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| **HEALTH CARE CLINIC**  **Patient Registration System**  **User Requirements Document**  **(Object Oriented Development)**    **SATYAM COMPUTER SERVICES LIMITED**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_    ***Rakesh Lab, Ground floor, Vikramsila Block, STC, Bahadhurpally, Hyd*** |

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| **Patient Registration System**  **User Requirements Document**  **(Object Oriented Development)**    **Prepared By Inspected/Reviewed By Approved By**  **NAME:** S.RaviTheja  S.UdayKiran  **ROLE:**  **SIGNATURE:**  **DATE:** 6th May, 2011 |

**HEALTH CARE CLINIC**

**User Requirements Document (OO)**

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# Introduction

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| Behavior Modeling | The real world application scenarios are captured as Use Cases. The Use Case diagrams are generated manually or using a tool. This URD along with the modeling elements forms the basis for the product development. References Guidelines for Object Oriented Modeling. |

The URD provides the overall description of the product environment, detailed descriptions of the Use Cases.

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| Overview | Health Care Clinic intends to provide medical facilities to people living in India. As a part of providing quality services it decides to automate the day-to-day activities of Some of the functions, which are identified, to be computerized as part of the Patient Registration include New-patient Registration, generating Registration Id, and search Patient details, Doctor’s Appointment, Provide Accommodation, Provide Treatment and Bill Generation. The system can provide the details about the Patient’s records, tests undergone by the patient and doctor appointment details. |

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| Purpose | The project is about developing a Patient Registration System which is to  be developed using SQL Server and ADO. NET using the concepts of Normalization. |

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| Scope | The system will provide the following features:   * Automation of patient registration process. * Fix Doctor Appointment and Providing Accommodation. * Maintaining the payment details and medical reports.   The following interfaces are expected to be delivered:   * Personal details form: To capture the required details, namely, name, address, age, sex, disease & specialty in which he seeks for treatment, contact number, email, and the patient id generated. * Patient details form: This form is meant for generating the bills for registration fee, doctor fee, and diagnostic test fee. |

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| Definitions and Acronyms | |  |  | | --- | --- | | **Acronyms** | **Explanation** | | URD  Admin | User Requirements Document  Administrator | |  |  | |

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| References | 1. SQL Server 2005 by Wrox Publication 2. Professional C# by Wrox Publication   *.* |

# General Description

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| System Perspective | It is a patient registration system which allows the operator to register the patients and fix an appointment with the respective doctor. Apart from this, it also enables the Doctor to view the appointments along with the patient details. Lastly, it allows the administrator to update or delete the patients and the doctors. |

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| System Environment | **Hardware requirements**   |  |  |  | | --- | --- | --- | | **Number** | **Description** | **Alternatives (If available)** | | 1 | Windows Operating System |  |   **Software requirements**   |  |  |  | | --- | --- | --- | | **Number** | **Description** | **Alternatives (If available)** | | 1 | .NET Framework |  | | 2 | Visual Studio 2005 |  | | 3 | NetBeans IDE 6.0.1 |  | | 4 | SQL Server 2005 |  | |

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| Development Environment | Same as System Environment |

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| User Characteristics | 1. Administrator  * Centralized control over the System * Capability to delete or update patient and doctor details * View patient & doctor details |
|  | 1. Operator  * To login into the system using the application * To register the patient details to make an appointment with the doctor * Allot the accommodation * Generate the bill * View the Doctor, Patient details and also view appointments  1. Doctor  * To login into the system using the application * To view Patient details * To view the appointments * Treat the patients  1. Patient  * Go for the treatment * Pay the bill |

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| Customer Constraints | * Database Security * If appointment is not available, option should be available to make a new one * All the required ID’s are suppose to be unique |

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| Assumptions, Dependencies and Risks | 1. Creation of username & password  * Alphanumeric * No special characters (only for username) * Password to be greater than 6 characters. |

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| Security Requirements | * Database Security * Details of Doctor and Patients are to be confidential |

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| Unstated requirements | * Data Back-up |

