# DORMITORY RESERVATION SYSTEM

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# INTRODUCTION

## Project Context

Education is considered as a first step for every human activity. It plays a vital role in the development of human capital and is linked with an individual well-being and opportunities for better living.

The Ilocos Sur Polytechnic State College (ISPSC) is one of the higher education institutions (HEI) in Region 1 which has a mission to provide quality and relevant education within its service area. At present there are almost two thousand students enrolled at Santa Maria campus. This number is expected to increase with the expected influx of new students who graduated from the K-12 program of the Department of Education (DepEd). Many of the students coming to ISPSC are from the different towns of the second district of Ilocos Sur, as well as from neighboring provinces such as Abra. Many students who live from far places prefer to stay in thedormitory to be their second home away from own home while studying in order to attain their goals in life.

ISPSC Santa Maria campus currently offers two dormitories to house students who hail from distant places. The first one is a newly constructed two-storey building which is intended for lady students. It has fourteen spacious rooms that can accommodate up to sixty

occupants. The other housing is a one-storey building that has ten rooms which can also accommodate up to sixty occupants. This current student housing currently houses male and female residents. However, with the new ladies dorm, this one will be solely for male residents.The existing ISPSC dormitory is manned by a Dormitory manager who is responsible for keeping managing the operations of the dorm, and keeping watch over the occupants.

The current process of applying for dorm residency at the ISPSC dorm involves students to visit the dorm, fill-up a paper-based application form which takes a long time to process. After applying, a student must check for the successful or unsuccessful list of accommodation application at the dorm. Furthermore, the dormitory manager does not have updated records of vacant rooms or occupied rooms. To know whether there are still some vacant rooms, the person in charge has to go to the building and check physically. Also the lack of updated information about the room availability and their types may cause some students to be allocated to the type of rooms they did not want.

Information technology (IT) can be used in dormitory management in order to automate and facilitate the transactions and operations. Through the use of a computerized system, applications can be made

faster and more efficient by eliminating the paper-based process as details can be captured from a database. Room availability can be checked instantly without physically checking rooms. Records of student residents can also be stored to allow the dorm manager instant access to information as the need arises.

Dormitory management is one of the major management activities which are performed to arrange and allocate dorms for students. In this process there are many problems associated with a manual paper-based operation. It is for this reason that the team initiated this project to identify and analyze those problems and to put possible solution through the use of a computerized information system for dormitory management.

**Purpose and Description**

The purpose of this study is focused on the importance of modern technology for the dormitory admission and online reservation usage and also it aims to bring life to education and put into its full play and maximize efficiency in student dormitory management.

Firstly, the system would aid the students or the customers in a sense that they will be able to easily get a room reservation even without

visiting the dormitory or having face to face transaction with the dormitory personnel.

Secondly, the system would both benefit the dormitory manager to have more accurate and immediate information about the dormitory rooms and their occupants.

The developed system would benefit the following:

Dorm Manager. The Dorm Master would be benefited from the system in such a way that the quality and performance of his/her work is improved, the time the dorm manager spent for manual operation is significantly reduced and the management and control of his/her job is improved.

Students. The student applicants would be able to look for rooms easily and can decide what room will they take or will they stay. Students are expected to be in campus to know about their dormitory information. That is, once the allocation report is generated by the system, the system provides an interface which enables the students to know about their dormitory information.

Researchers. The study served as guide to researchers to look into the development of the presented research into a more useful source of information that caters the needs of the students of ISPSC. This would

allow them also to widen their horizon to think a more substantial research based on the presented research work.

Future Researchers. Furthermore, this research work serves as the guide of the future researchers to come up with a more improved web applications that caters the research needs of their clientele. This serves as an opener to them to develop program that will ease the burden of the public most especially the students to locate and transact their academic needs in a learning institutions.

**Literature**

A survey of review of related literature and studies is very important because such reviewed literature and studies serve as a foundation of the proposed study.

According to Moffat (n.d.), dormitory is a place where students could meet various people and develop friendships and it could also develop self-independence. For some, living in a dorm is the typical college option. Dorm life means living on campus and not having to deal with the hassles of commuting and the need to cook for meals. On the other hand, living in a dorm means limited space. It also means dealing with a dorm roommate. Dorms also are not open all year long, so students have to find other accommodations on vacations. And dorm life

usually means eating fixed meals. Living in a dorm can also affect the study habits of a student.

