**TY. B. Tech.**

**CS 3001: Software Engineering Laboratory**

**Society Management System**

!!br0ken!!***Version 1.0***



|  |  |  |  |
| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | **Gr. No.** | **Name** | **Roles** |
| 02 | **161374** | **Prerona Chaudhuri** | **Analyst** |
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**TY. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No: 1

**Society Management System**

**Project Statement of Work**

***14-08-2017***

!!br0ken!!***Version 1.0***



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**Academic Year: 2018-19 Semester: II**

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# TITLE

**Society Management System** is a tool for automating and managing the manual services provided by a housing society to ensure a hassle free and secured experience to the user.

* 1. This is a system that will provide a digital interface for the manual services provided by a society like accounting, efficiently utilizing the society resources like parking space management along with monitoring visitor management, hence providing security to the user.
  2. In the current scenario societies involve a lot of managerial activities along with access to discussion forum which need to be provided to each user, the system therefore will handle each user impartially and will bring transparency in the activities carried out in the housing society.

# BACKGROUND

Living in society has become more prevalent due to less space. It is convoluted task to maintain residents, vehicles, billings and documents. This task takes up a lot of time and efforts of society committee. The Society Management System will prove to be an effective tool to manage all these tasks which will help the society committee in their work as well as to all users associated with the society.

* 1. The most important and tedious task for housing society committee is to manage the facilities and resources of society to effectively utilize them minimizing overall expenditure.
  2. All users associated with the society, that is the society members including owners, tenants, service providers, brokers etc., can make use of this product. The service will be open to all once the society owns the product.
  3. Earlier the task of monitoring the visitors flow in the society was left to the discretion of security guards, which is more prone to errors.Hence this system will also involve the concerned users apart from the security guards.
  4. The need for this service has been highlighted recently. As most of today’s work is digitized, housing societies are also shifting to digital platforms. And the requirement is maximum unique facilities in minimum budget. So this tool will be of great use in that case.
  5. Continuous track of accounting statistics along with detail expenditure will be kept which will help to take any financial decisions. It will also manage facilities per house.
  6. This product which will be a web based service, will use some third-party websites, payment links to provide all services on single interface. Examples - MAHADISCOM bill payment link, tax payment link etc.

# OBJECTIVE

The objective of this proposal is to provide a tool to which will help in the manual work of society committee. For this a digital interface will be provided which can be used for daily communication related to society’s work. Accounting statistics can be used in future for taking any financial decisions. System will help in security service by managing visitor entry. The system will help to keep record usage of facilities and resources used by user. The system will ensure the transparency and ease in housing society work.

* 1. As a part of this proposal, we hope to achieve development of a system that manages the housing society work provided users’ data and society information.
  2. The system shall be open source and can be used by multiple users.
  3. The system will use third-party websites to provide different payment services.

# DEFINITIONS AND APPLICABLE DOCUMENTS

**Accounting:**

Accounting is the measurement, processing and communication of financial information about economic entities. It is variously been defined as the keeping or preparation of the financial records of an entity, the analysis, verification and reporting of such records. Financial accounting focuses on the reporting of an organization’s financial information, including the preparation of financial statements, to the external users of the information. The terms ‘accounting’ and ‘financial reporting’ are often used as synonyms.

**Visitor Management:**

Managing the visitors in any society is always a challenging and complicated task, which involves generating a notification when a new visitor is entering the society, which needs to be approved by the user (resident, the service taker) and then recording the response in with details like the in time, out time, photo, biometric records and vehicle particulars of the visitor, to ensure proper campus privacy and security. The software will consider two kinds of visitors - one for daily needs and the rest. Visitor management is a very vital function as it helps society management keep a track and monitor the footfall of the society, thereby increasing safety and supervision.

**Communication Forum:**

A communication forum is a digital interface where people can hold conversations in the form of posted messages. The messages are often longer than one line of text, and are at least temporarily archived. Also, depending on the access level of a user or the forum set-up, a posted message will be transferred to the concerned department of the committee in that society, in order to resolve the issue at the earliest. Apart from that this will also involve group chatting facilities like polling system. Any message intended for a group chat might need to be approved by a moderator before it becomes publicly visible. For society management system the communication forum will be used for discussing important issues, circulating notices, conveying important reminders etc.

**Society Catalogue:**

Society Management System uses the information of whole society which is termed as society catalogue. This information includes number of houses/flats, types of houses/flats (1/2/3 BHK, Row House etc.), number of parkings available, other facilities like event hall, club house, children’s play area etc. This information will be used further for generating maintenance bills and managing facilities per user.

**Bill Management:**

The payment of accounts and bills is a very vital part of efficient society governance, and sophisticated housing management software systems handle the payment of water, electricity and rent bills comprehensively. The software will provide a common gateway for the user, so that the former can pay all its bills like electricity, maintenance calculated by accounting section, light bills from the same interface. The software intends to set up reminder and notification for achieving this purpose.

**Documents:**

1. <https://www.softwaresuggest.com/housing-society-apartments-software>
2. <https://www.quora.com/Which-is-the-best-housing-society-management-app-in-India>
3. <http://www.ijera.com/papers/Vol4_issue2/Version%201/CF4201547551.pdf>

# BUSINESS AND TECHNICAL ENVIRONMENT

The System requires the following Business and Technical Environment to successfully commence in the stipulated time and resources.

* 1. The hours of operation will be independent as that of the organisation with weekly feedback given during the reporting time.
     1. The team will work Monday to Friday, 2 hours per day.
* This time will be utilised to work on completing the project documentation which will take up a major role in the initial weeks of the project.
* Later weeks will have more time invested in project planning and implementation with the documents having a lighter format.
* Time will be evenly utilised for Documentation, Planning , Execution, Testing & Debugging.
  + 1. Further work can be completed on weekends depending on the team/member’s convenience.
  1. The system will be delivered as a web engineered product. The system should not utilise a very high specification which will make the system difficult to run on certain systems.
     1. Internet connection will be required for the smooth functioning of the system.
     2. RAM greater than 8GB (Minimum Requirement)
     3. Libraries with open source licenses will be used.
     4. Some third-party websites/payment links will be used.

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# DESCRIPTION AND SCOPE OF WORK

The work that is to be done under **‘Society Management System’** involves multiple steps:

1. Create User Profile.
2. Process Society Catalogue.
3. Generate Accounting Statistics.
4. Create Communication Forum.
5. Demonstrate Visitor Statistics.
6. Manage Facilities per User.

**‘Society Management System’** will be made to provide a digital interface to users for daily work and communication of society. It will analyze the accounting statistics which can be used in future. It will provide a communication forum for notices, discussions, frequent complaints etc. It will provide facility to owner to communicate with other users for the transactions related to selling the house or giving on rent. It will help to manage security system by keeping record of daily visitors. It will be used to send notices and reminders related to maintenance bill, taxes etc. It will also help to manage the facilities in the society like club house, function hall etc. As this system will be used by individual societies, it will not provide facilities like private payment gateway, booking facilities owned by other organizations etc.

The organisation reserves the right to amend the Scope of Work as the situation permits depending on the feasibility and limitations of the scope.

# DELIVERABLES

The system is in the initial stage of development and some of the deliverables may vary as the system continues to develop into a product. Amongst the contract deliverables are the core concepts of the project which will not change in any case. The system will stay true to its vision and the only changes may be seen are the ones in the User Interface.

These are some of the deliverables that team can outlie at this stage of development. Each stage has its own challenges and will be given apt importance by the contractor.

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| --- | --- |
| No. | Details |
| 1 | Statement of Work |
| 2 | Feature Set |
| 3 | SRS Document |
| 4 | Feasibility Study and Project Plan using AGILE |
| 5 | Sprint level planning activity |
| 6 | Sprint Plan and Sprint Design |
| 7 | Software Configuration Management Plan (SCMP) |
| 8 | Sprint Execution |
| 9 | Sprint Review and Sign- offs |

# APPROACH AND METHODOLOGY

* 1. Preparing proper documentation and getting the views of the team and organisation by creating proper SOW, Feature Set Document and SRS Document.
  2. A Feasibility Study will be performed depending on the features discussed between the team and organisation and a Project Plan will be drawn up.
  3. The Project will follow the Agile model and all the necessary steps will be taken as per industry standards.
  4. A Sprint Execution will be carried out in phases to finish the project in the stipulated time, this will be done with the help of a Sprint Design and Plan.
  5. A Software Configuration Management Plan (SCMP) will be presented to ensure consistency of the product's performance, functional, and physical attributes with its requirements, design, and operational information throughout its life.
  6. At the end of each sprint, the team will have produced a coded, tested and usable piece of software.
  7. The System will be reviewed by the concerned organisation and all the issues will be presented to the team.
  8. Upon resolution of these issues a final and formal sign-off will be suggested.

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**CS 3001: Software Engineering Laboratory**

Assignment No: 2

**Society Management System**

**Project Feature Set Description**

***29-08-2017***

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# PROJECT VISION

To provide interface to the users to effectively utilize and manage the resources and facilities in order to ensure a transparent, hassle free and secured experience for the users.

# PROJECT MISSION

The Mission Statement summarises the aim of this project and what it is trying to achieve. This is our Project Mission:

1. The Society Management System is a tool mainly for the people who are associated with a society, like members, brokers, service providers etc., to utilize different facilities provided by the society. The software will be presented to the public in the form of a website or a web-distributed application.
2. The Society Management System will help the society committee to handle and manage flat owners data as well as to manage society funds. It will provide different redirection facilities for payments to user.
3. The software wishes to bring transparency and efficiency in the working of housing societies. The system will keep track of members including tenants, accounting history, visitor records etc. The team has undertaken this project as we are keen to bring our technical viewpoint to make the housing society’s manual work more easier.

# PROJECT SCOPE

**‘Society Management System’** will be made to provide a digital interface to users for daily work and communication of society. It will analyze the accounting statistics which can be used in future. It will provide a communication forum for notices, discussions, frequent complaints etc. It will provide facility to owner to communicate with other users for the transactions related to selling the house or giving on rent. It will help to manage security system by keeping record of daily visitors. It will be used to send notices and reminders related to maintenance bill, taxes etc. It will also help to manage the facilities in the society like club house, function hall etc. As this system will be used by individual societies, it will not provide facilities like private payment gateway, booking facilities owned by other organizations etc.

These are our project goals as defined by the team:

1. Create User Profile.
2. Process Society Catalogue.
3. Generate Accounting Statistics.
4. Create Communication Forum.
5. Demonstrate Visitor Statistics.
6. Manage Facilities per User.

# GOALS

|  |  |  |
| --- | --- | --- |
| Goal-ID | Priority | Factors Addressed |
| 1 | 1 | Create User Profile |
| Target Audience | Society Members , Brokers , Service Providers |
| Driver | To make users profile |
| Description | Populating the whole database with user detail |
| Response | The goal is to acquire data from users associated with the particular society. |
| Open Issues | 1. How to decide the appropriate fields necessary to categorize users? 2. How to identify invalid details provided? 3. How to manage single profile with multiple roles? |

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| Goal 1 Description: | | | | |
| Specific Test | | | | |
| Is ‘What’ identifiable? | Is the ‘Why’ clear? | Can ‘Who’ be identified? | ‘Where’ will it be performed? | ‘Which’ resources are needed? |
| Collecting data of Users. | To populate the database for managing and providing facilities to the user. | Keeping in mind the user’s convenience | Any Electronic devices which has internet connection and web browser(Desktops, Laptops and Mobiles) - user’s and developer’s | Users are required to fill the details in the registration form. |

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| Goal 1 Description: | | |
| Measurable Test | | |
| Is the end result quantifiable? | ‘Figure’ of Measurement | Has the goal a clear end date/point? |
| It will be a database of all the users associated with the society. | It can be measured on the basis of how effectively we can use this information | Collecting accurate,sufficient and precise information of all the users associated with a particular society is the end point of this goal. |

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| Goal 1 Description: | | | |
| ATTAINABLE Test | | | |
| What is your reaction to goal? | Does it feel realistic? | Is it overwhelming? | Do you find it motivating? |
| This is the fundamental step for the interface to operate. | Data Collection seems to be realistic since the user needs to provide details in order to use the system. | The feasibility is dependent on the performance of the system. | It is motivating since it is the main part of the system. |

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| Goal 1 Description: | | |
| RELEVANT Test | | |
| Does it fit into the overall team / organization objective? | Taking overall fit is the timing appropriate? | Do you have sufficient resources / budget to succeed? |
| The goal will help to deliver hassle free ,transparent and impartial services to the users. | The overall is timing appropriate since providing details is necessary in order to use the system. | Currently the resources in terms of hardware and software are appropriate for maintaining the database. |

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| Goal 1 Description: | | |
| TIME BOUND TEST | | |
| Does it have a clear end date/point? | Is the focus clear so you can create an action plan? | Is its position on an Urgency/Importance grid clear? |
| The user can register on the system ,the end date varies for different types of users. | The focus of this goal is clear: to obtain the details of the user associated with the society. So that this data can be used to operate the system. | This is going to form a base to manage the activities of the society , making it a crucial part of the system. |