# 

# Use Cases Look-up Table

**ADMINISTRATOR**

| **S. No.** | **Use Case ID** | **Use Case Name** | **Source[[1]](#footnote-1)** | **Need[[2]](#footnote-2)** | **Priority[[3]](#footnote-3)** | **Stability[[4]](#footnote-4)** | **Verifiability[[5]](#footnote-5)** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | ADM-20-UC01 | Login | Health Care Clinic | Essential | High | Stable | Verifiable |
| 2. | ADM-20-UC02 | Adds/Removes Doctor | Health Care Clinic | Essential | High | Stable | Verifiable |
| 3. | ADM-20-UC03 | Adds/Removes Operator | Health Care Clinic | Essential | High | Stable | Verifiable |
| 4. | ADM-20-UC04 | Views/Updates data | Health Care Clinic | Essential | Medium | Stable | Verifiable |

**DOCTOR**

| **S. No.** | **Use Case ID** | **Use Case Name** | **Source1** | **Need2** | **Priority3** | **Stability4** | **Verifiability5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | DOC 20-UC01 | Login | Health Care Clinic | Essential | High | Stable | Verifiable |
| 2. | DOC20-UC02 | View Doctor Details | Health Care Clinic | Essential | Medium | Stable | Verifiable |
| 3. | DOC20-UC03 | View Appointments | Health Care Clinic | Essential | High | Stable | Verifiable |
| 4. | DOC20-UC04 | Patient Treatment | Health Care Clinic | Essential | High | Stable | Verifiable |

**OPERATOR**

| **S. No.** | **Use Case ID** | **Use Case Name** | **Source1** | **Need2** | **Priority3** | **Stability4** | **Verifiability5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | OPR-20-UC01 | Login | Health Care Clinic | Essential | High | Stable | Verifiable |
| 2. | OPR-20-UC02 | Register Patient Details | Health Care Clinic | Essential | High | Stable | Verifiable |
| 3. | OPR-20-UC03 | Fix Appointment | Health Care Clinic | Essential | High | Stable | Verifiable |
| 4. | OPR-20-UC04 | Generate Bill | Health Care Clinic | Essential | High | Stable | Verifiable |
| 5. | OPR-20-UC05 | Removes Patient | Health Care Clinic | Essential | High | Stable | Verifiable |

**PATIENT**

| **S. No.** | **Use Case ID** | **Use Case Name** | **Source1** | **Need2** | **Priority3** | **Stability4** | **Verifiability5** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1. | PAT-20-UC01 | Gets Treatment | Health Care Clinic | Essential | High | Stable | Verifiable |
| 2. | PAT-20-UC02 | Pays the Bill | Health Care Clinic | Essential | High | Stable | Verifiable |

# Use Cases Specifications

**ADMINISTRATOR**

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| --- | --- | --- |
| **Use Case ID:** ADM-20-UC01 | | **Use Case Name:**Login |
| **Description:** | This use case allows user to login that is needed for accessing/utilizing the services | |
| **Actors:** | Admin | |
| **Preconditions:** | The Admin should have a valid login id and password | |
| **Post conditions:** | The Admin enters into the system. | |
| **Frequency of Use:** | 2000/day | |
| **Normal Course of Events:** | 1. The actor logs in his user id and password into the system. 2. The system validates the user id and password to authenticate the actor.   The actor enters into the system and he/she has certain privileges in the system based on his/her access rights | |
| **Alternative Courses:** | System will display an error message in case either the user id or password or both are invalid and actor will be asked to provide login information once again or exit the system. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | If the user id and password entered is invalid, then an error message will be flashed. | |
| **Includes:** | Maintain Patient & Doctor Details | |
| **Special Requirements:** | The security check for the user id and password should be done. | |
| **Assumptions:** | If the actor enters a valid id and password, the actor will be shown the main menu or else if an invalid user id is entered, the actor gets an error message. | |
| **Notes and Issues:** | None | |

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| --- | --- | --- |
| **Use Case ID:**ADM-20-UC02 | | **Use Case Name:**Adds or Removes Doctor Details |
| **Description:** | This use case allows the admin to create or remove a record of doctor details. | |
| **Actors:** | Admin | |
| **Preconditions:** | The Admin should get the doctor details. | |
| **Post conditions:** | Doctor details record is created. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Doctor details are to be filled. 2. Doctor details record is created or removed by the Admin. | |
| **Alternative Courses:** | The details are to be recorded carefully and should be authentic and pertaining to the specified doctor. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | Maintaining doctor Details. | |
| **Special Requirements:** | Should maintain a proper record of details. | |
| **Notes and Issues:** | None | |