Keleey (1997) said that there are also factors that the student must consider in choosing his or her study place. One factor is the time of day. A bad study environment can distract a person. If the student is uncomfortable with his or her environment, due to some causes like the temperature is too hot or too cold, it might disturb the student in doing his or her work. Not a single person could focus twenty-four hours a day. Each person has his or her own time of day that he or she is most productive. Some students work best on their homework or any school work immediately after school while some need time to rest before they do their works.

The students' dormitory is the main place to college students' daily life, so the students' dormitory management is an important part of school management. As the growth of the school recruitment of students scale, the growing number of students, make the student dormitory management faced with multiple, complex, complex situation. The problem of how to decipher, become the focus of the school logistics department leadership focus on. In order to adapt to the needs of the development of the school, and further improve the efficiency of school logistics work, school logistics department need a adapt to student

dormitory daily management software system, in order to give full play to the advantages of modern information technology and Internet, realize the artificial management to change the way of computer management, increases the working efficiency of the dormitory management.(Malit, 2011).

According to Fritzgerdan Malit (2011)a dormitory management information system is divided into seven function modules, namely: system management module, the student accommodation module, dormitory management module, health check module, water and electricity charge module registration module, housing repair service module, the migrant population. Among them, the system management module is divided into two sub-modules user registration, password modification. Dormitory management module includes add, query the dormitory. Students check module includes: hotel management, student information query. Health check module includes add inspection information and inspection information query two parts.

Dormitory Management System Documentation

Tsegaye Andargie (2010) contends that since the total number of students and dormitories available in a campus is very large, managing this huge number manually is very tedious and is proneto many

problems. All the necessary records of the above management activities are kept manually on papers and stored in file cabinet. Due to manual processing, error occur which lead to unnecessary rework. The major problems associated with the above mentioned activities include some male students are assigned dorm with female students and some female students also assigned with male students. The other problem is that all the records associated with the overall management process are stored manually on papers and stored in a file cabinet. This makes managing and manipulation of this data time consuming and has a significant impact on the dormitory manager.

DORMA is a dormitory management system that is deployed as a web application. It uses the web server and other web environments in order to function. The system was developed to cater to the needs of the dormitories and the residence hall managers in terms of easier data input and processing, as well as printing output and manipulation of data. DORMA includes a couple of functionalities usually done manually but are now made easier through simple clicking, and typing. It also uses a database system as a medium for storing processed information. To assure security of the application, the developers included a logging system which aims to mitigate security issues regarding confidential resident information. The system also allows the user to add, edit, and

delete resident data. The application allows users to search for records through the user toolbar. (Malit,2011)

The Internet technology has been increasingly mature today, in order to improve the work efficiency of school staff dormitory management, better help dormitory administrator for the intelligent student dormitory management, a high performance of students' dormitory management information system is particularly important. It can provide efficient and convenient query channel for students, but also for the school dormitory administrator timely understanding of students' dormitory information, which can make the corresponding work in a timely manner and tactical adjustment, so that the students can improve the satisfaction of the dormitory administrator. This paper used the Android platform, not only takes advantage of the existing school digital campus network, but also make the system operation more humanized and simplicity, but also improve the maintainability of the system. (Peng & Xie, n.d.)

In order to improve the efficiency of management and to meet the demand of automation management on dormitory at university, a university dormitory management system based on agile development architecture is built, which adopts Brower/Server mode and the idea of agile development, and makes full use of agile development architecture

technologies and related technologies, including agile architecture, automatic code generation technology and asp.net technology. (Zhang, et. Al, 2011)

At Arbaminch University, the total number of students and dormitories available in the campus is very large, managing this huge number manually is very tedious and is proneto many problems. All the necessary records of the above management activities are kept manually on papers and stored in file cabinet. Due to manual processing, error occur which lead to unnecessary rework. The major problems problems associated with the above mentionedactivities are the following: During the arrangement of students for the allocation, list of students is received from student dean and students are classified based on their sex and level of education. Duringthis process some male students are assigned dorm withfemale students and some female students also assigned with male students. This is a great problem facing each year, and leads to unnecessary rework. The other problem is all the records associated with the overall management process are stored manually on papers and stored in a file cabinet. This makes, managing and manipulation of this data is time consuming and has a significant impact on the Dormitory Management System.(Andargie, n.d.)

