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Ans 1: Software is created via Programing. Programing is the process of creating a set of logical instructions for a digital device to follow using a programming language. The process of Programming is sometimes called "coding" because the syntax of a Programming language is not in a form that everyone can understand. It is in "code."

The process of developing good software is usually not a simple as sitting down and writing some code. True, sometimes a programmer can quickly write

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a short program to solve a need. But most of time the creation of software is a resource intensive process that involves several different groups of people in an organization In the following sections, we are going to review several different methodologies for software development.
Software Development life cycle methodology exist but most contain the following phases.

(1) ~~Plan~~ Preliminary Analysis: In this phase a review is done of the request. Is creating a solution Problem? what alternatives exist?

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what is currently being done about it? Is this Project a good fit for our organization? A key part of this step is is a feasibility analysis? which include an analysis of the technical feasibility. the economic feasibility and the legal feasibility. This step is important in determing if the Project should even get started.

(2) System Analysis: In this ~~system~~ Phase one or more system work with ~~or~~ different Stakeholder groups to determine the specific requirements for the new system. No Programing is done in this system

(3) System Design: In this Phase the designer takes the systems

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Requirements document created in the previous phase and develops the specific technical details required for the system. It is in this phase that the business requirement are translated into specific technical requirement. The design for the user interface, database, data input and output and reporting are developed here. The result of this phase is a system design document. This document will have everything a Programmer will need to actually create a system.

(4) Programming: The code finally gets the written in the Programming phase. using the system design document as

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a guide a programmer develop the program. The result of this phase is an initial working program that meet the requirement laid out in the system-analysis phase and the design developed in the system design phase.

(5) Testing: In the testing phase The software program developed in the previous is put through a series of structured tests. The first is a unit tests individual part of the code for errors or bugs. Next is the system test, where the different component of the system are tested to ensure that they worked together properly.

(6) Implementation: once the new system is developed and tested

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tested, it has to implemented in the organization. This phase include training the users, providing documentation and conversion from any previous system to the new system. Implementation can take many forms, depending on the type of system, the number and type of users and how urgent it is that the system become operational. These different forms of implementation are covered later in the chapter.

(7) Maintance: This final phase takes place once the implementation phase is complete. In this phase, the system has structured support process in place: reported bugs are fixed and requests for

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new features are evaluated and implemented system updates and backups are performed on a regular basis.

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Ans2 In general software customers expect all software to be ~~dependable~~ dependable. However, for non critical applications, the may be willing to accept some system failures. Some Application have very high reliability requirements and special software engineering techniques may be used to achieve this. Failures are caused as result of system errors that are derived from faults in the system. However fault do not necessary result in system errors if the erroneus system state is transient and can be corrected before and error arises. Error do not necessarily lead to system failure if the error is corrected by built in error detection and recovery mechanism.

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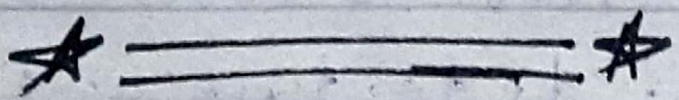
Fault detection techniques such as ~~de~~ debugging and testing are uncontrolled and controlled experiments, respectively, used during the development process to identify erroneous states and find the underlying faults before releasing the system. Fault detection techniques are applied during the development. but in some case they are also used after the release of the system. The blackboxes in an airplane to log the last few minutes of a flight is an example of fault detection technique.