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| Goal-ID | Priority | Factors Addressed |
| 2 | 1 | Process Society Catalogue |
| Target Audience |  |
| Driver | To effectively manage and utilize the society’s resources |
| Description | Categorize the society resources |
| Response | The goal is to categorize all the society resources so that they can be used to operate the system |
| Open Issues | 1. Categorizing resources accurately. 2. Collect information of all resources. 3. Update information periodically. |

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| Goal 2 Description: | | | | |
| Specific Test | | | | |
| Is ‘What’ identifiable? | Is the ‘Why’ clear? | Can ‘Who’ be identified? | ‘Where’ will it be performed? | ‘Which’ resources are needed? |
| Categorizing society’s resources | To enable better management of assets of users and provide facilities to the. | This data will be used by the system providing facilities to the users. | Society committee member’s electronic devices(Desktops ,Laptops and Mobiles) | Computer hardware |

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| Goal 2 Description: | | |
| Measurable Test | | |
| Is the end result quantifiable? | ‘Figure’ of Measurement | Has the goal a clear end date/point? |
| The end result is quantifiable since categorizing the resources will provide information on their usage (previous,current and future) | It can be measured on the basis of how many categories are made for the resources | The goal must be accomplished whenever any user registers on the system. |

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| Goal 2 Description: | | | |
| ATTAINABLE Test | | | |
| What is your reaction to goal? | Does it feel realistic? | Is it overwhelming? | Do you find it motivating? |
| This goal is the stepping stone for the system to provide services to the users. | It’s realistic since it considers details of non transient resources. | It is, since this data will provide a statistical view of the society. | It is motivating because  this goal will help to manage the users and their requirements. |

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| Goal 2 Description: | | |
| RELEVANT Test | | |
| Does it fit into the overall team / organization objective? | Taking overall fit is the timing appropriate? | Do you have sufficient resources / budget to succeed? |
| This goal is a very crucial step which helps to achieve the aim of the system. | The timing is appropriate ,taking into consideration that the resources need to be updated on any changes. | The resources we need should be served at the input stage. In terms of hardware and software requirements, team has enough resources |

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| Goal 2 Description: | | |
| TIME BOUND TEST | | |
| Does it have a clear end date/point? | Is the focus clear so you can create an action plan? | Is its position on an Urgency/Importance grid clear? |
| Yes , if the resources are update whenever there is any change. | The focus of this goal to categorize for which it is required to get feedback from the users if we are categorizing properly. | This goal is important in order to provide facilities to the users. |

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| Goal-ID | Priority | Factors Addressed |
| 3 | 2 | Generate Accounting Statistics |
| Target Audience | Customers |
| Driver | To generate monthly bills and reports. |
| Description | Mathematical techniques will be used to manage the |
| Response | The goal is to generate the bills per user ,if applicable for the user. |
| Open Issues | 1. How to avoid discrepancy in manual data provided ? 2. Keep record of all transactions/payments - online as well as offline. |

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| Goal 3 Description: | | | | |
| Specific Test | | | | |
| Is ‘What’ identifiable? | Is the ‘Why’ clear? | Can ‘Who’ be identified? | ‘Where’ will it be performed? | ‘Which’ resources are needed? |
| Applying mathematical and statistical techniques to generate accounting statistics. | To inform the users about their monthly bills and provide an insight of the accounts statistics of the society to the committee members for future use. | The user who is associated with that society. | Society committee member’s desktop | Hardware resources are required along with rules of the society. |

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| Goal 3 Description: | | |
| Measurable Test | | |
| Is the end result quantifiable? | ‘Figure’ of Measurement | Has the goal a clear end date/point? |
| Yes , provided the rules and required information for generating the bills and statistics is acquired . | It can be measured on the basis of ease and transparency that is brought out in generation of bill and its payments, a feedback system will be more helpful. | It will carried out periodically. |

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| Goal 3 Description: | | | |
| ATTAINABLE Test | | | |
| What is your reaction to goal? | Does it feel realistic? | Is it overwhelming? | Do you find it motivating? |
| This goal will help to carry out its major function. | Yes , since all the accounting tasks will be carried out periodically on the machines. | Yes , since generating monthly bills and statistics using mathematical and statistical models will be less error prone . | It is motivating because it is a main part of a system that aims to solve a real-world problem. |

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| Goal 3 Description: | | |
| RELEVANT Test | | |
| Does it fit into the overall team / organization objective? | Taking overall fit is the timing appropriate? | Do you have sufficient resources / budget to succeed? |
| This goal is a crucial step since it will automate the managerial activities of the society. | This goal can be carried out as sprints. | Once the rules for defining different rates are acquired, the required hardware is available with the team. |

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| Goal 3 Description: | | |
| TIME BOUND Test | | |
| Does it have a clear end date/point? | Is the focus clear so you can create an action plan? | Is its position on an Urgency/Importance grid clear? |
| This goal is carried iss out periodically ranging from once a month to once a year. | The focus of this goal is clear : to generate bills per user and providing a gateway to pay the bills. | It is important since its a one of the major features of the system. |

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| Goal-ID | Priority | Factors Addressed |
| 4 | 2 | Create Communication Forum |
| Target Audience | Customers |
| Driver | To provide a way to manage the communication between users. |
| Description | Here any communication will involve only the concerned users rather than everyone leading to lesser chaos. |
| Response | The goal is to categorize any communication and carry out between selected users. |
| Open Issues | 1. How spam messages be avoided? 2. How to educate users on raising their issues/requests under the right sector? 3. How to preprocess the requests? |

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| Goal 4 Description: | | | | |
| Specific Test | | | | |
| Is ‘What’ identifiable? | Is the ‘Why’ clear? | Can ‘Who’ be identified? | ‘Where’ will it be performed? | ‘Which’ resources are needed? |
| Categorizing and managing different forms of communication like complaints, feedback etc. | To build a transparent, faster and less chaotic medium for communication between different categories of users. | The different users who want to raise issues . | It will be performed on client/user machines. | The users’ profiles along with the society catalogue which are collected in the input phase are required along with basic hardware for processing the communication forum. |

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| Goal 4 Description: | | |
| Measurable Test | | |
| Is the end result quantifiable? | ‘Figure’ of Measurement | Has the goal a clear end date/point? |
| It will be development of transparent ,hierarchical and impartial communication forum. | It can be measured on the basis of its capability is addressing the issues and satisfiability of the users. | This goal will be accomplished whenever any user wishes to raise any issue. |

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| Goal 4 Description: | | | |
| ATTAINABLE Test | | | |
| What is your reaction to goal? | Does it feel realistic? | Is it overwhelming? | Do you find it motivating? |
| This will be one of the main goals to be achieved in this system and its unique feature. | Yes, once the various categories are formed, then this goal is realistic. | Its feasibility is dependent on how well the inputs are acquired. | Yes, because this goal will effectively address the issues and will generate statistics for future developments. |

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| Goal 4 Description: | | |
| RELEVANT Test | | |
| Does it fit into the overall team / organization objective? | Taking overall fit is the timing appropriate? | Do you have sufficient resources / budget to succeed? |
| This forms a part of effectively and harmoniously involving the users. | Since this goal needs to be accomplished whenever any issue is raised by the user, hence sprint execution can be adopted. | The resources we need should be acquired from the input phase. In terms of hardware requirements, team has enough resources |

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| Goal 4 Description: | | |
| TIME BOUND TEST | | |
| Does it have a clear end date/point? | Is the focus clear so you can create an action plan? | Is its position on an Urgency/Importance grid clear? |
| The goal should be accomplished within sometime after the user has raised any issue/request. | The focus of this goal is clear: to enable the user to raise issue or request and transfer it to the concerned user. Hence the forward actions need to be taken. | In the initial stages it may seem less urgent ,but it is important whenever any action needs to carried by the users . |

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| Goal-ID | Priority | Factors Addressed |
| 5 | 3 | Demonstrate Visitor Statistics |
| Target Audience | Customers |
| Driver | To manage the security of the society. |
| Description | This goal will let the user allow / disallow a visitor to its residence along with generating statistics for future development. |
| Response | Maintain the security on an individual level along with society level. |
| Open Issues | 1. Identify the feedback or response provided by mistake by the user |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Goal 5 Description: | | | | |
| Specific Test | | | | |
| Is ‘What’ identifiable? | Is the ‘Why’ clear? | Can ‘Who’ be identified? | ‘Where’ will it be performed? | ‘Which’ resources are needed? |
| Allow/Disallow visitors and record the response for generating statistics. | To enable the users to ensure their security along with the society . | Users who are currently residing in the society. | It will be performed on client/user and software engineer’s machines. | The visitor’s profiles ,the type of service , and the user who has requested the service. |

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| Goal 5 Description: | | |
| Measurable Test | | |
| Is the end result quantifiable? | ‘Figure’ of Measurement | Has the goal a clear end date/point? |
| The end result will be a collection of the responses recorded over a period of time. | The figure of measurement is the satisfiability of the user demonstrated by accuracy of the statistics. | The goal completion will go hand in hand with the project completion. |

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| --- | --- | --- | --- |
| Goal 5 Description: | | | |
| ATTAINABLE Test | | | |
| What is your reaction to goal? | Does it feel realistic? | Is it overwhelming? | Do you find it motivating? |
| The goal is achievable because visitors will be granted entry to the society only if the user (resident) will grant. | Yes, because this goal is purely left to the discretion of the residents. | Yes, because to carry out this task the user need not be physically present in the flat, hence can ensure safety of family members as well. | Yes, since from the responses the team will employ machine learning tools to determine any spam visitors. |

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| --- | --- | --- |
| Goal 5 Description: | | |
| RELEVANT Test | | |
| Does it fit into the overall team / organization objective? | Taking overall fit is the timing appropriate? | Do you have sufficient resources / budget to succeed? |
| Yes, this goal aims to accomplish the purpose of maintaining safety of the society. | Generation of statistics per user will be a continuous process and will go hand in hand with the system usage. | Yes, the sufficient data is available and the responses by the users will be acquired as the system is used. |

|  |  |  |
| --- | --- | --- |
| Goal 5 Description: | | |
| TIME BOUND Test | | |
| Does it have a clear end date/point? | Is the focus clear so you can create an action plan? | Is its position on an Urgency/Importance grid clear? |
| This is a continuous process, and it will generate the results whenever required on the basis of responses acquired till then. | The focus is clear: to provide customers the facility of granting access to the visitors and then generating statistics from the same. | Yes, while completion of the project this goal is not currently important , but while usage this turns out to be the most important. |

|  |  |  |
| --- | --- | --- |
| Goal-ID | Priority | Factors Addressed |
| 6 | 2 | Manage Facilities per User |
| Target Audience | Customers |
| Driver | To efficiently and impartially provide facilities to user |
| Description | Depending on the information acquired in the previous goals, grant facilities to a user. |
| Response | Each user will be treated equally since this process will involve minimum human interference. |
| Open Issues | 1. Handle same requests done at the same instant 2. Handle the requests where no committee member is concerned |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Goal 6 Description: | | | | |
| Specific Test | | | | |
| Is ‘What’ identifiable? | Is the ‘Why’ clear? | Can ‘Who’ be identified? | ‘Where’ will it be performed? | ‘Which’ resources are needed? |
| Effective resource management and determining facilities per user which also includes bill management. | To give all users equal access to the facilities and deliver this process transparently ,impartially and faster than when manual. | Users associated with the society. | It will be performed on client/user and software engineer’s machines . | The information collected in the previous goals. |

|  |  |  |
| --- | --- | --- |
| Goal 6 Description: | | |
| Measurable Test | | |
| Is the end result quantifiable? | ‘Figure’ of Measurement | Has the goal a clear end date/point? |
| The end result is effective resource and facility management along with bill payments done on time. | This can be measured by the satisfiability of the users like if they could pay the bills on time and avail the facilities when requested which can be demonstrated as statistics. | The goal has a clear end point but the process will have to be constantly monitored and updated. |

|  |  |  |  |
| --- | --- | --- | --- |
| Goal 6 Description: | | | |
| ATTAINABLE Test | | | |
| What is your reaction to goal? | Does it feel realistic? | Is it overwhelming? | Do you find it motivating? |
| It is achievable with proper resource and facility management. | It is realistic, because we have acquired the required resources. | This goal moves the user away from all the chaos of managing and acquiring facilities as that is managed by the system, and helps the former pay the dues on time. | Yes, as teams need to find out algorithms that will effectively use the resources and manage the facilities per user. |

|  |  |  |
| --- | --- | --- |
| Goal 6 Description: | | |
| RELEVANT Test | | |
| Does it fit into the overall team / organization objective? | Taking overall fit is the timing appropriate? | Do you have sufficient resources / budget to succeed? |
| Yes, since the system aims at automating the managerial tasks of a society and providing a common gateway for bill payment. | The timing is appropriate and this goal can be implemented as sprints. | Yes, we have the required information as well as the necessary hardware along with gateway to third party services like MAHADISCOM. |

|  |  |  |
| --- | --- | --- |
| Goal 6 Description: | | |
| TIME BOUND Test | | |
| Does it have a clear end date/point? | Is the focus clear so you can create an action plan? | Is its position on an Urgency/Importance grid clear? |
| The goal is achieved when we are successfully able to deliver the facilities requested by any user and the user pays the bills before due date. | The focus is clear: to provide customers facilities in a transparent and impartial manner and notify the user to pay the bills and provide a common gateway for the same. | Yes, it is as important as the other goals to be accomplished. |