Iraba Marie Louise (2009) developed a Student Residence Management System for the University of the Western Cape to facilitate application for accommodation online and to help the staff to manage the different residence activities such as controlling booking, payments and room allocation. The Student Residence Management System is able to notify and confirm all room allocations. Room allocation confirmations would be sent by email to students who were given accommodation. The development of this system also focused on security of the information and privileges and access rights are attributed to students and administrators.

**Objectives**

Generally, this Capstone Project aimed to develop a website for ISPSC Dormitory.

Specifically, it sought to answer the following:

1. Identify the existing process in terms of admission, accommodation and reservation. Determine the existing dormitory reservation process of ISPSC dorm,
2. Design a user interface for the new Dormitory Management System and develop a database to keep the overall records associated with the management process,

3.Design a user friendly system and test the developed Dormitory Reservation System.

**Scope and Limitation**

The study focused on the development of a website for the ISPSC Dormitory. This is to provide the needed information to the boarders regarding the rules and regulations of the dormitory and also to make any transaction to the dorm master through web connection.

This capstone study covered the following: a) reserve rooms through online; b) display a picture of rooms; c) auto update of room details if available or not (occupied or reserve or taken); d) member's registration; e) includes the cancellation; f) enable students view their dormitory information easily and quickly; g) manage dormitory related information;

The study was limited also to: a) Monitoring the routine of the students and giving accurate information to them is difficult, mostly in giving clearance to them upon living the campus; b) Failure of electric power and network connection; c) Delay payments; d) Online payment is not supported; and e) cannot run on mobile phones.

# Chapter II

# METHODOLOGY

## Software Development Model

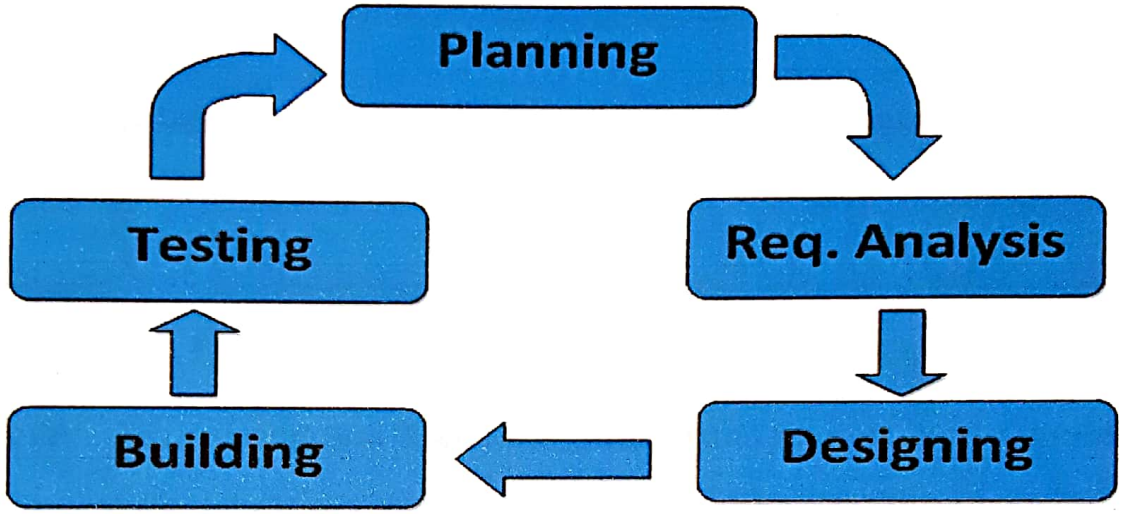


**Figure1. Agile SDLC Model**

Agile SDLC model is a combination of iterative and incremental process adaptability and customer satisfaction by rapid delivery of working software product. Agile methods break the product into small incremental builds. This builds are provided in iterations (https://www.tutorialspoint.com/sdlc/sdlc_agile_model.htm).