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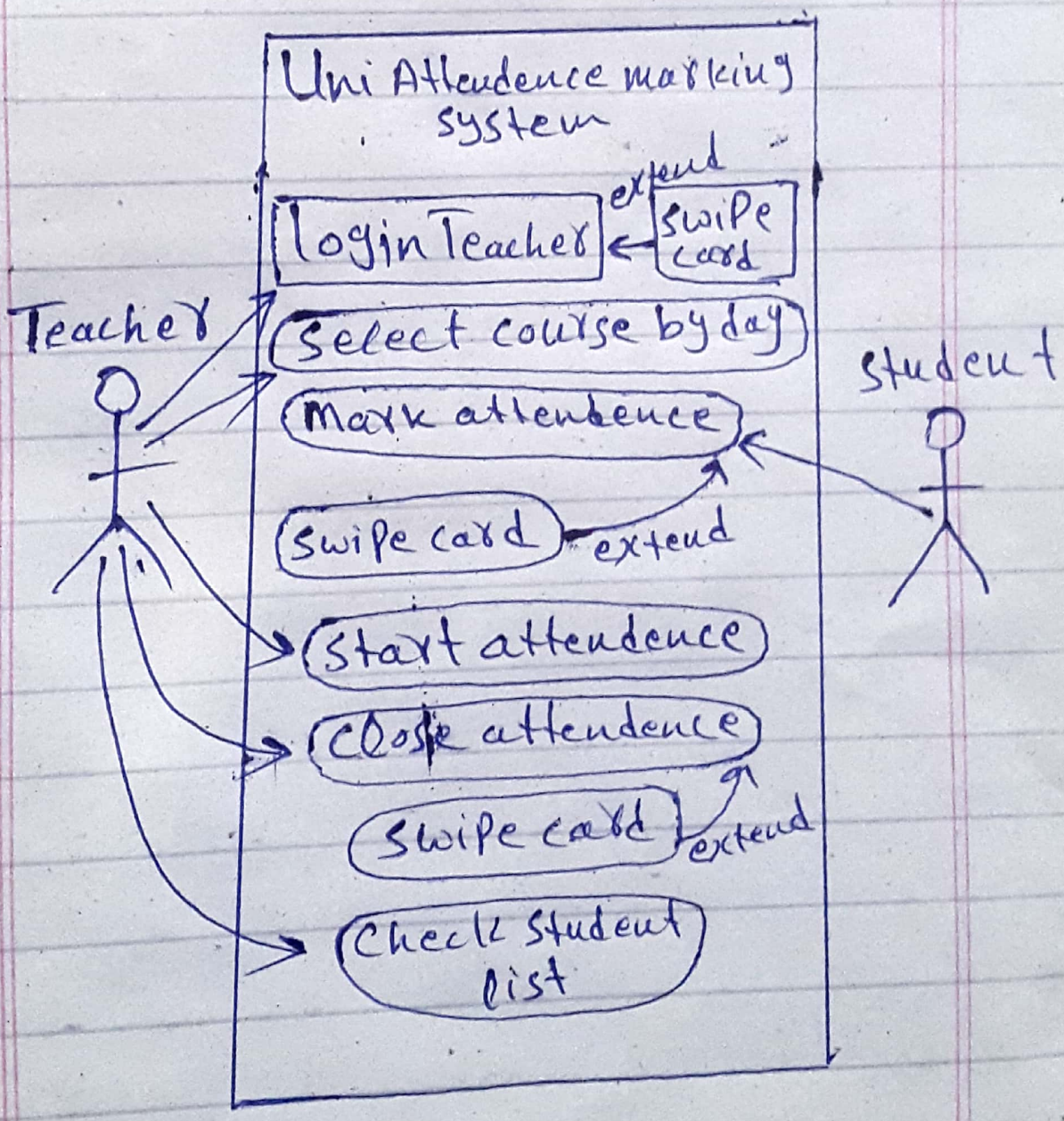
Ans3 University Attendence Marking system:

(1) Use case Diagram:



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(2) A Texual Use case Diagram.

Teacher — Teacher has the access of the whole marking system in class.

loginTeacher — First teacher swipe there own card.

Select course by day — Teacher swipe day by day.

Mark attendence — When we swipe the card the attendence will be mark.

Start attendence — The teacher swipe the card then the attendence start.

close attennce — If the teacher close attendence the teacher again swipe the card.

Check Student — The teacher check all student list.