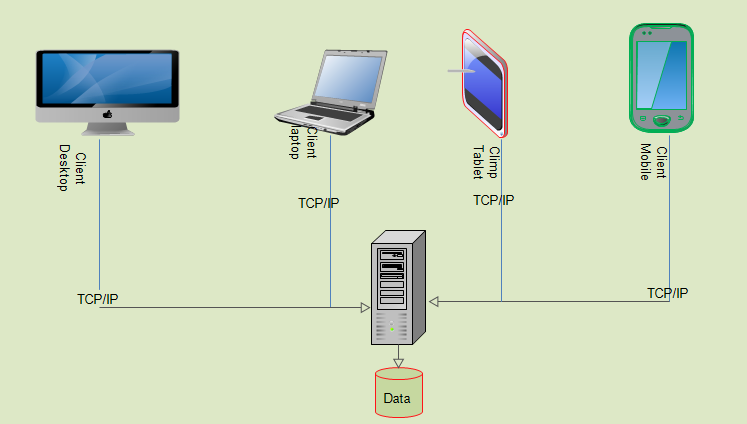
The system is a web based application. The website will be hosted on a web server, where users are able to access it from a PC or laptop or mobile device using a browser. This allows for the system to be accessible from different operating system and devices but it will also easily manageable. It will also decrease the schedulers effort when scheduling a class for the whole year and section by allowing the schedule to select some options and fill the other information, and then the system add the schedule when the scheduler press save button.

Figure 23 architecture system

## **3.3 system testing and implementation**

### **3.3.1 System testing**

Testing is the process of running a system with the intention of finding errors. Testing enhances the integrity of a system by detecting deviations in design and errors in the system. Testing aims at detecting error-prone areas. This helps in the prevention of errors in a system. Testing also adds value to the product by conforming to the user requirements.

In this phase the entire software system is tested. The reference document for this process is the requirements document, and the goal is to see whether the software meets the requirements.

**Steps in system testing**

**Function testing**: checking that the integrated system performs its functions as specified in the requirements. This step is run by the developers.

**Performance testing:** comparing the integrated components with the non-functional system requirements. The requirements include security, accuracy, speed and reliability. This step is run by the developers.

**Acceptance testing**: assuring that the system requested by customers is the system that was built for the customers.

**Installation testing:** allowing user to exercise system functions and to document additional problems that result from being at the actual environment.

### **3.3.1.1** **Unit testing**

In computer programming, Unit testing is a procedure used to validate that individual units of source code are working properly. So In this test the team try to test each module individually but not integrate the whole system. It focuses verification efforts even in the smallest unit of software design in each module. This is also known as ―Module Testing.

The testing is carried out in the programming style itself. In this testing each ,module is focused to work satisfactorily as regard to the expected output from the module .There are some validation checks for the fields.

**Errors and their detection**

When you fail to fill a value on the filled that should have a value the system will display the following message "Pleas fill out this filed" by pointing the empty field, tests using event driven control mechanism.

When we enter a numeric instead of character value, the system will do the following "the information must be character strings" I. ‘On key press’ it checks whether the input is character or numeric.If an input is numeric and if it were needed to insert character the system will tell you that the input that you inserted is invalid input and vice versa for character.

### **3.3.1.2 Integrated testing**

Integration testing (sometimes called, Integration and testing, abbreviated I&T) is the phase of software testing in which individual software modules are combined and tested as a group. So the team in this testing part combined all the modules together and tested it for its fitness with each other and with the systems functionality. If error occurs in combining them, the module with problem will be identified.

### **3.3.1.3 System validation**

**Password checking:**

When unauthorized users are try to access to the system displays an alert message “please check user name, password and select our account type and try again”.

**Null input:**

Allows the system to accept the needed data rather than null. Else display an error message box.

### **3.3.2 System Implementation**

Implementation in the system includes implementing the attributes and methods of each object and integrating all the objects in the system, to function as a single system. The implementation activity spans the gap between the detailed object design model and a complete set of source code files that can be compiled together.

Objective of the implementation

The objective of systems implementation phase is to convert the final physical system specifications into working and reliable system, document the work that has been done, and provide help for current and future users and caretakers of the system

## **3.4 Documentation**

System administrators will receive project prepared documentation about the database schema and documentation on the code of the system. This will help the system administrators on the occurrence of problems to understand its structure and to facilitate maintenance of the system easily.

### **3.4.1 User guide/help**

Frequently Asked Questions are included in the system and as help or tips hover action (when the mouse placed on some buttons or links it have to show what the user can do with that) is should be available for the end-users.

### **3.4.2 Technical**

To implement a system successfully, a large number of inter-related tasks need to be carried out in an appropriate sequence. Utilizing a well-proven implementation methodology and enlisting professional advice can help but often it is the number of tasks, poor planning and inadequate resourcing that causes problems with an implementation project, rather than any of the tasks being particularly difficult. Similarly with the cultural issues it is often the lack of adequate consultation and two-way communication that inhibits achievement of the desired results.

