System Requirements Specification

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1. Scope:

This system will take the attendance in hostel to a whole different level with less labor required and less hassle, as it will directly scan the barcode present on student's ID cards and it will generate a log of the students who marked their attendance along with a time stamp.

The scope of this project is not limited to only the hostels, it can also be further extended to lecture theatres, classrooms, and labs etc.

The Hostel Attendance System will help in:

1. Recording the attendance of students in the hostels.
2. Better that the ways of old attendance marking which is much more time consuming.
3. Help in keeping all the data organized.

2. Functional and Non-Functional Requirements:

Functional Requirements:

1. Admin login facility (in this case admin is Warden and Superintendent)
2. Admin can register students in the database of that particular hostel.
3. Modify the student's attendance.
4. Check how many students are on leave and how many are present.
5. Add or remove students from the database.
6. The superintendent has to enter the data of the students in the database along with their Barcode.

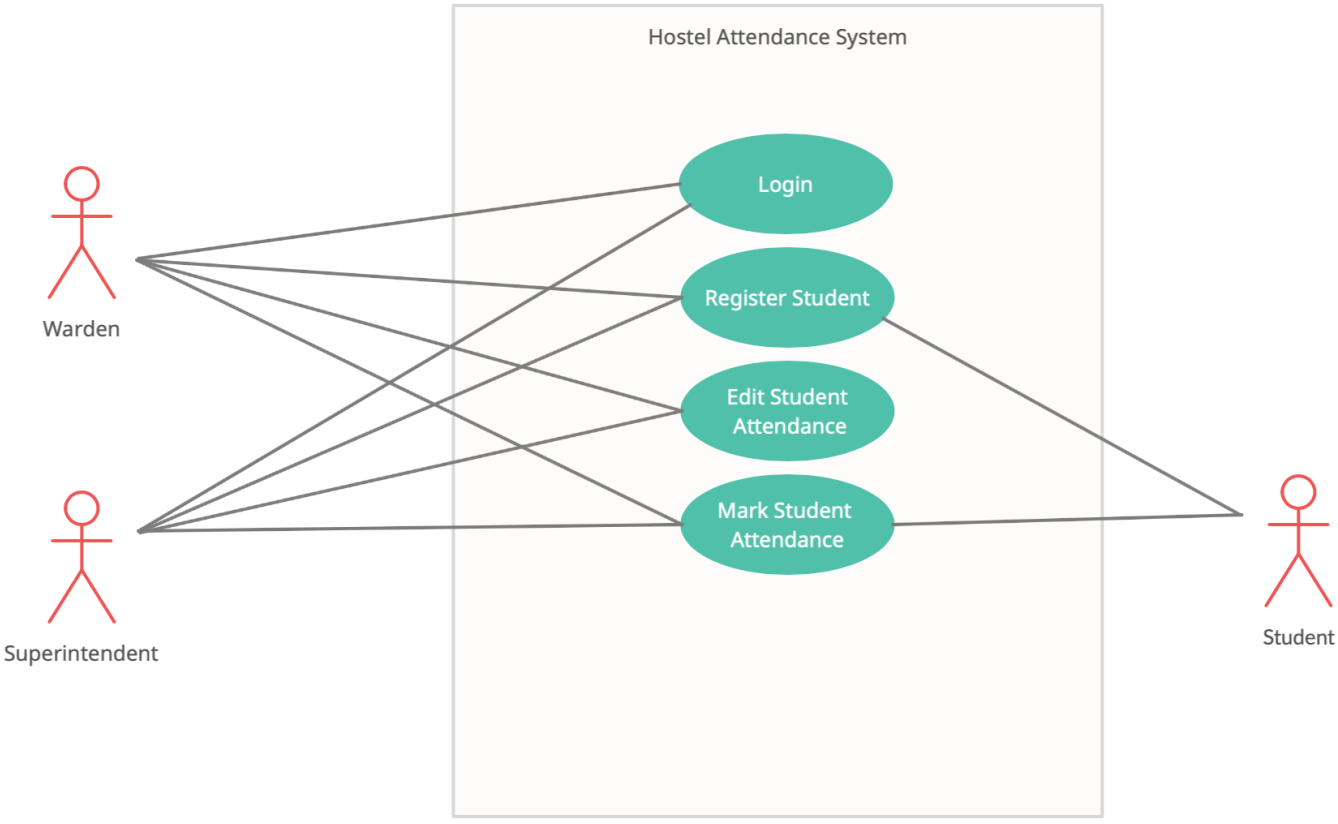
Non-Functional Requirements:

1. **Operating System:**
   Software will run on Windows 8.1+.
2. **Usability:**
   This will be efficient as it is doing just a basic job of reading a barcode and storing it somewhere in a database.
3. **Maintainability:**
   Software would build up in such a way that classifications of errors and maintenance of mechanism become easy.
4. **Flexibility:**
   Software would be flexible so that it can easily accept all changes at low cost, time and experience.
5. **Access:**
   Software will be accessible locally so there is no server cost to be encountered.

3. Use Case Diagram:

We have three types of users for this software:

1. **Warden:** The person who has access to every aspect of the database.
2. **Superintendent:** The person who will register every student who is living in a particular hostel, and will be responsible for the attendance marked on the daily basis.
3. **Student:** Students will only have to scan their ID cards by the barcode reader to mark themselves present.



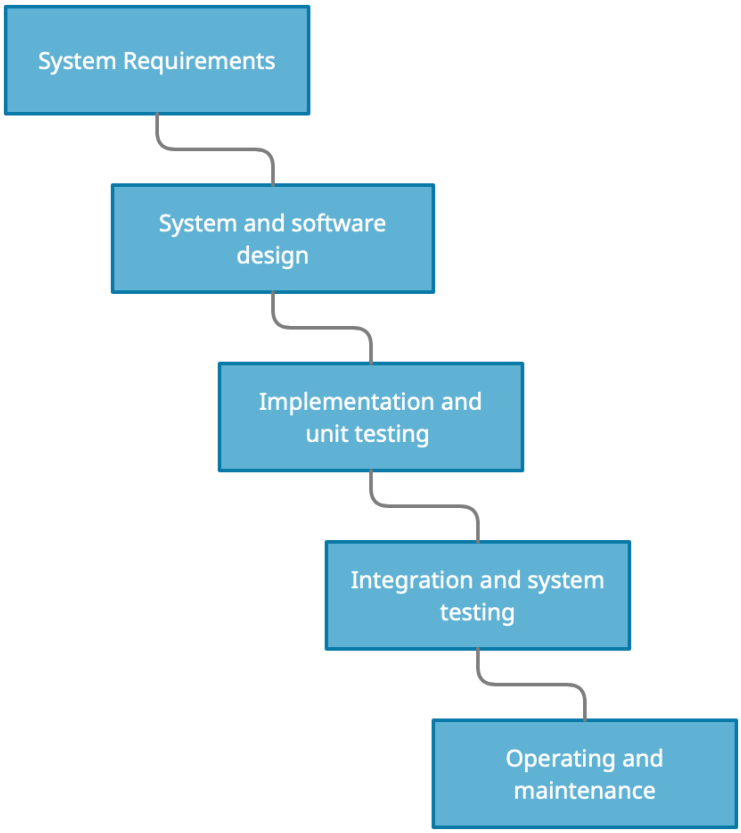
4. Adopted Methodology:

"Methodology is a framework used to structure, plan and control the process of developing an information system."

VU process model is a combination of Waterfall and Spiral Method.

4.1 Waterfall Model:

Waterfall Model is fast process model to be introduced. This model is also known as linear sequential or classical life cycle model.