# FEATURE SET

These are the features that make our product unique.

|  |  |
| --- | --- |
| Feature-ID | Feature Description |
| 1 | **Track of the resources and rules available with the society.** |
| 2 | **Automating the task of generating account statistics.** |
| 3 | **Common gateway of paying all the bills for any user by notifying .** |
| 4 | **Organized communication forum, for faster resolving of issues.** |
| 5 | **Automation of managing facilities for any user bringing out transparency in this process.** |
| 6 | **Allowance of visitors, keeping a track of flow of visitors into the society and flats.** |
| 7 | **Simple and user friendly** |

# STAKEHOLDERS

|  |  |  |  |
| --- | --- | --- | --- |
| Stakeholder | Concerns | Quadrant | Strategy/ Benefits |
| Residents | Getting best service from software | Key Player | Efficient tool for helping manual work of society. |
| Security Companies | Collaborate with system to provide security service to housing society. | Keep Informed | Marketing of their own organisation. |
| Brokers | Concerned regarding vacant flats and tenants. | Minimal Effort | Easy access to information related to real estate. |
| Service Providers | Communicate with society members regarding suitable work. | Minimal Effort | Getting work based on current requirement. |
| Developer | Concerned with accurate and enough information about society to develop the software | Key player | Gather information of all aspects and use it with proper collaboration in order to develop a well organised software. |
| Builder | To include use of digital systems in their future projects | Keep Satisfied | Provide the system for other housing society projects. |

# ACCEPTANCE CRITERIA

1. The system is developed on the information given by a particular society which will be using this system.Its accuracy and effectiveness can be measured by the development of the society and the satisfiability of the users .
2. The Project Manager has set these tasks for achieving successful delivery of the project:
   1. As discussed earlier the objectives of the project have been discussed with the customer and these will be satisfied when delivering the project.
   2. The team’s project manager will review the project before its handing over also an external group will be assigned to check that the team has stayed true to its promises.
   3. Any changes that the customer wishes after the product completion will be addressed in 1-2 weeks of the initial written application by the customer.
   4. The following is a deliverables acceptance document.

|  |  |  |
| --- | --- | --- |
| Item | Concerns | Accepted / Rejected |
| Vision Definition | **Complexity** | **Accepted** |
| Mission Definition | **Relation with Deliverables** | **Accepted** |
| Goals | **Description and structure** | **Accepted** |
| Feature Definitions | **Readability for non-technical stakeholders** | **Accepted** |
| Deliverables definition | **Consistency** | **Accepted** |

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No: 3

**Society Management System**

**System Requirement Specification**

**12-09-2017**

**Version 1.0**



|  |  |  |  |
| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | **Gr. No.** | **Name** | **Roles** |
| 02 | **161374** | **Prerona Chaudhuri** | **Analyst** |
| 03 | **161288** | **Ameya Ekbote** | **Developer** |
| 39 | **172090** | **Zaid Naikwadi** | **Leader** |
| 48 | **161563** | **Apurv Choudhari** | **Designer** |

**Approved By: Dr. M. R. Dube**

**Academic Year: 2018-19 Semester: II**

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# 1. INTRODUCTION

The introduction of the Software Requirements Specification (SRS) provides an overview of the entire SRS with purpose, scope, definitions, acronyms, abbreviations, references and overview of the SRS. The aim of this document is to gather and analyze and give an in-depth insight of the complete **Society Management** software system by defining the problem statement in detail. Nevertheless, it also concentrates on the capabilities required by stakeholders and their needs while defining high-level product features.

|  |  |
| --- | --- |
| Item | Description |
| Purpose | **To jot down the System Requirement Specifications of the Society Management System. The purpose of the SRS to give a complete technical background of our system and its likely implementation.** |
| Audiences | **Developers, Clients and other concerned audiences.** |
| SRS Scope | **This SRS is also aimed at specifying requirements of software to be developed but it can also be applied to assist in the selection of in-house and commercial software products. The standard can be used to create software requirements specifications directly or can be used as a model for defining a organization or project specific standard. It does not identify any specific method, nomenclature or tool for preparing an SRS.** |
| Project Scope | **Primarily, the scope pertains to digitizing the managerial activities of the society including accounting statistics, streamlining the communication amongst different users associated to a society, maintaining security by monitoring visitor flow and efficient usage and management of resources and facilities for each user .** |

**References:**

1. Statement of Work
2. Feature Set
3. Society Management System

# TERMS OF REFERENCE

1. **Background**
   1. Society residents in any part of the globe are always looking for comprehensive and automated solutions that make their life stress-free, easy and happy.
   2. Accounting in society has been a manual task for which people have been employed, which often leads to errors and hence corruption at times .
   3. Often there is a need to have a statistical view of the resources available with the society in order to take any decisions and bring transparency in the process.
   4. Societies demand for softwares that automate this work, manage the facilities for the residents of the society .
   5. The software will help manage end-to-end task management through the click of a button, and previously complicated actions such as payment of utility bills, installments, updating of records, and communication of messages.
   6. The Society Management System will also help monitor the flow of visitors to the society.
2. **Objectives**
   1. The Objective of the project is to effectively manage the resources of the society and manage the facilities for each user .Also perform the manual yet very important task of generating accounting statistics.
   2. Stage-wise objectives.

* Collecting User Data
* Processing Society Catalogue
* Monitoring Visitor flow
* Creating a communication forum for addressing issues /invitations etc.
* Granting facilities to the user by employing effective resource management
  1. Target Audience is
* Flat owners
* Tenants
* Service Providers
* Brokers
  1. Resources required would be clearer along the course of the implementation but the basic necessities include user data, society catalogue, machine learning/mathematical/statistical techniques and UI design.

1. **Issues**
   1. Efficiency – Efficiency of the system to carry out all the tasks of the society.
   2. Relevance – Proving relevance to stakeholders.
   3. Effectiveness – Bringing out transparency ,impartialness and faster way of carrying out the tasks.
   4. Impact – the market is ever growing and the product’s use will never cease to exist.
   5. Sustainability – The project if successful will have wide ranging benefits and will become self-sustainable soon after its initiation.
2. **Methodology**
   1. Data Acquisition, Filtering, Data Mining, Data Analysis, Data Sorting & Classification
   2. Stakeholder involvement at initial and final stages will ensure smooth implementation
   3. The planning and designing phase and implementation phase will each take about 1 month.
   4. The information collection tools to be used throughout the project for monitoring purposes are Media Reports and similar online resources
   5. Data analysis rules

1. **Expertise**

The expertise needed for doing a project defines a set of professional requirements for the individuals and teams involved in project implementation. It will be the basis for team building, including training and skill assessment.

The Expertise section of a Project Terms of Reference template should identify the following:

* 1. The type of work involved in the project is Data Analysis and Machine Learning along with UI development.
  2. The type of skills and abilities required to do project work are Machine Learning in Python, Data Processing, DBMS, UI development,Chat application development,mathematical and statistical techniques etc.
  3. 4 students from T.Y, B. Tech will be involved in the development of the project.
  4. The period of engagement of each team member is about the same, roughly 3 months.
  5. A description of the duties and responsibility per teammate has been provided in earlier documents and will be further described in the succeeding documentation.
  6. The relationship between the team members, including leadership roles are specified in the following table.

|  |  |
| --- | --- |
| Name | Roles |
| Prerona Chaudhuri | Analyst |
| Ameya Ekbote | Developer |
| Zaid Naikwadi | Leader |
| Apurv Choudhari | Designer |

1. **Reporting**

Reports provide valued information about project performance over a certain period. Reporting is a process that starts once a project is launched and continues until the project is completed and its product is handed over. Reporting requirements will define how to write and submit project reports and what information to include. The Reporting Requirements section of a Terms of Reference template should clearly specify the requirements for the reporting process, and might include the details of:

* 1. Table of contents for project reports/ Rules for composing annexes
  2. Report templates/ The language to be used in reports
  3. Computer software programmes to be used/ Submission dates
  4. People responsible for reporting and approving

1. **Work Plan**

A work plan is a kind of strategy that aims to help solve problems throughout a project and boost employee drive and focus. It determines what actions need to be taken to start, implement, and complete the project within a specified time period and under defined budget. It is often used as a general guide for developing a project implementation plan. The Work Plan section of a Project Terms of Reference template should set out the activities and necessary resources required for achieving the project’s results and purpose. It should therefore include a summary of the anticipated work and time schedule, which are based upon the following:

* 1. An analysis of the issues, in terms of the evaluation criteria
  2. The proposed implementation methodology/ The reporting requirements
  3. It will be further covered in the Project Plan document.

# 3. PROBLEM DESCRIPTION

|  |  |
| --- | --- |
| The problem of | Effectively carrying out several tasks of housing society. |
| Affects | Residents(Owners,Tenants) , Service Providers , Brokers |
| The impact of which is | * The current scenario is that there are a lot of tasks in a society * However, manually doing all such tasks involves a lot of labour and is error prone, chaotic and at times involves partiality . * This leads to some users being deprived of facilities and their issues not being addressed. * With the help of this software, members of society will be able to communicate effectively and efficiently their problems. * Status of issues can be tracked towards it’s solution. * All tasks will be carried out with transparency among members of society and managers. * Tasks done by a digital solution is always proved to have an upper hand compared to tasks performed by any manual means for any management. * Managing of records of each tasks will become easy and efficient. * Details and description of various ongoing tasks in society will be published on software and made available for members of society to keep a track. * The maintenance fees paid by society members can be shown on software where exactly their contribution towards society is helping their society towards progress and growth. |
| A successful solution would | * A successful solution will facilitate the maintenance of .a streamlined source of real-time society data that will save time,energy and money * It will help maintain a harmonious environment in the society where everyone will equally participate in any development of the society. * It will help towards growth and prosperity of society where transparency is maintained among every members of society. * Software will be able to harness well being of society by avoiding any quarrels and arguments that usually arises among members of society when work is done manually. * Technology driven society management will help future generations to contribute more towards their environment and society. * Help in managing society better rather than older and manual ways. * Maintain hassle free work of managing all tasks of society and provide transparency. |

|  |  |
| --- | --- |
| For | Housing Society |
| Who | Needs it for transparently, effectively and impartially carrying out the task in a society. |
| The ‘Society Management System’ | is an administrative software |
| That | automates the tasks carried out in the society by involving all the users and catering to its needs. |
| Unlike | Manual administration |
| Our product | Won’t have biases and will not have prejudices. |

For housing societies who need to carry out the tasks transparently, effectively and impartially, the Society Management System is an administrative software that will provide a digital interface for managing manual services provided by a housing society to ensure a hassle free and secured experience to the user. The system will help to handle the services like accounting, efficiently utilizing the society resources like parking space management along with monitoring visitor management, hence providing security to the user. This system will help to keep track of expenditure details, resource usage, visitor entries etc. Unlike the current manual administration, our product won’t have biases, prejudices and will keep record of each and every transactions, updates.

