**Task 3:DEFINE USE CASES AND REPRESENT THEM IN USE-CASE DOCUMENT FOR ALL THE STAKEHOLDERS OF THE SYSTEM TO BE AUTOMATED**

**Aim: To create use cases and represent them in use-case document for all the stakeholders of the system to be automated**

**Description:**

**A use case is a methodology used in system analysis to identify, clarify and organize system requirements. The use case is made up of a set of possible sequences of interactions between systems and users in a particular environment and related to a particular goal. The method creates a document that describes all the steps taken by a user to complete an activity. Every use case contains three essential elements:**

- **The actor. The system user -- this can be a single person or a group of people interacting with the process.**
- **The goal. The final successful outcome that completes the process.**
- **The system. The process and steps taken to reach the end goal, including the necessary functional requirements and their anticipated behaviors.**

- **How to write a use case**
- **There are two different types of use cases: business use cases and system use cases.**
- **A business use case is a more abstract description that's written in a technology-agnostic way, referring only to the business process being described and the actors that are involved in the activity. A business use case identifies the sequence of actions that need to be performed by the**

**business to provide a meaningful, observable result to the end user.**

- **On the other hand, a system use case is written with more detail than a business use case, referring to the specific processes that must happen in various parts of the system to reach the final user goal. A system use case diagram will detail functional specifications, including dependencies, necessary internal supporting features and optional internal features.**
- **When writing a use case, the design scope should be considered to identify all elements that lie within and outside the boundaries of the processes. Anything essential to the use case that lies outside its boundaries should be indicated with a supporting actor or by another use case. The design scope can be a specific system, a subsystem or the entire enterprise. Use cases that describe business processes are typically of the enterprise scope.**

**The writing process includes:**

1. **Identifying all system users and creating a profile for each one. This includes every role played by a user who interacts with the system.**
2. **Selecting one user and defining their goal -- or what the user hopes to accomplish by interacting with the system. Each of these goals becomes a use case.**
3. **Describing the course taken for each use case through the system to reach that goal.**
4. **Considering every alternate course of events and extending use cases -- or the different courses that can be taken to reach the goal.**

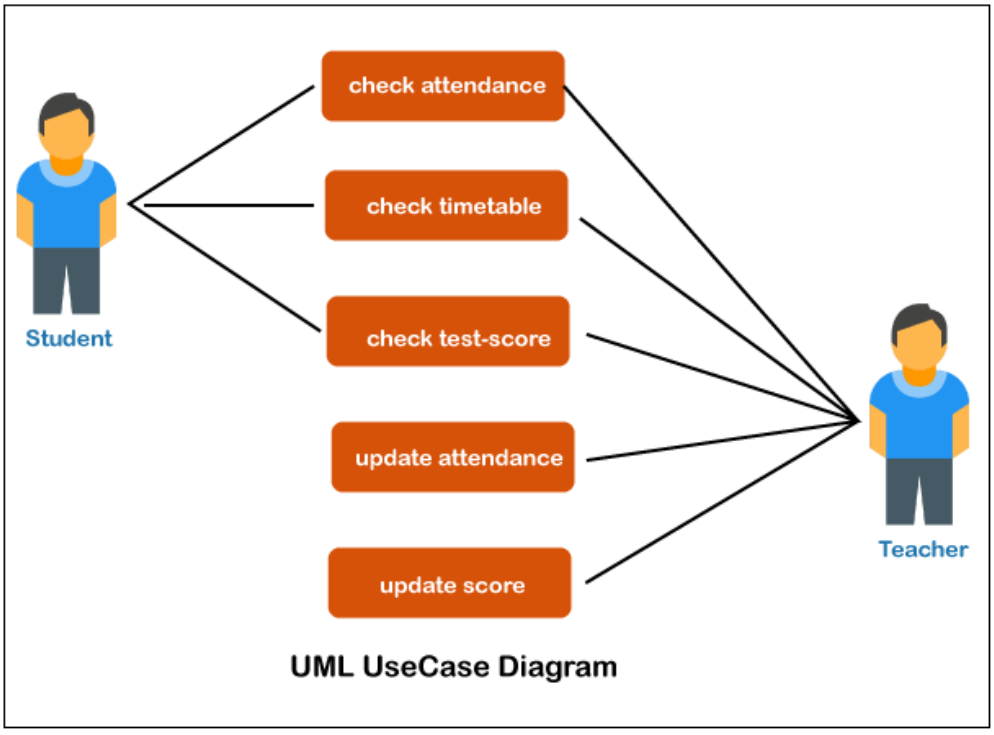
5. **Identifying commonalities in journeys to create common course use cases and write descriptions of each.**
6. **Repeating steps two through five for all other system users.**

**Benefits of use case**

**A single use case can benefit developers by revealing how a system should behave , also helping identify any errors that could arise in the process.**