**Planning.** Once an idea is deemed viable and feasible, the project team comes together and works to identify features. The goal of this phase is to breakdown the idea into smaller pieces of work (the features) then to prioritize each feature and assign it to an iteration. The

researchers chose to develop the Website for ISPSC dormitory management and Online Reservation System based on the observations they gather regarding the said dormitory. The proponents prepare a time frame for the schedule of activities in conducting the study.

**Requirement Analysis.** This phase involves many meetings with managers, stakeholders and users to identify business requirements. The team needs to gather information like who will use the product and how they will use it. These requirements must be quantifiable, relevant and detailed. The information that were gather such as documentation of the current system or the current process that is being utilized which includes the process model, context diagram and the system flow was carefully analyze in order to find out how it operates in order to have a good basis of comparing it against the new proposed process.

**Designing.** The system and software design is prepared from the requirements identified and the previous phase. The team needs to think about what the product or solution will look like. The test also come up with the test strategy or plans to proceed. The developed process was drawn to define the work flow of the new process which directly related with the admission.

**Building.** In this stage of SDLC, the actual development starts and the product is built. The programming code is generated as per DDS

during this stage. If the design is performed on a detailed and organized manner, code generation can be accomplished without much hassle.

The user interface of the system has been regarded as a frontline of any dormitory admission and online reservation system and no matter how presentable the dormitory but it lacks with essential functions required by the customer/s or students it will remain in effective.

**Testing.** Testing is technique used in user- centered interaction design to evaluate a product by testing it on users. This can be seen as an irreplaceable usability practice, since it gives direct input on how real users use the system.

This stage is usually a subset of all the stages as in the modern SDLC models, the testing activities are mostly involved in all the stages of SDLC. However, this stage refers to the testing only stage of the product where product defects are reported, tracked, fixed and retested, until the product reaches the quality standards defined in the SRS.

**Project Plan**

Project plan is a document that contains a project scope and objectives. It is most commonly represented in the form of a Gantt chart. This project was conducted on January-May 2018.