# FUNCTIONAL HIERARCHY

|  |  |  |  |
| --- | --- | --- | --- |
| Goal-ID | 1 | Create User Profile | Description |
| Objective ID | 1 | Process User Registration | |
| Process ID: 1 | Load User Registration form |
| Process ID: 2 | Acquire user registration information |
| Objective ID | 2 | Release Member Control |  |
| Process ID: 1 | Examine member registration profile |
| Process ID: 2 | Launch user profile |

|  |  |  |  |
| --- | --- | --- | --- |
| Goal-ID | 2 | Process Society Catalogue | Description |
| Objective ID | 1 | Acquire Resource Information | |
| Process ID: 1 | Load resource registration form |
| Process ID: 2 | Examine resources |
| Objective ID | 2 | Demonstrate facilities per user |  |
| Process ID: 1 | Acquire various facilities |
| Process ID: 2 | Map facilities per user |

|  |  |  |  |
| --- | --- | --- | --- |
| Goal-ID | 3 | Generate Accounting Statistics | Description |
| Objective ID | 1 | Intimate Maintenance Information | |
| Process ID: 1 | Devise Maintenance Schedule |
| Process ID: 2 | Apply Maintenance Charges |
| Objective ID | 2 | Workout Payments | |
| Process ID: 1 | Estimate Maintenance |
| Process ID: 2 | Apply Maintenance Charges |

|  |  |  |  |
| --- | --- | --- | --- |
| Goal-ID | 4 | Create Communication Forum | Description |
| Objective ID | 1 | Accept User Messages | |
| Process ID: 1 | Acquire available information |
| Process ID: 2 | Categorize users |
| Objective ID | 2 | Recognise User Messages | |
| Process ID: 1 | Load relevant platform for raising issue |
| Process ID: 2 | Transfer request to concerned user |

|  |  |  |  |
| --- | --- | --- | --- |
| Goal-ID | 5 | Demonstrate Visitor Statistics | Description |
| Objective ID | 1 | Recognize visitor | |
| Process ID: 1 | Acquire visitor profile and purpose |
| Process ID: 2 | Record visitor against purpose |
| Objective ID | 2 | Grant Entry to the Visitor | |
| Process ID: 1 | Notify concerned user |
| Process ID: 2 | Record response against visitor |

|  |  |  |  |
| --- | --- | --- | --- |
| Goal-ID | 6 | Manage facilities per user | Description |
| Objective ID | 1 | Understand the facility requested | |
| Process ID: 1 | Check for availability of facility |
| Process ID: 2 | Record result against user |
| Objective ID | 2 | Bill Management | |
| Process ID: 1 | Estimate bills due per user |
| Process ID: 2 | Provide gateway to clear dues |

# USER INTERFACES

5.1 Abbreviated UI, it is the junction between a user and a computer program. An interface is a set of commands or menus through which a user communicates with a program. A command-driven interface is one in which you enter commands. A menu-driven interface is one in which you select command choices from various menus displayed on the screen.

The user interface is one of the most important parts of any program because it determines how easily you can make the program do what you want. A powerful program with a poorly designed user interface has little value. Graphical user interfaces (GUIs) that use windows, icons, and pop-up menus have become standard on personal computers.

GUI is a program interface that takes advantage of the computer's graphics capabilities to make the program easier to use. Well-designed graphical user interfaces can free the user from learning complex command languages. On the other hand, many users find that they work more effectively with a command-driven interface, especially if they already know the command language.

Graphical user interfaces, such as Microsoft Windows and the one used by the Apple Macintosh, feature the following basic components:

* Pointer: A symbol that appears on the display screen and that you move to select objects and commands. Usually, the pointer appears as a small angled arrow. Text -processing applications, however, use an I-beam pointer that is shaped like a capital I.
* Pointing device: A device, such as a mouse or trackball, that enables you to select objects on the display screen.
* Icons: Small pictures that represent commands, files, or windows. By moving the pointer to the icon and pressing a mouse button, you can execute a command or convert the icon into a window. You can also move the icons around the display screen as if they were real objects on your desk.
* Desktop: The area on the display screen where icons are grouped is often referred to as the desktop because the icons are intended to represent real objects on a real desktop.
* Windows: You can divide the screen into different areas. In each window, you can run a different program or display a different file. You can move windows around the display screen, and change their shape and size at will.
* Menus: Most graphical user interfaces let you execute commands by selecting a choice from a menu.

In addition to their visual components, graphical user interfaces also make it easier to move data from one application to another. A true GUI includes standard formats for representing text and graphics. Because the formats are well-defined, different programs that run under a common GUI can share data. This makes it possible, for example, to copy a graph created by a spreadsheet program into a document created by a word processor.

5.2 Characteristics of Successful User Interfaces

* **Clear**: Clarity is the most important element of user interface design. Indeed, the whole purpose of user interface design is to enable people to interact with your system by communicating meaning and function. If people can’t figure out how your application works or where to go on your website they’ll get confused and frustrated.
* **Concise**: Clarity in a user interface is great, however, you should be careful not to fall into the trap of over-clarifying. It is easy to add definitions and explanations, but every time you do that you add mass. Your interface grows. Add too many explanations and your users will have to spend too much time reading through them. Keep things clear but also keep things concise. When you can explain a feature in one sentence instead of three, do it.
* When you can label an item with one word instead of two, do it. Save the valuable time of your users by keeping things concise. Keeping things clear and concise at the same time isn’t easy and takes time and effort to achieve, but the rewards are great.
* **Familiar**: Many designers strive to make their interfaces ‘intuitive’. But what does intuitive really mean? It means something that can be naturally and instinctively understood and comprehended. But how can you make something intuitive? You do it by making it ‘familiar’. Familiar is just that: something which appears like something else you’ve encountered before. When you’re familiar with something, you know how it behaves – you know what to expect. Identify things that are familiar to your users and integrate them into your user interface.
* **Responsive**: Responsive means a couple of things. First of all, responsive means fast. The interface, if not the software behind it, should work fast. Waiting for things to load and using slaggy and slow interfaces is frustrating. Seeing things load quickly, or at the very least, an interface that loads quickly (even if the content is yet to catch up) improves the user experience. Responsive also means the interface provides some form of feedback. The interface should talk back to the user to inform them about what’s happening. Have you pressed that button successfully? How would you know? The button should display a ‘pressed’ state to give that feedback.
* **Consistent**: Consistent interfaces allow users to develop usage patterns – they’ll learn what the different buttons, tabs, icons and other interface elements look like and will recognize them and realize what they do in different contexts. They’ll also learn how certain things work, and will be able to work out how to operate new features quicker, extrapolating from those previous experiences.
* **Attractive**: This one may be a little controversial but I believe a good interface should be attractive. Attractive in a sense that it makes the use of that interface enjoyable. Yes, you can make your UI simple, easy to use, efficient and responsive, and it will do its job well – but if you can go that extra step further and make it attractive, then you will make the experience of using that interface truly satisfying. When your software is pleasant to use, your customers or staff will not simply be using it – they’ll look forward to using it. There are of course many different types of software and websites, all produced for different markets and audiences. What looks ‘good’ for any one particular audience will vary. This means that you should fashion the look and feel of your interface for your audience. Also, aesthetics should be used in moderation and to reinforce function. Adding a level of polish to the interface is different to loading it with superfluous eye-candy.
* **Efficient**: A user interface is the vehicle that takes you places. Those places are the different functions of the software application or website. A good interface should allow you to perform those functions faster and with less effort. Now, ‘efficient’ sounds like a fairly vague attribute – if you combine all of the other things on this list, surely the interface will end up being efficient? Almost, but not quite. What you really need to do to make an interface efficient is to figure out what exactly the user is trying to achieve, and then let them do exactly that without any fuss. You have to identify how your application should ‘work’ – what functions does it need to have, what are the goals you’re trying to achieve? Implement an interface that lets people easily accomplish what they want instead of simply implementing access to a list of features.
* **Forgiving**: Nobody is perfect, and people are bound to make mistakes when using your software or website. How well you can handle those mistakes will be an important indicator of your software’s quality. Don’t punish the user – build a forgiving interface to remedy issues that come up. A forgiving interface is one that can save your users from costly mistakes.
* For example, if someone deletes an important piece of information, can they easily retrieve it or undo this action? When someone navigates to a broken or non-existent page on your website, what do they see? Are they greeted with a cryptic error or do they get a helpful list of alternative destinations?

|  |  |  |  |
| --- | --- | --- | --- |
| UI-ID | UI Name | Type | Scope |
| 1 | User Input Form | Input | User provides details through this form. |
| 2 | Login Page | Input | Allows the user to login into the system |
| 3 | Main Page | Menu | Users can navigate to different parts of the website using the main page. |
| 4 | Navigation Bar | Navigation | It will appear on each page from where users can switch to any option. |
| 5 | Categorize Users | Command | Generates profile for the user including the facilities the user can access. |
| 6 | Payment Gateway | Navigation | Connects to the third party websites. |
| 7 | Resource Collector | Input | Acquire the resources (including facilities ) within a society. |
| 8 | Rule Collector | Input | Acquire the rules (Accounting ,etc.) that the society abides by. |
| 9 | Display Resources | Navigation | The resources of the society will be demonstrated by taking help of graphs. |
| 10 | Generate Maintenance Charges | Command | Responsible for generating the maintenance charges. |
| 11 | Visualise Maintenance | Command | Responsible for devising maintenance schedule and applying the maintenance charges. |
| 12 | Bill Management | Command | Periodically notify a user and provide a common payment gateway to clear dues on time. |
| 13 | Communication Gateway | Navigation | Connects to third party communication services |
| 14 | Notify users | Command | Allows the user to communicate with information to multiple users |
| 15 | Communication Forum | Form | A platform where user can communicate with each other. |
| 16 | Process Communication Requests | Command | Identifies the request and transfers it accordingly. |
| 17 | User Availability | NL | Checks the current availability of the user |
| 18 | Allow Visitor | Command | Allow/disallow the visitor entering the society . |
| 19 | Generate Visitor Statistics | Graphs | Visualize the visitor statistics in order to identify spam visitors . |
| 20 | Create Request | Form | The user creates a request under the certain category. |
| 21 | Respond to Request | Form | The user responds to the request by accepting/rejecting or by taking appropriate actions(physically). |
| 22 | Avail Facility | Form | The user avails the facilities that apply to the former. |
| 23 | Value Feedback | NL | The form will collect feedback from users to know about their satisfaction regarding the system. |
| 24 | Feedback Analysis | Input | The Feedback will be analysed to improve the functions delivered by the system. |

# HARDWARE INTERFACES

|  |  |
| --- | --- |
| Profile | Description (minimum requirements) |
| Processor | **Intel 5th Generation** |
| RAM | **8 GB RAM** |
| Server-Side Technology | * **Database storage space: 1 GB** * **Monitor of resolution 1024 x 768** |
| Client-Side Technology | * **Monitor of resolution 1024 x 768** * **Working Internet Connection and Port** |
| External Devices | * **Monitor** * **Mouse** * **Keyboard** |

# SOFTWARE INTERFACES

|  |  |
| --- | --- |
| Profile | Description |
| Front-end Capabilities | **Browser, HTML 5 support** |
| Back-end Capabilities | **PHP** |
| Programming Languages | **Python, PHP** |
| Operating Environment | **Any** |
| Software Platform | **Browser** |
| Database Servers | **MySQL** |
| Framework Resources | **NA** |
| API (If Any) | **NA** |
| Other Services/Resources | **Third party websites** |
| Communication Interfaces | **HTML 5 support , Email** |

# LOGICAL DATABASES

|  |  |  |
| --- | --- | --- |
| Database Name | Parameter | Scope |
| User Details | Basic Details of user | Input Data |
| Rules | Rules that the society abides by | Input Data |
| Resources | Resources present within the society | Input Data |
| Facilities per user | Deciding access to facilities for user | Calculated Data |
| Accounts | Generate accounting charges to be paid | Calculated Data |
| Services | Services available | Output Data |
| Communication History | The communication consisting of requests , notices etc. | Updatable record |
| Visitor History | Whether particular visitors were allowed or not. | Updatable record |

# NON-FUNCTIONAL REQUIREMENTS

* Reliability: Specify the factors required to establish the required reliability of the software system at time of delivery. If you have MTBF requirements, express them here. This doesn’t refer to just having a program that does not crash. This has a specific engineering meaning.
* Availability: Specify the factors required to guarantee a defined availability level for the entire system such as checkpoint, recovery, and restart. This is somewhat related to reliability. Some systems run only infrequently on-demand (like MS Word). Some systems have to run 24/7 (like an e-commerce web site). The required availability will greatly impact the design. What are the requirements for system recovery from a failure? “The system shall allow users to restart the application after failure with the loss of at most 12 characters of input”.
* Security: Specify the factors that would protect the software from accidental or malicious access, use, modification, destruction, or disclosure. Specific requirements in this area could include the need to:
  + Utilize certain cryptographic techniques
  + Keep specific log or history data sets
  + Assign certain functions to different modules
  + Restrict communications between some areas of the program
  + Check data integrity for critical variables
* Maintainability: Specify attributes of software that relate to the ease of maintenance of the software itself. There may be some requirement for certain modularity, interfaces, complexity, etc. Requirements should not be placed here just because they are thought to be good design practices. If someone else will maintain the system
* Portability: Specify attributes of software that relate to the ease of porting the software to other host machines and/or operating systems. This may include:
  + Percentage of components with host-dependent code
  + Percentage of code that is host dependent
  + Use of a proven portable language
  + Use of a particular compiler or language subset
  + Use of a particular operating system
* Correctness - extent to which program satisfies specifications, fulfills user’s mission objectives
* Efficiency - amount of computing resources and code required to perform function
* Flexibility - effort needed to modify operational program
* Interoperability - effort needed to couple one system with another
* Reliability - extent to which program performs with required precision
* Reusability - extent to which it can be reused in another application
* Testability - effort needed to test to ensure performs as intended
* Usability - effort required to learn, operate, prepare input, and interpret output

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Characteristic** | **H/M/L** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** |
| 1 | Correctness | H |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Efficiency | M |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | Flexibility | L |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Integrity/Security | H |  |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Interoperability | L |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | Maintainability | M |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 | Portability | L |  |  |  |  |  |  |  |  |  |  |  |  |
| 8 | Reliability | M |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | Reusability | L |  |  |  |  |  |  |  |  |  |  |  |  |
| 10 | Testability | M |  |  |  |  |  |  |  |  |  |  |  |  |
| 11 | Usability | H |  |  |  |  |  |  |  |  |  |  |  |  |
| 12 | Availability | H |  |  |  | 4 |  |  |  |  |  |  |  |  |