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| --- | --- | --- |
| **Use Case ID:**ADM-20-UC03 | | **Use Case Name:**Adds or Removes Operator Details |
| **Description:** | This use case allows the admin to create or remove a record of Operator details. | |
| **Actors:** | Admin | |
| **Preconditions:** | The Admin should get the Operator details. | |
| **Post conditions:** | Operator details record is created. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Operator details are to be filled. 2. Operator details record is created or removed by the Admin. | |
| **Alternative Courses:** | The details are to be recorded carefully and should be authentic and pertaining to the specified Operator. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | Maintaining Operator Details. | |
| **Special Requirements:** | Should maintain a proper record of details. | |
| **Notes and Issues:** | None | |

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| --- | --- | --- |
| **Use Case ID:** ADM-20-UC04 | | **Use Case Name:**View Doctor or Operator Details |
| **Description:** | This use case allows the Admin to view the details of all the Doctor or Operator in the hospital. | |
| **Actors:** | Admin | |
| **Preconditions:** | The Admin should maintain a record of all the Doctor or Operator in the hospital according to their specialty. | |
| **Post conditions:** | The Admin can view the details of all the Doctor or Operator in the hospital from the database. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Admin maintains the record of all the Doctor or Operator. 2. He views the Doctor or Operator’ details. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | Admin Page. | |
| **Special Requirements:** | None | |
| **Assumptions:** | No delete is allowed for the Doctor or Operator details. | |
| **Notes and Issues:** | None | |

**DOCTOR**

|  |  |  |
| --- | --- | --- |
| **Use Case ID:**DOC-20-UC01 | | **Use Case Name:**Login |
| **Description:** | This use case allows user to login that is needed for accessing/utilizing the services | |
| **Actors:** | Doctor | |
| **Preconditions:** | The Doctor should have a valid logon id and password | |
| **Post conditions:** | The Doctor enters into the system. | |
| **Frequency of Use:** | 2000/day | |
| **Normal Course of Events:** | 1. The actor logs in his user id and password into the system. 2. The system validates the user id and password to authenticate the actor.   The actor enters into the system and he/she has certain privileges in the system based on his/her access rights | |
| **Alternative Courses:** | System will display an error message in case either the user id or password or both are invalid and actor will be asked to provide login information once again or exit the system. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | If the user id and password entered is invalid, then an error message will be flashed. | |
| **Includes:** | View Doctor Details | |
| **Special Requirements:** | The security check for the user id and password should be done. | |
| **Assumptions:** | If the actor enters a valid id and password, the actor will be shown the main menu or else if an invalid user id is entered, the actor gets an error message. | |
| **Notes and Issues:** | None | |

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| --- | --- | --- |
| **Use Case ID:**DOC-20-UC02 | | **Use Case Name:**View Doctor Details |
| **Description:** | This use case allows the doctor to view his details when he logins. | |
| **Actors:** | Doctor | |
| **Preconditions:** | The Doctor should Login with valid user Id and Password. | |
| **Post conditions:** | Doctor can view all his appointments. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Doctor Logins into the system with valid user Id and Password. 2. The doctor can view his details and also the appointments. | |
| **Alternative Courses:** | The doctor views all the appointments and can change any appointments through the operator. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | View all appointments. | |

|  |  |  |
| --- | --- | --- |
| **Use Case ID:**DOC-20-UC03 | | **Use Case Name:** View Appointments |
| **Description:** | This use case allows the Doctor to View all his appointments | |
| **Actors:** | Doctor | |
| **Preconditions:** | The Doctor should login into the system with valid user Id and Password. | |
| **Post conditions:** | The Doctor can change any appointments through the operator if he wants to. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Doctor Logins with his user Id and Password. 2. The doctor views all his appointments and change if any. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | If the Doctor is not available then the appointment is postponed. | |
| **Includes:** | Accept or cancel any appointments. | |
| **Special Requirements:** | If the doctor is not available then he can cancel the appointment or the patient is moved to other doctor of same specialty. | |
| **Assumptions:** | None | |
| **Notes and Issues:** | None | |