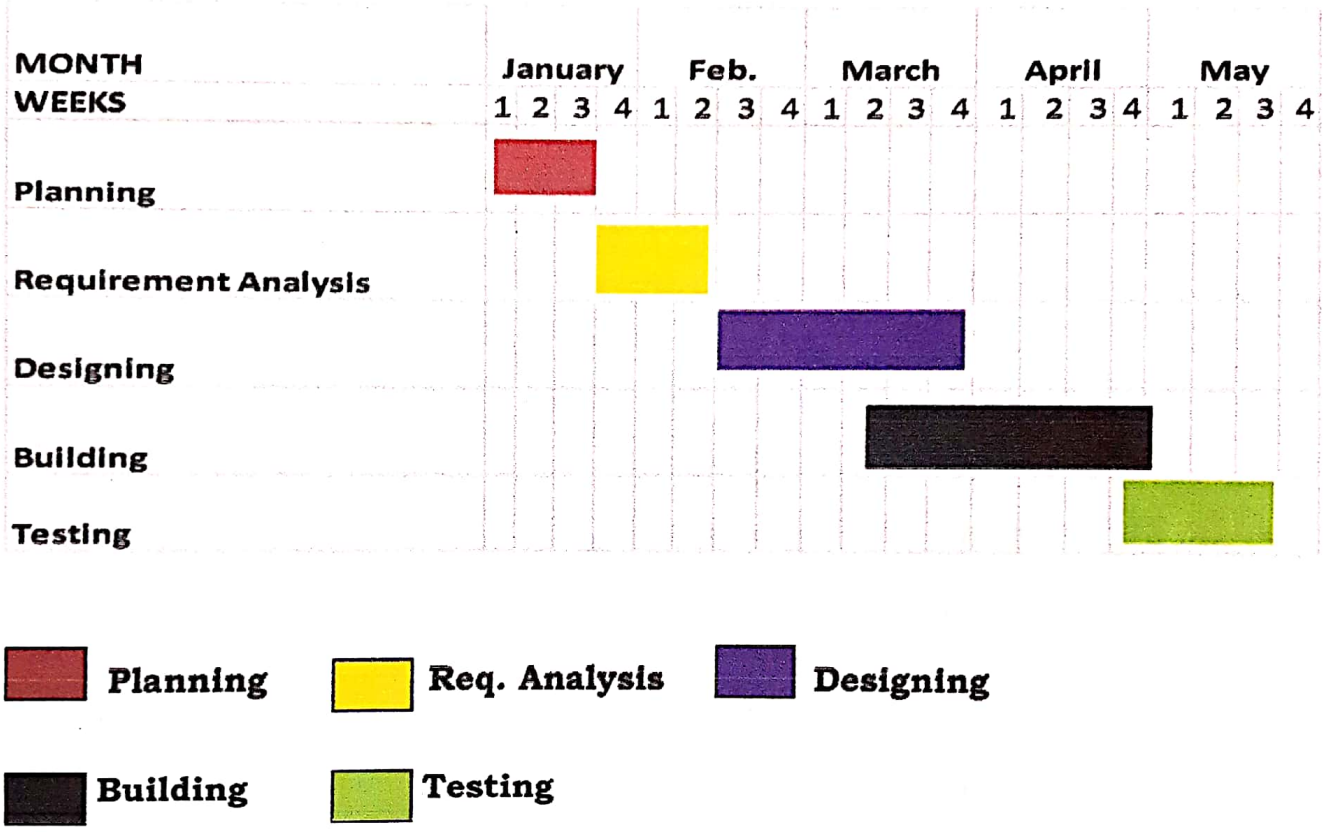


**Table1. Gantt chart**

The table presented the activities undertaken by the proponents in developing the website for the ISPSC Dormitory. It is also presented then the duration of the research until to its final presentation.

**Project Staff**

**Table2. Project Team Assignment**

| Project Role | Names |
|---|---|
| Project Manager | Ederlyn Disu |
| System Analyst and Designer | Ederlyn Disu<br>Kristine Villaruz<br>April Lyn Gutierrez<br>Laurence Joy Jacob |
| Programmer/s | Kristine Villaruz<br>Laurence Joy Jacob<br>April Lyn Gutierrez |
| QA/Tester | Ederlyn Disu<br>Kristine Villaruz<br>Laurence Joy Jacob<br>April Lyn Gutierrez |
| Documentary/ Technical writer | Ederlyn Disu |

Table 2 shows the respective assignments of each member of the group. Each of which was designated as analyst, designer, programmer, developer and documenter. Each member would be working closely together for the completion of the project. The analyst and developer would be working with the development of the system while the documenter responsible in taking note of the progress project and will be the one responsible in the writing up of the manuscript.

**Data Gathering Procedure**

**Interview.** The interview was conducted at ISPSC Dormitory. The information gathered included the brief history, current system, admission process as well as problems encountered while admitting boarders.

**Internet Research.** The proponents also used the Internet for relevant information for the study as well as new technologies that could be used in the development and implementation of a proposed system.

**Library Research.** The researchers browsed different unpublished researched manuscripts at the ISPSC library to gather insights on projects that are previously undertaken by the different researchers that are relevant to the current project. The researchers also read some books to learn more about software models and the process of a system/software development.

**Survey.** The proponents conducted a survey on the number of boarders in the dormitory, both students and teachers. They also include the different problems encountered by the boarders regarding the ambiance of the dormitory and the internet connection the place.

The Website Analysis Measurement Inventory (WAMMI) was used to determine the usability of the system. WAMMI is a 20-item questionnaire that measures the efficiency, attractability, helpfulness, controllability and learnability of a website. A 5-point Likert scale was used to measure the degree of agreement with 5 as strongly agree and 1 as strongly disagree.

**Document Analysis.** The proponents also requested pertinent documents and information needed from the Dorm Manager for the completion of the research. These are needed as the basis for the development of the data model as well as the input/output design of the research.

**Sources of Data**

The Dorm Manager, Mrs. Beatriz Mariñas and the president of the dormitory, Ms. Nicole Kay Guiao, served as the respondents and source of information of the study. The documents gathered include admission slip and reservation slip.

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