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No: 4

**Society Management System**

**Feasibility Study Report**

**19-09-2017**

**Version 1.0**



|  |  |  |  |
| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | **Gr. No.** | **Name** | **Roles** |
| 02 | **161374** | **Prerona Chaudhuri** | **Analyst** |
| 03 | **161288** | **Ameya Ekbote** | **Developer** |
| 39 | **172090** | **Zaid Naikwadi** | **Leader** |
| 48 | **161563** | **Apurv Choudhari** | **Designer** |

**Approved By: Dr M. R. Dube**

**Academic Year: 2018-19 Semester: II**

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# INTRODUCTION

|  |  |
| --- | --- |
| Item | Description |
| Scope of Study | 1. Acquire users’ information and society information. 2. Provide digital interface for accounting, communication etc. 3. Provide single interface for house related different payments. 4. Manage facilities per user as well as visitor entries. |
| Audiences | 1. Society member including tenants. 2. Service provides, brokers. 3. Visitors |
| Project Type | Medium Scale |
| Platform Details | Existing Domain Platforms   1. ADDA 2. Society123   Existing Technology Usage  Front End –   1. HTML 2. CSS 3. PHP   Back End –   1. MySQL 2. MongoDB 3. Python |

# DESCRIPTION OF SERVICES

|  |  |  |  |
| --- | --- | --- | --- |
| Service -ID | Service Name | Audience | Scope |
| S-1 | Acquire User Information | User | Detailed information about user. |
| S-2 | Acquire Society Information | Stakeholder | Detailed information about the society. |
| S-3 | Accounting Statistics | Stakeholder | Generate accounting statistics. |
| S-4 | Communication Forum | User | Digital interface for discussions, notices. |
| S-5 | Manage Visitors’ Entry | End User | Visitors are allowed/disallowed based on history and owner’s permission. |
| S-6 | Manage Facilities per User | User | Grant facilities to user based on collected data. |

# TECHNOLOGY CONSIDERATIONS

|  |  |  |
| --- | --- | --- |
| Current Technology | | |
| Type | **Parameter** | **Description** |
| Hardware | CPU | Intel Xeon E2630 v4 – 10 core processor, 2.2 GHz with Turbo boost up to 3.1 GHz |
| RAM | 16GB |
| GPU | GeForce GTX 1060 (For tensor Flow) |
| Software | IDE’s | Visual Studio 17, Jupyter, PHPmyadmin |
| Local Server | XAMPP (PHP) |
| Browser | Mozilla or Chrome |

|  |  |  |
| --- | --- | --- |
| Deployment Technology | | |
| Type | **Parameter** | **Description** |
| Software | Browser | Mozilla or Chrome |
| Support | HTML5, CSS, BOOTSTRAP, JavaScript, jQuery |
| Hardware | Device | Desktop, Laptop, Tablet, Mobile |
| Screen | Screen with minimum 1024×576 resolution |

# FEASIBILITY STUDY RESULTS

|  |  |  |  |
| --- | --- | --- | --- |
| Option | Outcome | Ranking | Discussion |
| Collect User Information | Expected | H | User will provide all the required information. |
| Unexpected | L | User information isn’t available. This is unlikely since user has to provide necessary information while registering. |
| Collect Society Information | Expected | H | Society information will be available. |
| Unexpected | L | Society information is not available. This will not happen as the customer using this tool will be the member of society committee and will have the whole information of society. |
| Generate Accounting Statistics | Expected | H | Continuous track of expenditure and other financial things will kept. |
| Unexpected | L | Financial information is not available. This will not happen as record of every transaction and each expenditure will be available. |
| Manage Communication Forum | Expected | M | Notices will be circulated. The interface will be useful for important discussions. |
| Unexpected | L | Notices or some other important messages can get spammed in discussions or can get ignored by someone. |
| Manage Visitors’ Entry | Expected | H | Visitors will be allowed only on the permission of owner. Each entry record will be stored for further use. |
| Unexpected | L | Suspicious Visitor is allowed or someone having permission is not allowed to enter. |
| Manage Facilities per User | Expected | M | Usage of facilities and resources will be recorded. |
| Unexpected | L | Partial usage of facilities and resources. |

# 

# REFERENCES

1. Statement of Work
2. Feature Set
3. System Requirement Specifications
4. Society Management Softwares Comparison
5. softwaresuggest.com
6. apartmentadda.com
7. eapartment.in

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No: 5

**Society Management System**

**Project Plan Outline**

**25-09-2017**

**Version 1.1**



|  |  |  |  |
| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | **Gr. No.** | **Name** | **Roles** |
| 02 | **161374** | **Prerona Chaudhuri** | **Analyst** |
| 03 | **161288** | **Ameya Ekbote** | **Developer** |
| 39 | **172090** | **Zaid Naikwadi** | **Leader** |
| 48 | **161563** | **Apurv Choudhari** | **Designer** |

**Approved By: Dr M. R. Dube**

**Academic Year: 2018-19 Semester: I**

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# INTRODUCTION

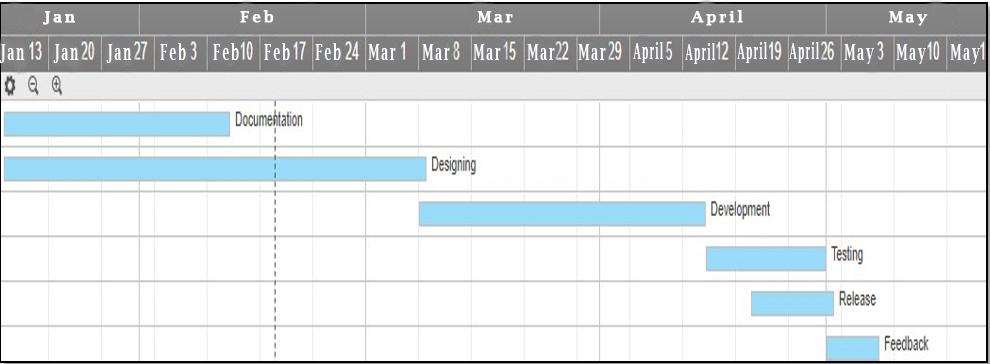
|  |  |
| --- | --- |
| Deliverables | Benefits |
| 1. SOW | Gives an idea of what the system is. |
| 2. Feature Set | Provides the set of features the system will provide. |
| 3. SRS | Specifies the requirements for the system. |
| 4. Feasibility Study | Gives an account of how feasible it is to use the system. |
| 5. Project Plan | Will provide information on how the project will be executed. |
| 6. Sprint Level Planning Activity | Planning will help in easy execution of the system. |
| 7. Sprint Level Design Activity | Preparing the design will make the implementation faster because a blueprint will be available. |
| 8. Software Configuration Management Plan | It will make the execution of the software much easier as there is a plan in place. |
| 9. Sprint Execution | The system will be available to use as early as possible. |
| 10. Sprint Review | Fast review of the system so that so that errors can be removed as early as possible. |

# PROJECT MILESTONES

|  |  |  |
| --- | --- | --- |
| Milestones | Phase | Description |
| 1 | Inception | Delivering Statement of Work document |
| 2 | Inception | Delivering Feature Set document |
| 3 | Elaboration | Feasibility study and Project Plan using AGILE |
| 4 | Elaboration | Sprint level planning activity |
| 5 | Construction | Sprint Plan and Sprint Design |
| 6 | Construction | Software Configuration Management Plan (SCMP) and Sprint Execution |
| 7 | Transition | Sprint Review and Sign- offs |
| 8 | Transition | Feedback |

# WORK BREAKDOWN STRUCTURE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| WBS ID | WBS Package | Role | Description | Delivery Date |
| 1 | Documentation | Inception | Creation of SOW, FRS, SRS | Feb 10 |
| 2 | Designing | Elaboration | Making Prototypes | Mar 8 |
| 3 | Development | Construction | Development of Real System using appropriate languages | April 12 |
| 4 | Testing | Construction | Testing of System for Defects and checking for correctness | April 26 |
| 5 | Product Release | Transition | Marketing, Managing of the System in live environment | April 28 |
| 6 | Feedback | Transition | Taking user experience as feedback and modifying System | May 3 |

**GANTT CHART**

# PROJECT COMMUNICATION

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Communication Type | Description | Frequency | Format | Participants/ Distribution | Deliverable | Owner |
| Weekly Status Report | Email summary of project status | Weekly | In Person | Project Guide,  Project Team | Status Report | Project Manager |
| Weekly Project Team Meeting | Meeting to review action register and status | Weekly | In Person | Project Team | Updated Action Register | Project Manager |
| Project Monthly Review (PMR) | Present metrics and status to team and sponsor | As Needed | In Person | Project Guide, Team, and Stakeholders | Status and Metric Presentation | Project Manager |
| Project Gate Reviews | Present closeout of project phases and kick-off next phase | As Needed | In Person | Project Sponsor, Team and Stakeholders | Phase completion report and phase kick-off | Project Manager |
| Technical Design Review | Review of any technical designs or work associated with the project | As Needed | In Person | Project Team | Technical Design Package | Project Manager |

# ACTIVITY REGISTER

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Activity Number** | **Activity Name** | **Activity description** | **Responsibility** | **Comments** |
| 1 | Prepare  Documentation | * Create Project Initiation Documents | * Prerona Chaudhuri is responsible for coordinating with the team. | * Meet Deadlines |
| * Documents: SOW, Feature Set and SRS | * WBS Package 1 |
| 2 | Conceptualise Design | * Evaluate Feasibility | * Ameya Ekbote is responsible for execution of project planning phase. | * Quick Execution Required |
| * Develop Project Plan | * WBS Package 2 |
| 3 | Collect Data | * Acquire Data from Sources on the Internet | * Apurv Choudhari is responsible for acquiring correct data | * WBS Package 2 |
| * Important phase for smoot development |
| 4 | Developing System | * Develop Machine Learning Model | * Prerona Chaudhuri is responsible for delegating everyone with instructions for development. | * Development in Sprints |
| * Implement Model to Predict Values | * WBS Package 3 |
| 5 | Design UI | * Create User Interface | * Zaid Naikwadi will oversee the UI creation activity. | * WBS package3 |
| * Design UI to appropriately display the statistics | * The phase execution will have to run parallelly with development stage |
| 6 | Checking for bugs | * Unit and System Testing | * Ameya Ekbote will be in charge of creating test cases and checking for bugs | * Preparing Test Cases * WBS Package 4 |
| * Debugging |
| 7 | Releasing Product | * Advertising System | * Zaid Naikwadi will be responsible for the marketing of the product. * Apurv Choudhari will also share the responsibility. | * Good Marketing Strategies * WBS Package 4 |
| * Finding Clients |
| 8 | Feedback of System | * Taking reviews from customers * Implementing new features | * Prerona Chaudhuri will oversee the feedback and update activities. | * Understanding what changes are needed * WBS Package 6 |

# TASKS PRIORITIZATION

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ***Task is of high importance, with high urgency factor.***  *Must be done today & to high standard.*  *Action ASAP* |  | ***High Importance*** | ***Low Importance*** | ***Task is of low importance, with high urgency factor.***  *These tasks need to be completed on time.*  *ONLY spend sufficient time on them as not important.*  *Don’t be diverted* |
| ***High Urgency*** | 1. **Acquire User Information** 2. **Acquire Society Information** 3. **Initiation Documentation** 4. **Decide criterias for Accounting Management** 5. **Create Project Repository** | 1. **Study Features need to be included** 2. **Study Similar Projects** 3. **Study Legality Issues** |
| ***Task is of high importance, but has low urgency factor.***  *By nature long-term so need to:*   1. *Set target if none exists.* 2. *Break-up into chunks of work* | ***Low Urgency*** | 1. **Create UI** 2. **Generate Accounting Statistics** 3. **Manage Communication Forum** 4. **Manage Visitors’ Entry** | 1. **Manage facilities per User** 2. **Provide payment links** | ***Task is both low in importance & urgency.***  *Discard as many of these tasks as possible because they cause great harm to your productivity.*  *Delegate if they develop another’s KSA’s.* |