It consists of five stages:

1. **System Requirements:**
   In this stage, the system services, constraints and goals are established by consolation with system users. It defined in detail and serves as a system specification.
2. **System and software design:**
   In this stage, we will conceptualize overall system architecture. In design phase involves fundamental system abstraction and their relationships.
3. **Implementation and unit testing:**
   In this stage, the software design realized as a set of programs or a program unit. In unit testing we will verify that each unit must meet its specifications.

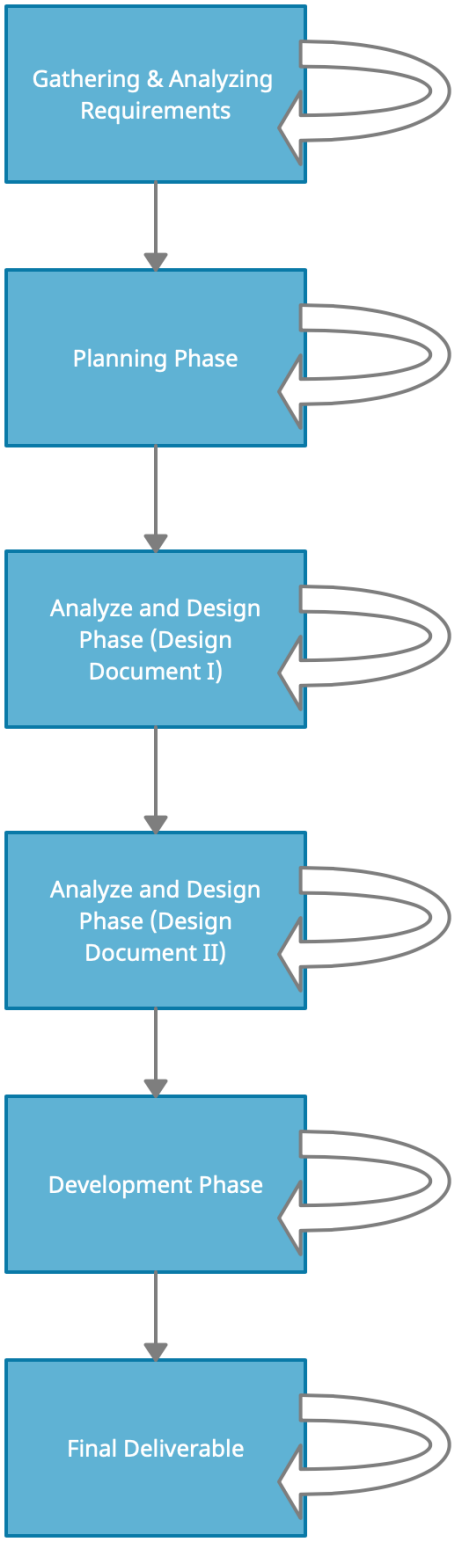
4. **Integration and system testing:**
   In this stage, the system individual program units or programs are integrated and tested to the complete system that ensure software requirement have been met.
5. **Maintenance:**
   This stage of a software life cycle is the longest. Maintenance means correcting errors which were not discovered in earlier stages of development.

4.2 VU Process Model:

It is the combination of waterfall model and spiral model. It is also called Hybrid approach of system development. It has five phases which are gathering and analyzing requirements, planning, analysis and design, development and implementation.in requirement phase goals services and constraints are established after discussion with user. It also maximizes the quality of system and minimizes any risks and errors.

4.3 Reason for choosing VU Process Model:

1. The main idea is to choose it to get the benefits of both of these models.
2. It is sequential model with backward repetition.
3. We want to achieve the linear nature of waterfall and iterative plus risk reduction nature of spiral model.
4. In vu process model we will be work in phases to complete the given project.
5. All the activities are performed in a sequence in VU Process Model.


Gathering & Analyzing Requirements
Planning Phase
Analyze and Design Phase (Design Document I)
Analyze and Design Phase (Design Document II)
Development Phase
Final Deliverable