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| --- | --- | --- |
| **Use Case ID:**DOC-20-UC04 | | **Use Case Name:**  Patient Treatment |
| **Description:** | This use case allows the Doctor to give treatment to the patient if the appointment is fixed. | |
| **Actors:** | Doctor | |
| **Preconditions:** | The Doctor should view his appointment date and time. | |
| **Post conditions:** | The Patient gets the treatment. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The doctor views all his appointments. 2. He then treats the Patient. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | Providing treatment and curing the disease of the patient through medicines, tests etc. | |
| **Special Requirements:** | If the Patients disease is not cured he can visit the hospital again. | |
| **Assumptions:** | None | |
| **Notes and Issues:** | None | |

**OPERATOR**

|  |  |  |
| --- | --- | --- |
| **Use Case ID:**OPR-20-UC01 | | **Use Case Name:**Login |
| **Description:** | This use case allows user to login that is needed for accessing/utilizing the services | |
| **Actors:** | Operator | |
| **Preconditions:** | The Operator should have a valid logon id and password | |
| **Post conditions:** | The Operator enters into the system. | |
| **Frequency of Use:** | 2000/day | |
| **Normal Course of Events:** | 1. The actor logs in his user id and password into the system. 2. The system validates the user id and password to authenticate the actor.   The actor enters into the system and he/she has certain privileges in the system based on his/her access rights | |
| **Alternative Courses:** | System will display an error message in case either the user id or password or both are invalid and actor will be asked to provide login information once again or exit the system. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | If the user id and password entered is invalid, then an error message will be flashed. | |
| **Includes:** | Maintain Access Details | |
| **Special Requirements:** | The security check for the user id and pass word should be done. | |
| **Assumptions:** | If the actor enters a valid id and password, the actor will be shown the main menu or else if an invalid user id is entered, the actor gets an error message. | |
| **Notes and Issues:** | None | |

|  |  |  |
| --- | --- | --- |
| **Use Case ID:**OPR-20-UC02 | | **Use Case Name:**Register Patient Details |
| **Description:** | This use case allows the operator to fill the required details in the registration form as given by the patient. | |
| **Actors:** | Operator | |
| **Preconditions:** | The operator should select the registration form to fill the patient details. | |
| **Post conditions:** | The Patient gets the Registration Id. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Patient details has to be filled by the operator for registration 2. Patient is registered and given a specific Registration ID. | |
| **Alternative Courses:** | The details to be entered should be authentic and pertaining to the specified field. If any field is left blank, the Patient is prompted for the missing details. | |
| **Exceptions:** | If any detail is missing, then an error message will be flashed. | |
| **Includes:** | Submit. | |
| **Special Requirements:** | All the mandatory fields are required to be filled. | |

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| --- | --- | --- |
| **Use Case ID:**ADM-20-UC03 | | **Use Case Name:** Fix Appointment |
| **Description:** | This use case allows the Admin to notify the allotted doctor for the patient based on the patient’s disease and the Registration Id. | |
| **Actors:** | Admin | |
| **Preconditions:** | The Admin should get the patients registration Id from the operator. | |
| **Post conditions:** | The Admin should notify the allotted doctor and check for his availability. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Admin notifies the allotted doctor by the operator. 2. He then checks for the availability of the doctor. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | If the Admin doesn’t get the availability of the doctor the appointment slot is postponed. | |
| **Includes:** | Fixing appointment | |
| **Special Requirements:** | Notify the doctor and check for his availability. If the doctor is not available then the appointment slot is postponed. | |
| **Assumptions:** | None | |
| **Notes and Issues:** | None | |

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| --- | --- | --- |
| **Use Case ID:** OPR-20-UC04 | | **Use Case Name:**Generate bill |
| **Description:** | This use case allows the Operator to generate bill for the registration fee, tests a patient undergoes and the doctor’s fee. | |
| **Actors:** | Operator | |
| **Preconditions:** | The Operator should confirm the patient’s presence and his visit details by carefully examining his appointment time and date and the doctor he is asked to visit. He should see the diagnostic reports that patient already has. | |
| **Post conditions:** | The Operator can generate the individual bills for registration, doctor’s fee and diagnostic fee and can further generate the total of all the fee structures. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Operator checks the patient details i.e.; the tests undergone by him. 2. The Operator generates the total bill based on the tests. | |
| **Alternative Courses:** | Actor will have an option to select the mode of payment. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | Operator Page | |
| **Special Requirements:** | None | |
| **Assumptions:** | No delete is allowed for the patient’s test details | |