# RISK REGISTER

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** | **Risk Description** | **Likely Cause of Risk Occurring** | **Effect on Project** | **Phase Affected** | ***Severity Level*** | **Ability to Detect** | **Risk Rank** |
| **1** | **Invalid User Information** | 1. **Entered Wrong Information** | **May Generate Wrong Data** | **Construction** | **High** | **Moderate** | **Serious** |
| **2** | **Ambiguous User Profiles** | 1. **User Having More than One Role** | **Ambiguity in Profile Generation** | **Construction** | ***Med*** | **Easy** | **Modest** |
| **3** | **Restricted Access to Some Facilities** | 1. **Access Based on User Type** | **All Users Won’t be Able to Use Each Resource** | **Transition** | ***Med*** | **Moderate** | **Serious** |
| **4** | **Contact Flat Member To Allow Each New Visitor** | 1. **Visitor Record Not Available** | **Security Guards Can’t Take Decision Without Concerning to Member** | **Transition** | ***Med*** | **Easy** | **Modest** |
| **5** | **Complaint/Issue Not Solved** | 1. **Complaint Not Reached to Concerned Section** 2. **Common Issue Got Spammed Due to Other Messages** | **Failure to Solve Complaints/Issues** | **Transition** | ***Med*** | **Moderate** | **Serious** |
| **6** | **Partial/Biased Usage of Resources** | 1. **Access granted based on user type and other conditions** | **Biased treatment** | **Transition** | ***Med*** | **Moderate** | **Modest** |

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No: 6

**Society Management System**

**Project Backlog**

**07-11-2017**

**Version 1.0**



|  |  |  |  |
| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | Gr. No. | Name | Roles |
| 02 | **161374** | **Prerona Chaudhuri** | **Analyst** |
| 03 | **161288** | **Ameya Ekbote** | **Developer** |
| 39 | **172090** | **Zaid Naikwadi** | **Leader** |
| 48 | **161563** | **Apurv Choudhari** | **Designer** |

**Approved By: Dr M. R. Dube**

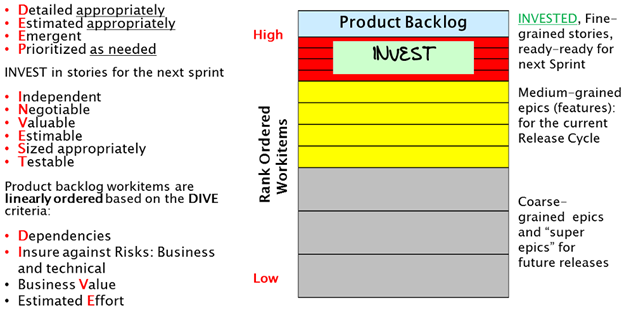
**Academic Year: 2018-19 Semester: I**

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# INTRODUCTION

*A product backlog stores, organizes and manages all work items that you plan to work on in the future. The key characteristics of a well-organized and managed product backlog are summarized in the image below. DEEP, INVEST and DIVE are meaningful words.*



*Figure 1: Characteristics of a Managed Product Backlog*

*The* ***granularity*** *or size of work items should be determined based on how far into the future you are planning a product, i.e., the planning horizon. It is the observation that the longer or shorter the planning horizon, the larger or smaller the work items. This makes sense as it takes a lot more effort to develop, specify and maintain a large number of small-grain work items compared to developing, specifying and maintaining a small number of large-grain work items. Smaller work items, stories, are typically developed by breaking down larger work items, epics. Stories are the unit of software design, development and value delivery.*

***DEEP product backlog***

*A product backlog may have several hundred or more work items, hence the acronym DEEP. Work items can be comprised of stories, defects and test sets. DEEP is acronym capturing the essence of the logical structure of product backlog.*

* ***Detailed appropriately****: Work-items in the backlog are specified at an appropriate level of detail.*
* ***Estimated appropriately****: Work-items in the product backlog are estimated appropriately.*
* ***Emergent****: Product backlog is not frozen or static; it evolves or emerges on an on-going basis in response to product feedback, and changes in competitive, market and business. New backlog items are added, existing items are groomed (revised, refined, elaborated) or deleted or re-prioritized.*
* ***Prioritized as needed****: Work-items in the backlog are linearly rank-ordered as needed.*

# 2. SPRINT PLANNING AND WORK-ITEM GRANURALITY

*If the planning horizon is the next, i.e., upcoming sprint or iteration (typically 2 to 4 weeks), each Work-items is small enough to fit in a single sprint, and is 100% ready (“ready-ready”) to be worked on, as indicated in Figure 1 – see the top red-color region. A ready-ready story has already been analyzed with clear definition (User Role, Functionality, and Business Value) and associated Acceptance Criteria. Work-items planned for the next sprint are stories, defects and test sets. The Work-items in the next sprint have the highest rank order compared to Work-items in later sprints or later release cycles. I will soon explain how this rank ordering is done.*

*The rank order information is used to decide the order in which the team will undertake work on Work-items in a sprint backlog, and also decide which incomplete Work-items to push out to the release or product backlog at the end of a sprint time-box.*

*Work-items in the next sprint collectively satisfy the well-known INVEST criteria; it is a meaningful English word, as well as an interesting acronym coined by Bill Wake. Its letters represent important characteristics of Work-items in the next sprint backlog. Stories in the next sprint backlog should be:*

* ***Independent of each other****: At the specification level stories are independent; they offer distinctly different functionality and don’t overlap. Moreover, at the implementation level these stories should also be as independent of each other as possible. However, sometimes certain implementation-level dependencies may be unavoidable.*
* ***Negotiable****: Stories in the next sprint are always subject to negotiations and clarifications among product owner (business proxy) and the members of agile development team.*
* ***Valuable****: Each story for the next sprint offers clear value or benefit to either external users or customers (outside the development team), or to the team itself, or to a stakeholder. For most products and projects, most stories offer value to external users or customers.*
* ***Estimable****: From the specification of story itself, an agile team should be able to estimate the effort needed to implement the story; this estimate is in relative size terms (story points), and optionally, it can also be in time units (such as ideal staff-hours or staff-days for the whole team). Thus, stories are estimated in story points, and also often in ideal time units.*
* ***Sized Appropriately****: A simpler interpretation of this criterion is that each story is Small enough to be completed and delivered in a single sprint. The letter “S” can be taken to mean Sized Appropriately; specifically, each story should take no more than N/4 staff-weeks of team effort for an N-week long sprint. Thus, for a 2-week sprint, each story should take no more than 2/4 staff-week = 0.5 staff-week = 20 staff-hours of effort. A story substantially larger than 20 staff-hours of total effort should be treated as an epic and be broken down into smaller stories. For a 4-week sprint, each story should take no more than 4/4 staff-week = 1 staff-week = 40 staff-hours of effort. If a sprint backlog has a mix of stories that are small, medium or large size stories (their average far exceeds N/4 staff-weeks), the average cycle time across all stories will increase dramatically reducing the team velocity.*
* ***Testable****: Each story specification is very clear to be able to develop all test cases from its acceptance criteria (which is part of the specification).*

*Stories may be broken down into implementation tasks, such as Analysis, Design, Code Development, Unit Testing, Test Case Development, On-line Help, etc. These tasks need to be SMART:*

* + *S: Specific*
  + *M: Measurable*
  + *A: Achievable*
  + *R: Relevant*
  + *T: Time-boxed (typically small enough to complete in a single day)*

*If a story needs to take no more than N/4 staff-week of team effort (ex. 20 staff-hours for 2-week sprints), all SMART tasks in a story should add up to no more than N/4 staff-week of team effort. If you have 5 tasks, each task on an average should take 4 hours of ideal time effort or less. Stories and its SMART tasks for the next sprint are worth INVESTing in, as the return on that INVESTment is high because they are scheduled to be worked on and delivered as working software in the next sprint itself.*

# 3. RELEASE PLANNING AND WORK GRANURALITY

*If the planning horizon is an upcoming release cycle (typically 8 to 26 weeks, or 2 to 6 months long – consisting of several sprints), Work-items are “medium-grain” as shown in the middle yellow color region of Figure 1. Typically, many of these Work-items are epics; however, they should be still small enough to fit in a release cycle and can be completed over two or more sprints in a release cycle. These epics are typically called features or feature-epics. These feature-epics should still be specified with User Role, Action, Value and Acceptance Criteria formalism that is often used for specifying stories, but now you are capturing a larger functionality represented by a feature-epic. Feature-epics are divided into stories – small enough to fit in a sprint – before the sprint in which a story will be implemented.*

*Over the time horizon of an entire release cycle, INVESTing in stories for an entire release cycle has poor returns, because it takes a lot of effort to ensure that the INVEST criteria is being satisfied correctly for a large number of stories covering an entire release cycle, and those stories are much more likely to change over the release cycle spanning several sprints; so this kind of INVESTment may not yield expected results as stories will very likely change during an entire release cycle after they have been specified.*

***Feature-epics*** *in a release cycle can and should be estimated in relative size terms, but without expending the effort needed to break down all feature-epics in a release cycle into individual stories. This epic-level estimation can be done by comparing relative sizes of epics.*

*It still makes sense to rank order feature-epics in a release cycle to decide which ones will be scheduled in Sprint 1, 2, 3, and so on. However, this assignment may change as each sprint is completed and more information and learning emerge.*

# 4. PRODUCT PLANNING AND WORK-ITEM GRANURALITY

*If the product planning horizon is over multiple release cycles (typically 6 to 24 months) going beyond the current release cycle, Work-items are “****coarse-grain****” as shown in the bottom gray color region of Figure 1. These large epics or super epics require two or more release cycles to complete. These super epics may be described in plain English (bulleted text) or with screen mock-up or video or prototype or with any form of expression suitable to express the intent and value of super epics. These super epics are divided into feature-epics – small enough to fit in a single release cycle – before the release cycle in which that feature-epic will be implemented.*

*Over the time horizon of multiple release cycles, INVESTing in stories has even poorer returns compared to INVESTing in stories for a single release cycle. This kind of INVESTment will not yield expected results as stories are very likely to change over much longer duration of multiple release cycles.*

*Large epics or super epics that need multiple release cycles to be implemented can and should be estimated in relative size terms, but without expending the effort needed to break down large epics into feature-epics, and breaking those, in turn, into stories.*

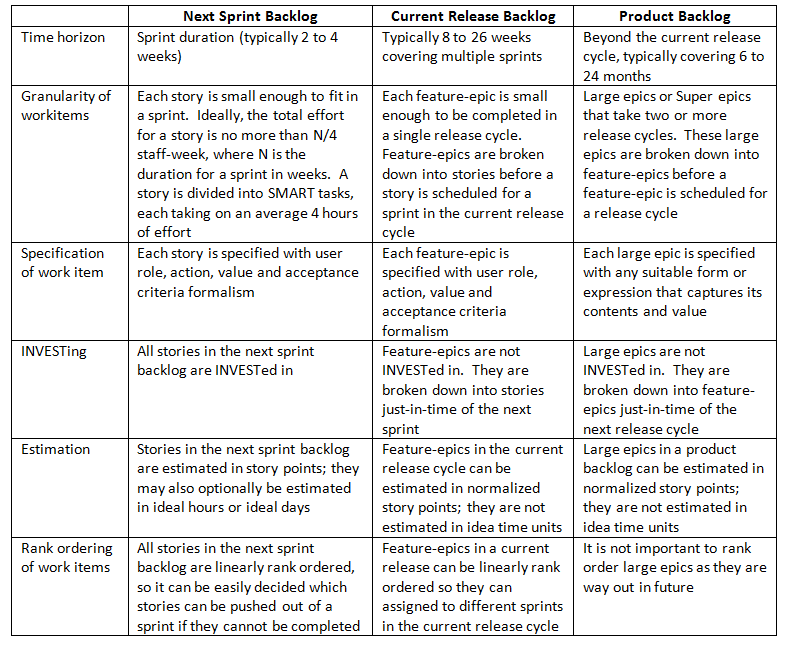
*DIVE the product backlog carefully*

*There is rarely enough time or resources to do everything. Therefore, agile teams must prioritize (rank-order, to be more precise) which stories to focus on and which lowest rank-order stories could be pushed out of scope when close to the end of a sprint. For agile development projects, you should linearly rank-order the backlog, rather than do coarse-grain prioritization where stories and epics are lumped into a small number of priority buckets, such as Low, Medium, High, Critical priorities. Linear rank ordering (i.e., 1, 2, 3, 4 ….n) avoids inflation of priority, keeps everyone honest, and forces decisions on what is really important. It discourages the “kid-in-a-candy-shop” behaviour when the business side clamours that everything is of high-priority or of equal importance.*

*Note that epics and stories are conceptually different, and should not be mixed or aggregated while developing a rank order. An epic rank order is separate from a story rank order.*

*The responsibility of agile rank ordering is shared among all members of a team; however, the rank ordering effort is led by the product owner. Similar to DEEP, INVEST and SMART, DIVE is a meaningful English word, and also an acronym. Product backlog items should be linearly ordered based on the DIVE criteria, which requires careful consideration of all four factors captured in the DIVE acronym:*

* *Dependencies: Even after minimizing the dependencies among stories or epics (which is always a good thing to do), there may still be few unavoidable dependencies and they will have an impact on rank ordering. If Work-item A depends on B, B needs to be rank-ordered higher than A.*
* *Insure against Risks: Business as well as technical risks*
* *Business Value*
* *Estimated Effort*