### **3.4.3 Hybrid**

A hybridsystem is a [dynamic system](https://en.wikipedia.org/wiki/Dynamic_system) that exhibits both continuous and discrete dynamic behavior – a system that can both flow (described by a [differential equation](https://en.wikipedia.org/wiki/Differential_equation)) and jump (described by a [state machine](https://en.wikipedia.org/wiki/Finite-state_machine) or [automaton](https://en.wikipedia.org/wiki/Automata_theory)). A hybrid system has the benefit of encompassing a larger class of systems within its structure, allowing for more flexibility in modeling dynamic phenomena.

Two basic hybrid system modeling approaches can be classified, an implicit and an explicit one. The explicit approach is often represented by a [hybrid automaton](https://en.wikipedia.org/wiki/Hybrid_automaton).

## **3.5 evaluation**

Assessing of the project is done by system experts. The experts evaluated us with the relevant guidelines after the development process. Several presentations is scheduled to assess the progress or the development of the project.

Project evaluation refers to the systematic collection, analysis and use of information to answer questions about a project. It involves the analysis of costs, outcome or impact, implementation as well as the need for the project. During evaluation we must check the results and evaluate the project under test and the completion criteria, which help us to decide whether the system product has passed the tests.

Based on this concept this system has been evaluated by professionals of information science department as well as other professionals who are required to evaluate our project work.

For better evaluation mechanism we have had the following standards in which the evaluator has to consider while evaluating the system:

User interface design of the system, Accessibility, Easiness, Layout, Functionality and Validation.

# **SECTION FOUR**

# **4 RESULT AND DISSEMINATION**

## **4.1 Result and Dissemination**

### **4.1.1 Result**

The expected output of system planned to provide fast and easy data access, maintenance and support method for the user and it will be build web based program for the property of Bule Hora university office of registrar in order to faculty there work and it will be computerized, it will automate the whole procedure, it will be reduce work over load.

### **4.1.2 Dissemination**

**Website:**- After the project is completed the project group is planned to present the project and describing its result through website, by using web to support and enhance interaction between instructor and student .the instructor can take advantage of the web to provide read time instruction via chat room or web discussion boards.

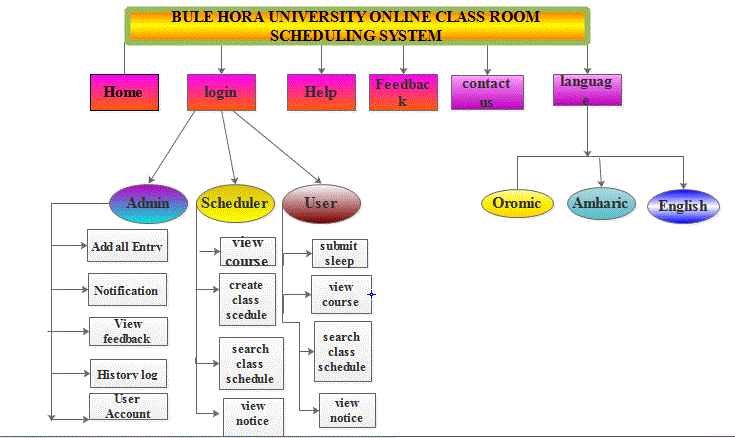
#### **4.1.2.1 Dissemination methods**

**E-mail:-**we have planned to introduce our project through E-mail lists are useful for discussing new developments, problems, and issues. The vast majority of people involved in using at least one mail base discussion list and these can be a very effective way of communicating with our user.

**Websites: -**we are decided to advertise our project

Through internet. A project website is one of the most versatile dissemination tools and explain the project aims and objectives and to disseminate information about web based teacher evaluation system activities and results.

## **4.2 main project layout and its description**

****

*Figure 24 main project layout*

**Page layout descriptions**

**Home**: - home start page with including slide show other entertainment pages.

**Login:-**it is used for login page for the administration, scheduler and user (department head).

**Help/ faq: -** : under this some supportive information is kept if the user not understands while using the system and how select login page or categories among another.

**Feedback**. Contain writing form of comment for administration.

**Contact us**: - contain information help the users of the system to use easily

**Language: -** contain three login page admin (add all entry, it gives notification, view feedback, history log, user account, backup data base, logout), scheduler (view course, create class schedule, search class schedule, view notice, logout), user/dep’t head (submit sleep, view course, search class schedule, view notice).

# **CHAPTER FIVE**

# **5. CONCLUSION AND RECOMANDATION**

## **5.1. Conclusion**

The objective of this project was to build a web based program for property Bule Hora university office of registrar in order to faculty their work and make computerize. The system developed is able to meet all the basic requirements. It will provide the facility to the end-user, the Bule Hora University office of registrar scheduling staff will be also benefited by the proposed system, as it will automate the whole procedure, which will reduce the workload. The security of the system is also one of the prime concerns finally the important thing is that the system should be flexible enough for future modifications and to maintain. Every effort has been made to cover all user requirements and make it user friendly.