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| --- | --- | --- |
| **Use Case ID:**OPR-20-UC05 | | **Use Case Name:**Removes Patient Details |
| **Description:** | This use case allows the operator to remove the patient. | |
| **Actors:** | Operator | |
| **Preconditions:** | The operator gets the Patient Id. | |
| **Post conditions:** | Patient is removed | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | The Patient details has to be removed by the operator. | |
| **Alternative Courses:** | The details to be entered should be authentic and pertaining to the specified field. | |
| **Includes:** | Submit. | |
| **Special Requirements:** | All the mandatory fields are required to be filled. | |
| **Notes and Issues:** | None | |

**PATIENT**

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| --- | --- | --- |
| **Use Case ID:**PAT-20-UC01 | | **Use Case Name:**Gets Treatment |
| **Description:** | This use case allows the Patient to get the treatment if his appointment is fixed. | |
| **Actors:** | Patient | |
| **Preconditions:** | The Patient should get the registration Id. | |
| **Post conditions:** | The Patient gets the treatment to his disease. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Patient visits the hospital and registers his details and gets the registration Id. 2. He then books for a particular slot. 3. The admin checks for the availability of the doctor and fixes appointment with the doctor in that specialty. 4. The Patient then gets the treatment. | |
| **Alternative Courses:** | If the doctor is not available then the appointment slot is postponed. | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | Book the appointment slot. | |
| **Special Requirements:** | If the doctor is not available then the appointment slot is postponed or the patient is referred to other doctor of same specialty. | |

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| --- | --- | --- |
| **Use Case ID:**PAT-20-UC02 | | **Use Case Name:** Pays the Bill |
| **Description:** | This use case allows the Patient to pay the Bill | |
| **Actors:** | Patient | |
| **Preconditions:** | The Patient should get the treatment and undergo the tests suggested by the Doctor. | |
| **Post conditions:** | The Patient pays the bill and leaves the hospital. | |
| **Frequency of Use:** | 200/day | |
| **Normal Course of Events:** | 1. The Patient gets the treatment from the doctor and takes the tests. 2. The Patient gets the reports for the tests and pays the bill(for accommodation, registration fee and tests) | |
| **Associated Use case diagrams** |  | |
| **Exceptions:** | None | |
| **Includes:** | Pays the bill and leaves the hospital. | |
| **Special Requirements:** | None | |
| **Assumptions:** | None | |
| **Notes and Issues:** | None | |

# Actor Responsibility Matrix

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sl No | Responsibilities | Actor 1 | Actor 2 | Actor 3 | Actor 4 |
| 1 | Login | Admin | Operator | Doctor |  |
| 2 | Register | Operator |  |  |  |
| 3 | Fix appointment | Operator |  |  |  |
| 4 | View Patient Details | Operator | Doctor |  |  |
| 5 | View Doctor /Operator Details | Admin | Doctor |  |  |
| 6 | Adds Patient details | Operator |  |  |  |
| 7 | Removes Patient | Operator |  |  |  |
| 8 | View appointments | Doctor |  |  |  |
| 9 | Save patient details to database | Admin | Operator |  |  |
| 10 | Save doctor details to database | Admin |  |  |  |
| 11 | Generate the bill | Operator |  |  |  |
| 12 | Patient treatment | Doctor |  |  |  |
| 13 | Takes the treatment from doctor | Patient |  |  |  |
| 14 | Pays the bill | Patient |  |  |  |
| 15 | Logout | Admin | Operator | Doctor |  |

1. Source: The source of the user case [↑](#footnote-ref-1)
2. Need: Essential / Non-essential [↑](#footnote-ref-2)
3. Priority: High, Medium or Low [↑](#footnote-ref-3)
4. Stability: Stable / Unstable [↑](#footnote-ref-4)
5. Verifiability: Verifiable / Not Verifiable [↑](#footnote-ref-5)