# 5. PRODUCT BACKLOG: GOALS GRANULARITY

|  |  |
| --- | --- |
| Goal-ID-1 | Create User Profile |
| Purpose | To populate the database for managing and providing facilities to the user. |
| Target Audience | Customers |
| Status | On-going |
| Task Description | 1. Ensure Data Authenticity -R |
|  | 2. Create New User Profile -S |
|  | 3. Authenticate User -R |
|  | 4. Provide Society Membership -S |
|  | 5. Collect User Information -R |
|  | 6. Insert Data Into Database -R |
|  | 7. Validate User Data -R |
|  | 8. Request for Profile Acceptance -R |
|  | 9. Release User Controls -R |
|  | 10. Give Appropriate User Privileges -S |
|  | 11. Secure Database -R |
|  | 12. Fill Appropriate Information -S |
|  | 13. Check for Correctness of Data -S |
|  | 14. Give a Strong Password -S |
|  | 15. Verify Account With OTP -S |
|  | 16 Sign-up With The System -S |

|  |  |
| --- | --- |
| Goal-ID-2 | Process Society Catalogue |
| Purpose | To enable better management of assets of users and provide facilities to the user. |
| Target Audience | Stakeholders |
| Status | On-going |
| Task Description | 1. Provide Assets Management -S |
|  | 2. Manage Assets -R |
|  | 3. Record Which Assets Is Used By Which User -R |
|  | 4. Perform Availability Check -R |
|  | 5. Notify User About Facility -S |
|  | 6. Consider Facility Limitations -R |
|  | 7. Resolve Assets Overlaps -R |
|  | 8. Maintain Past History of Assets -R |
|  | 9. Assign Facility to User -S |
|  | 10. Optimize Resources -R |
|  | 11. Store Data Appropriately -R |
|  | 12. Request for Facility. -S |
|  | 13. Request for Information of Assets -S |
|  | 14. Check Facility Allocation -S |
|  | 15. Request for History of Assets Provided -S |
|  | 16. Release Control Over Assets -S |

|  |  |
| --- | --- |
| Goal-ID-3 | Generate Accounting Statistics |
| Purpose | To inform the users about their monthly bills and provide an insight of the accounts statistics of the society to the committee members for future use. |
| Target Audience | Customers |
| Status | On-going |
| Task Description | 1. Request For Bill Data -R |
|  | 2. Store Current Dues -R |
|  | 3. Generate User Bills -S |
|  | 4. Alert User At End of Each Billing Cycle -S |
|  | 5. Calculate Pending Dues -R |
|  | 6. Provide Options For Payment Mode -S |
|  | 7. Generate Billing Receipts -S |
|  | 8. Handle Payment Errors -R |
|  | 9. Maintain Payment History -R |
|  | 10. Update Successful Transactions -R |
|  | 11. Provide Various Payment Methods -S |
|  | 12. Make Payment for Bill -S |
|  | 13. Select Which Bill to Pay -S |
|  | 14. Apply for Auto-Pay Feature -S |
|  | 15. Auto-Pay Bills -R |
|  | 16. Send SMS to User. -S |

|  |  |
| --- | --- |
| Goal-ID-4 | Create Communication Forum |
| Purpose | To build a transparent, faster and less chaotic medium for communication between different categories of users. |
| Target Audience | Customers |
| Status | On-going |
| Task Description | 1. Provide Communication Facility -S |
|  | 2. Publish New Posts -S |
|  | 3.Provide Efficient Communication Platform -R |
|  | 4. Pin Administrator Notice -S |
|  | 5. Allow Updation Of Posts -R |
|  | 6. Allow Deletion Of Posts -R |
|  | 7. Form Filling By End User -S |
|  | 8. Validating Users Information -R |
|  | 9. Warn User In Case Of Inappropriate Data -R |
|  | 10. Upvote a Post or Complain -S |
|  | 11. Filter Inappropriate Content -R |
|  | 12. Save All Messages With Timestamp -R |
|  | 13. Delete Too Old Posts. -R |
|  | 14. Reply To a Post -S |
|  | 15. Attach Media If Any -S |
|  | 16. Private Message Administrator -S |

|  |  |
| --- | --- |
| Goal-ID-5 | Demonstrate Visitor Statistics |
| Purpose | To enable the users to ensure their security along with the society . |
| Target Audience | Customers |
| Status | On-going |
| Task Description | 1. Check Past History of Visitor -R |
|  | 2. Ask For Owner Permissions -R |
|  | 3. Display Information About Visitor -S |
|  | 4. Accept Or Decline Visit By Visitor -S |
|  | 5. Get Contact Details Of Visitor -R |
|  | 6. Get Permission Of Owner -S |
|  | 7. View Captured Images Of Visitor -S |
|  | 8. Collect Data About Visitor -R |
|  | 9. Search For Past History Of Visitor -R |
|  | 10. Notify The Visitor -S |
|  | 11. Store Captured Images in Database -R |
|  | 12. Alert Watchman -S |
|  | 13. Do Registration Of Visitor -S |
|  | 14. Check for Data Correctness -R |
|  | 15. Keep Track of Free Parking Space -R |
|  | 16. Message Watchman Prior in Case of Known Visitor -S |

|  |  |
| --- | --- |
| Goal-ID-6 | Manage User Facilities |
| Purpose | To give all users equal access to the facilities and deliver this process transparently ,impartially and faster than when manual. |
| Target Audience | Customers |
| Status | On-going |
| Task Description | 1. Request Access For Facility -S |
|  | 2. Notify Administrator -S |
|  | 3. Grant/ Decline Access For Facility -S |
|  | 4. Assignment Of Facility -R |
|  | 5. Ensure Availability Of Facility -R |
|  | 6. Display All Permissions Per Facility -S |
|  | 7. Process Provide facility -S |
|  | 8. Notify User -R |
|  | 9. Warn User Before Expiration Of Facility -R |
|  | 10. Revoke Grant Of Facility -S |
|  | 11. Ensure Overlapping Facility Timings -R |
|  | 12. Forward User Request to Administrator -R |
|  | 13. Cancel Requested Facility -S |
|  | 14. Gain Control Over Facility -S |
|  | 15. Store Each Data With Timestamp -R |
|  | 16. Ensure No Starvation of User -R |

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No: 7

**Society Management System**

**User Story Cards**

**13-11-2017**

**Version 1.0**



|  |  |  |  |
| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | **Gr. No.** | **Name** | **Roles** |
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# INTRODUCTION

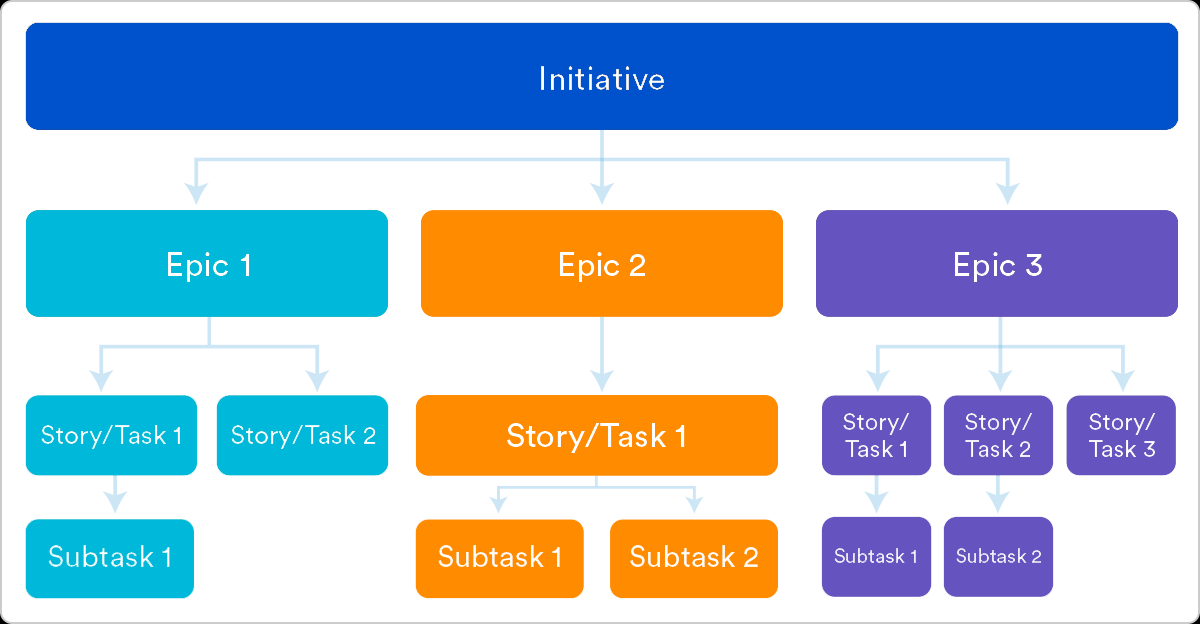
*What does defining customer problems look like in an agile world? The agile manifesto reminds us that we don’t always have to do it the “traditional” way. As product managers, we should be doing whatever is required to tell the story of the customer. Try different things: experiment, explore, then do what works best for you and your team in the context that you might be working in.*

* *If it means you can have several discussions and sketch something on a bit of paper – then do it.*
* *What if you could get everyone (including the customer) in a room and do a user story mapping exercise? If that communicates the problems well, then you don’t need to go much further.*
* *Or what if you can visit the customer and watch them use your product in context? Could you get your engineers and designers to sit next to the customer to listen to and observe their problems?*
* *Instrumenting your product with analytics hooks give you aggregate, concrete data about how customers as a whole are using your product.*
* *Another option would be to grab the product triad (a product manager, engineer and a designer) for a quick stand-up to sketch, discuss and make some quick decisions on the spot.*
* *Need to explore some more? Try running a workshop where you gather key stakeholders and do lots and lots of white-boarding or even paper prototyping to dive deep into understanding the problems you are trying to solve and how you could solve those problems.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Epic** Large body of work, contains stories | **Story** Smallest unit of work, also known as a task | **Version** The release of software to the customer | **Sprint** Iteration where team does the work |

# EPICS AND USER STORIES

*Epics are larger bodies of work that stories roll up into. An epic can span across multiple sprints and versions. Versions are different from epics, because they are a point in time where software is released to the customer. A version might contain multiple epics. Epics help teams create hierarchy and structure. Stories help teams keep track of specific details for the task at hand and can be broken down into sub-tasks.*



* *An* ***epic*** *is a large body of work that can be broken down into a number of smaller stories. For example, performance-related work in a release. An epic can span more than one project, if multiple projects are included in the board to which the epic belongs.*
* *Unlike sprints, epics often change in scope over time as a natural aspect of agile development. Epics are almost always delivered over a set of sprints. As a team learns more about an epic through development and customer feedback, user stories will be added and removed to optimize the team's release time.*
* ***Burndown******charts*** *can also be used to visualize epics, which keep teams motivated and the executive stakeholders informed. A good epic burndown chart shows the agile nature of development. It's clear how the team is progressing as well as where the product owner added and removed user stories. Having these data points clearly visible keeps everyone on the same page and facilitates open conversation about the evolution of the product and completion forecasts. Not to mention that transparency builds trust!*
* *A story or* ***user story*** *is the smallest unit of work in an agile framework. It is a software system requirement that is expressed in a few short sentences, ideally using non-technical language.*
* *The goal of a user story is to deliver a particular value back to the customer. Note that "customers" don't have to be external end users in the traditional sense, they can also be internal customers or colleagues within your organization who depend on your team.*
* ***User stories*** *are a few sentences in simple language that outline the desired outcome. They don't go into detailed requirements.*
* ***Versions*** *are the actual releases of software out to customers. Remember, at the end of each sprint the team should be able to ship the software to customers. Versions are the curated changes the product owner actually ships.*
* ***Versions*** *are often developed over a set of sprints, much like epics. Savvy product owners may choose to deliver an epic over several versions. An epic does not have to be fully contained within a version. By delivering an epic over several versions, the product owner can learn how the market is responding to that epic and make calculated decisions about its future direction rather than doing one giant release.*
* *A* ***sprint*** *is a short period in which the development team implements and delivers a discrete and potentially shippable application increment, e.g. a working milestone version. If you haven't run sprints before, we recommend using a fixed two-week duration for each sprint. It's long enough to get something accomplished, but not so long that the team isn't getting regular feedback.*
* *In* ***scrum****, teams commit to complete a set of user stories during a fixed time period. Generally speaking, sprints are one, two, or four weeks long. It's up to the team to determine the length of a sprint. Once a sprint cadence is determined, the team perpetually operates on that cadence. Fixed length sprints reinforce estimation skills and enable the ability to predict the future* ***velocity*** *for the team once they have the data from several completed sprints.*

*Once a team commits to a set of user stories for the sprint, and the sprint is started, the scrum master is in charge of fending off changes to the user stories. This keeps the team focused and combats "s****cope creep****" (adding work to the sprint after the sprint starts). Adding work mid-sprint compromises the team's ability to forecast and estimate accurately.*

*At the end of each sprint, the team is required to deliver a working piece of software. In scrum, that's called a* ***potentially shippable increment*** *(PSI). The product owner ultimately decides when the PSI gets released to customers, but the work should be complete enough to be suitable for release at the end of the sprint.*