**Use-Case Diagram-Student Management System**

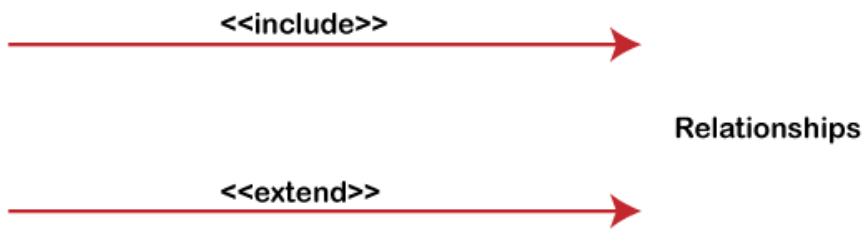
**The below figure shows the working of the student management system:**

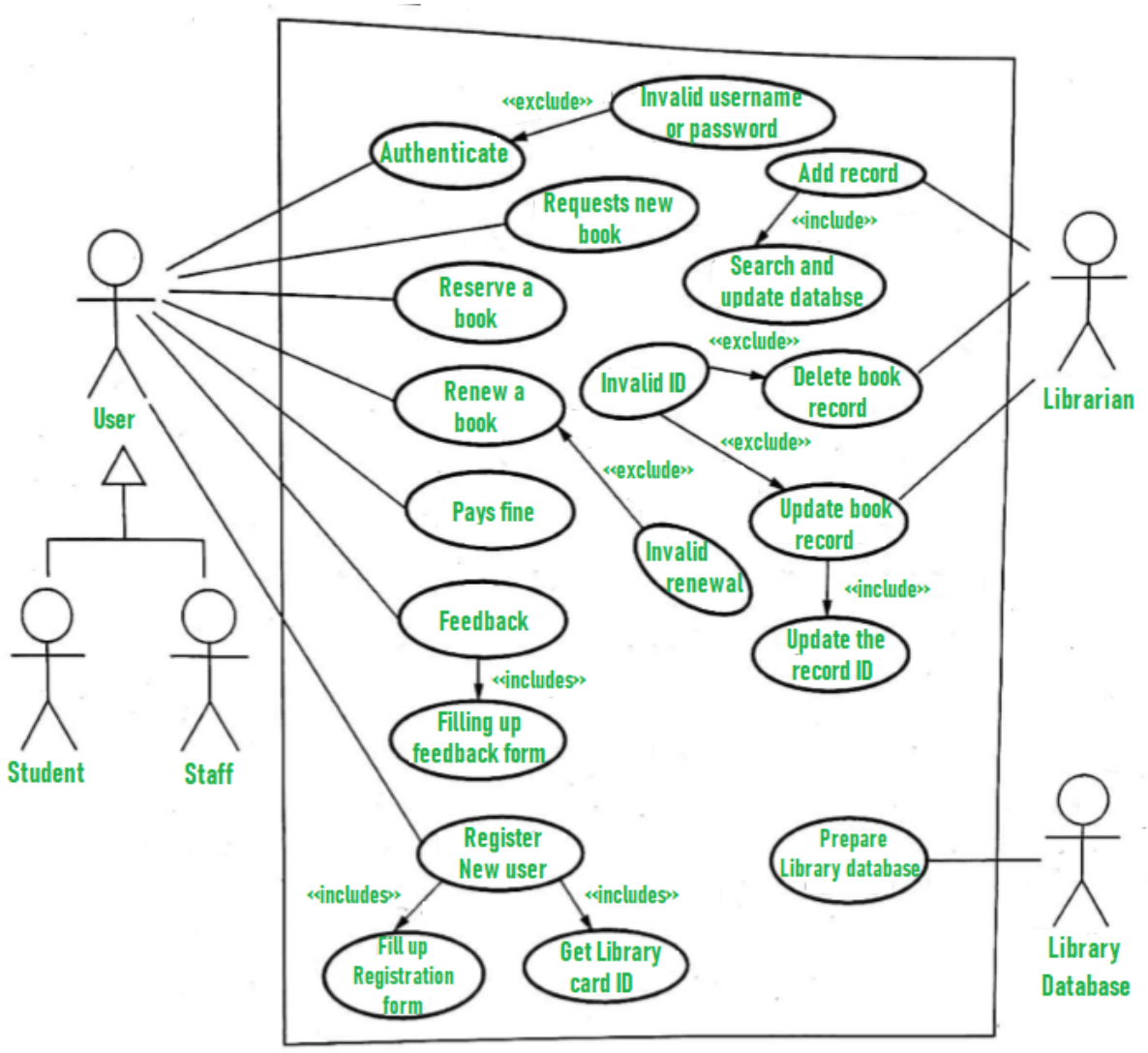



## Relationships

**With the simple line we can represent relationships between an actor and use cases. For relationships**

**between use-case, we use arrows which are labeled either "extends" or "uses". The "extends" relationship shows the alternative options under the specific use case. The "uses" relationship shows that single use-case is required to accomplish a job.**




«exclude»
Invalid username or password
Authenticate
Add record
Requests new book
«include»
Search and update databse
Reserve a book
«exclude»
Invalid ID
Delete book record
Renew a book
«exclude»
«exclude»
Update book record
Pays fine
Invalid renewal
«include»
Feedback
Update the record ID
«includes»
Filling up feedback form
Register New user
Prepare Library database
«includes»
«includes»
Fill up Registration form
Get Library card ID
User
Student
Staff
Librarian
Library Database