## **5.2. Recommendation**

Nowadays, the world is highly becoming a competitive world. Organizations have to divert their attention on using the recent technology to be on the first line and competitive. This can be real if they are able to use computerized system to successfully achieve their objective. Bule Hora University is the Government institution that includes many offices in fulfilling its function. As we describe in this document, almost all activities of the organization is done on manual basis. The project team wants to recommend some ideas considering the project .This project is developed based on the current problems of scheduling staff of Bule Hora University registrar office so we think that this project is the best solution for the problems raised based on the manual system of the office. And help the office to save time, money and man power whenever the project is small scale.

From the various facts that constitute the project, the following points can be recommended:

Attention should be given to the existing practice in the design, development and utilization of the new system.

Serious consideration should be given for the introduction of the new system.

Behavioral change of the users of the system to adapt the new system.

There should be a network infrastructure in order to connect the different computers and access the system.

We advise that the site be hosted on a secure server and that the administration of the website is given to a person or entity that has experience in managing a website.

We also fell for ease of access an accompanying application is developed for the system for Smartphone implementing the Android and IOS operating systems.

Finally the project teams concluded that the department should give a special consideration for the computer lab, internet connection and last semester studying credit hours specially for graduating

Student, because during the development of the project the group members faced some problems.

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# **APPENDICES**

**Symbols used diagraming, drawing and modeling**

|  |  |
| --- | --- |
| **symbol** | **description** |
|  | Arrow used for direction. |
| **Entity/process** | Used for processing the function. |
| **Terminator** | It indicates the beginning or the end of a program flow in a diagram. |
|  | Relationship or decision point between two/more path in your diagram. |
|  | It used for attribute. |
|  | Yes/no decision indicator. |
| C:\Users\bush\Desktop\aaa.GIF | Actor used to take as admin,scheduler and user/department head. |

Table 20 symbol used in drawing

**Some interview and question**

When Bule Hora University was established?

How staff is manage its tasks, users, scheduler and admin?

What are existing system performance and its draw backs?

What major problems of existing system?

How you manage work over loads?

How users and scheduler satisfy your system?

# **SIMPLE CODE**

**III. Simple code**

**LOGIN SIMPLE CODE**

**<?php**

**if (isset($\_POST['Login']))**

**{**

**function clean($str) {**

**$str = @trim($str);**

**if (get\_magic\_quotes\_gpc())**

**{**

**$str = stripslashes($str);**

**}**

**return mysql\_real\_escape\_string($str);**

**}**

**$user\_name=clean($\_POST['user\_name']);**

**$password=clean($\_POST['password']);**

**$user\_type=clean($\_POST['user\_type']);**

**$login\_query=mysql\_query("select \* from users where user\_name='$user\_name' and password='$password' and user\_type='Admin'");**

**$login\_query1=mysql\_query("select \* from users where user\_name='$user\_name' and password='$password' and user\_type='User'");**

**$count=mysql\_num\_rows($login\_query); // this is 4 admin**

**$count1=mysql\_num\_rows($login\_query1); // this is 4 user**

**$row=mysql\_fetch\_array($login\_query);**

**$row1=mysql\_fetch\_array($login\_query1);**

**$f=$row['first\_name'];**

**$l=$row['last\_name'];**

**$user\_type=$row['user\_type'];**

**if ($count == 1)**

**{**

**$logout\_query=mysql\_query("select \* from users where user\_id='".$row['user\_id']."'");**

**$row=mysql\_fetch\_array($logout\_query);**

**$f=$row['first\_name'];**

**$l=$row['last\_name'];**

**$user\_type=$row['user\_type'];**

**mysql\_query("INSERT INTO history (data,action,date,user)VALUES('$f $l', 'Login', NOW(),'$user\_type')")or die(mysql\_error());**

**session\_start();**

**session\_regenerate\_id();**

**$\_SESSION['id']=$row['user\_id'];**

**header('location:home.php');**

**session\_write\_close();**

**exit();**

**}**

**else if ($count1 == 1)**

**{**

**session\_start();**

**$\_SESSION['id']=$row2['user\_id'];**

**$logout\_query=mysql\_query("select \* from users where user\_id='".$row['user\_id']."'");**

**$row=mysql\_fetch\_array($logout\_query);**

**$f=$row['first\_name'];**

**$l=$row['last\_name'];**

**$user\_type=$row['user\_type'];**

**mysql\_query("INSERT INTO history (data,action,date,user)VALUES('$f $l', 'Login', NOW(),'$user\_type')")or die(mysql\_error());**

**session\_start();**

**session\_regenerate\_id();**

**$\_SESSION['id']=$row['user\_id'];**

**header('location:user\_home.php');**

**session\_write\_close();**

**exit();**

**}**

**else**

**{**

**?>**

**<div class="alert alert-error">**

**<button class="close" data-dismiss="alert">×</button>**

**Please check your User Name,Password and select ur account type**

**and try again!!!**

**</div>**

**<?php }**

**}**

**?>**

**</div>**

**</div>**

**</br>**