*In agile development,* ***work in progress*** *(WIP) limits set the maximum amount of work that can exist in each status of a workflow. Limiting the amount of work in progress makes it easier to identify inefficiency in a team's workflow. Bottlenecks in a team's delivery pipeline are clearly visible before a situation becomes dire.*

# USER STORIES: GOAL-1: CREATE USER PROFILE

|  |  |  |
| --- | --- | --- |
| **Objective-1** | **Process User Registration** | |
| **Purpose** | The purpose is to acquire User data to enable the system to create User Profile. | |
| **Target Audience** | Committee Member | |
| **Status** | On-going | |
| **Role:** | **As a** Committee Member | |
|  | **I want to** <perform some task> | **so that I can** <achieve some goal> |
| **Task Description** | 1.Request user data | Use it to do further development. |
|  | 2.Find User Data Sources | Build user profiles. |
|  | 3.Create a preliminary database | Store the acquired user data. |
|  | 4.Create a user Data Spyder | Get updated user data. |
|  | 5.Formulate database structure | Start creating profiles. |
|  | 6.Populate User Database | Meet the preliminary objective. |
|  | 7.Generate a backup | Retrieve data in case of loss of files. |
|  | 8.Share backup with Project Team | Expect team to perform assigned tasks. |
|  | 9.Assign database privileges | Monitor the changes made to the database. |
|  | 10.Launch User Profile Page | Fulfil project deliverables. |
|  | 11.Update Database structure | Accommodate credentials in user profiles. |
|  | 12.Create log file | Keep track of changes made. |
|  | 13.Check if data has been already used | Rollback the incorrect data operations. |
|  | 14.Notify committee about the changes | Ensure consistency in system. |
|  | 15.Validate user profile | Keep it safe. |
|  | 16.Verify registered contact details | Receive validated acknowledgements. |

|  |  |  |
| --- | --- | --- |
| Process-1 | Load User Registration Form | |
| Purpose | Create User Registration form for gathering user information | |
| Target Audience | Society Committee | |
| Status | On-going | |
| Role: | **As a**Committee Member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Create platform for accepting user data | Gather user credentials as per my protocol. |
|  | 2.Research user credentials | Make system as accurate as possible. |
|  | 3.Set credentials fields in database | Add user credentials. |
|  | 4.Accept User Profile inputs | Add new User. |
|  | 5.Register User Profiles into database | Store new User. |
|  | 6.Set basic credential requirements. | Create basic profile. |
|  | 7.Populate user credentials | Identify the user. |
|  | 8.Decide appropriate fields in database | Distinguish between types of users easily. |

|  |  |  |
| --- | --- | --- |
| Process-2 | Acquire User Registration Information | |
| Purpose | Collect user credentials for creating user profile which is used to identify the user. | |
| Target Audience | Society Members | |
| Status | On-going | |
| Role: | **As a**Committee Member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Accept data entered by user | Process the data. |
|  | 2.Decide input format | Organize data easily. |
|  | 3.Encapsulate the data | Identify different users. |
|  | 4.Search for invalid data | Identify data abnormalities. |
|  | 5.Investigate searched abnormality | Verify the legitimacy. |
|  | 6.Ask user for valid credentials | Resolve the abnormality issue. |
|  | 7.Correct the found abnormality | Refine the data. |
|  | 8.Commit changes on database | Render the changes to the team. |

|  |  |  |
| --- | --- | --- |
| Objective-2 | Release Member Information | |
| Purpose | To decide the type of user in order to provide access rights | |
| Target Audience | Society Committee | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Organise database attributes | Easily analyse the data. |
|  | 2.Design patterns for attributes | Study the data. |
|  | 3.Conceptualise parameters of particular type | Process of analysing is directed. |
|  | 4.Prioritise the important parameters | Produce accurate results. |
|  | 5.Draw venn diagram for shortlisted attributes | Formalize the observations. |
|  | 6.Organise the parameters | Simplify categorising process |
|  | 7.Record formulated observations | Discuss with the analysis team. |
|  | 8.Correspond with Analysis team | Refine the observations. |
|  | 9.Consolidate outline of categorising process | Systemize procedure. |
|  | 10.Construct final categorising methodology | Begin development process. |
|  | 11.Display user’s current responsibility | Evaluate his performance |
|  | 12.Collect anonymous feedback of user | Compliment/affront the user |
|  | 13.Run background checks | Ascertain data correctness. |
|  | 14.Know the data sources | Trust the system. |
|  | 15.Manage user privileges | Limit user controls. |
|  | 16.Correspond with Analysis team | Refine the observations. |

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| --- | --- | --- |
| Process-1 | Examine Member Registration Profile | |
| Purpose | The purpose is to get accurate,detailed, relevant data about user which is filtered and curated. | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Find a certain user | view user relevant data |
|  | 2.Attain type of the user | report the type. |
|  | 3.Get a curated list of users | distribute the users according to the types. |
|  | 4.Find similar users | make a group of them |
|  | 5.Prioritize users by types | get the member of committee. |
|  | 6.Consider all users with comparable importance | take unbiased decision |
|  | 7.Filter profiles indicating appropriate users | decide capable user. |
|  | 8.Filter profiles indicating appropriate characteristics | find suitable user |

|  |  |  |
| --- | --- | --- |
| Process-2 | Launch User Profile | |
| Purpose | To create user friendly user profile page | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.To decide the template of page | Make it interactive interface |
|  | 2.Research templates | Select appropriate template |
|  | 3.Design GUI | Make it attractive. |
|  | 4.Use sufficient User Data | Optimise the space |
|  | 5.Use unique template for different type of users | Make it unambiguous |
|  | 6.Display sufficient information about user | Make it enough informative |
|  | 7.Keep data updated | Make it accurate |
|  | 8.Delete irrelevant user profiles | Remove redundancy |

# USER STORIES: GOAL-2: Process Society Catalogue

|  |  |  |
| --- | --- | --- |
| Objective-1 | Acquire Resource information | |
| Purpose | To gather accurate, enough information about resources available in society | |
| Target Audience | External Stakeholders | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Create platform to gather information | Take decisions about managing resources. |
|  | 2.Maintain all resources in database | Easily find the resource. |
|  | 3.Extract resource information | Use it for the further development. |
|  | 4.Find information of people associated with resource . | Maintain modules of resource. |
|  | 5.Identify the limitations of resources. | Overcome the inconvenience caused . |
|  | 6.Analyse use of resource | Make decision on the basis of usage. |
|  | 7.Survey market values | Negotiate new contracts and transfer fees. |
|  | 8.Gather information periodically | Assure safe,accurate service |
|  | 9.Establish resource background | Expect transparency. |
|  | 10.Administer information extraction | Put system to good use. |
|  | 11.Update Database structure | Accommodate credentials in user profiles. |
|  | 12.Process registration form | Extract exact information |
|  | 13.Provide contact details of responsible person. | People can contact in emergency. |
|  | 14.Scrutinize Resources | Flawless organization |
|  | 15.Take resource photographs | Identify resources |
|  | 16.Search for inadequate data | Identify missing and null data |

|  |  |  |
| --- | --- | --- |
| Process-1 | Load Resource Registration Form | |
| Purpose | Create Resource Registration form for gathering resource information | |
| Target Audience | External Stakeholders | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1. Create platform for accepting resource data | Gather resource specifications. |
|  | 2. Find interdependent resources | Resolve dependency. |
|  | 3. Set specification fields in database | add resource specifications. |
|  | 4. Check similar users | Decide best way to communicate. |
|  | 5.Accept Resource attribute inputs | add new resource. |
|  | 6. Register Resource into database | store new resource. |
|  | 7.Create log file | keep track of changes made. |
|  | 8. Decide appropriate fields in database | distinguish between types of users easily. |

|  |  |  |
| --- | --- | --- |
| Process-2 | Examine the Resources | |
| Purpose | It will help for optimal management. | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a**society member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1. Collect specifications of resources | Inspect accurately |
|  | 2. Find limitations of resources | Handle constraints related to it. |
|  | 3. Extract resource information | Compile a report. |
|  | 4. survey resource form | Give feedback of resources. |
|  | 5. Schedule the resources | Provide facility to all members. |
|  | 6. Analyse maintenance requirements | Conserve resources. |
|  | 7. Schedule maintenance plan | Maintain resource quality. |
|  | 8. Keep database updated | Carryout operations smoothly. |

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| Objective-2 | Demonstrate Facilities per user | |
| Purpose | To provide facility to every user. | |
| Target Audience | Society Members | |
| Status | On-going | |
| Role: | **As a**Society Member | |
|  | **I want to** *<perform some task>* | **I want to** *<perform some task>* |
| Task Description | 1.Gather user requirements | Manage resource allocation. |
|  | 2.Examine resource requirements per user | distribute facilities. |
|  | 3.Examine resource utilization. | Monitor resource usage. |
|  | 4.Identify shortage of resources | Schedule resources. |
|  | 5.Keep track of resource utilization | Use this information for security purposes. |
|  | 6.Provide details of responsible person | User can carry respective business. |
|  | 7.Perform resource maintenance | To provide quality service. |
|  | 8.Update database | Keep track of details |
|  | 9.Avoid monopolization of resource | Provide fair chance of utilization. |
|  | 10.Record resource usage | Sue for better service. |
|  | 11.Create facility groups according to attribute | Use the grouped data for better statistical model |
|  | 12.Demonstrate facility groups | Usage of groups is ensured |
|  | 13.Update database | Manage efficiently |
|  | 14.Allocate facilities | Enough utilization of facilities |
|  | 15.Provide the rule book regarding resources | Help users to follow the rules |
|  | 16.Provide precise information | Give information about resources. |

|  |  |  |
| --- | --- | --- |
| Process-1 | Acquire various Facilities | |
| Purpose | Accrete details of various facilities | |
| Target Audience | Society Members | |
| Status | On-going | |
| Role: | **As a**Society Member | |
|  | **I want to** *<perform some task>* | **I want to** *<perform some task>* |
| Task Description | 1.Gather facility guidelines | Inform rules and regulations. |
|  | 2.Identify resource attributes | View resource attributes from database. |
|  | 3.Examine attribute-wise data | Extract attribute-wise resources. |
|  | 4.Extract attributes for grouping | Extract attribute-wise resource groups. |
|  | 5.List out all facilities. | To demonstrate facilities. |
|  | 7.List out available facilities | To provide appropriate information. |
|  | 8.Inspect facilities periodically. | To maintain the calibre of facility. |

|  |  |  |
| --- | --- | --- |
| Process-2 | Map the Facilities per user | |
| Purpose | To provide facilities to the user. | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **I want to** *<perform some task>* |
| Task Description | 1.Generate facility details | To use for references. |
|  | 2.Provide facility details to user | Take decisions according to details. |
|  | 3.Generate availability details. | Appoint facility. |
|  | 4.Insert appointment details in database | Store information. |
|  | 5.Inform other members of society. | Keep them notified. |
|  | 6.Take feedback regarding service | Improve service |
|  | 7.Carry out inspection after use | Conserve the facility |
|  | 8.Avoid starvation | Give fair chance to everyone. |

# USER STORIES: GOAL-3: Generate Accounting Statistics

|  |  |  |
| --- | --- | --- |
| Objective-1 | Intimate Maintenance Information | |
| Purpose | Process available accounting information for further use. | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a**Committee Member | |
|  | **I want to** *<perform some task>* | **So that I can** *<achieve some goal>* |
| Task Description | 1.Classify flats by type | Apply maintenance charges to each. |
|  | 2.Get maintenance charges for each flat type | Generate maintenance bill. |
|  | 3.Keep record of common facilities usage | Apply those charges to each flat. |
|  | 4.Classify users as owner or tenant | Apply different maintenance charges to them |
|  | 5.Maintain report of maintenance charges | Check that whoever has not paid it. |
|  | 6.Keep record of parking space per flat | Include charges for parking. |
|  | 7.Distinguish charges in different types of fees | Generate bill for each flat |
|  | 8.Keep record of due dates | Provide discount/charge interest to user. |
|  | 9.Keep previous payment records | Manage previous dues in current bill. |
|  | 10.Find the saving amount for society | Use it further for other purposes. |
|  | 11.Generate receipts for each flat | Have record of each payment. |
|  | 12.Store the details in database | Use it further. |
|  | 13.Keep track of expenditure for different events | Include those charges in maintenance. |
|  | 14.Record staff salary details | Include reserved charges. |
|  | 15.Compare with previous financial years | Take any financial decisions. |
|  | 16.Find average cost per house | Apply charges to each house. |

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| Process-1 | Devise Maintenance Schedule | |
| Purpose | To keep track of accounting information. | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Generate maintenance bills | Collect maintenance charges. |
|  | 2.Keep track of overall expenditure | Study financial status of society. |
|  | 3.Decide due dates | Complete all payments in specific period. |
|  | 4.Distinguish users | Apply associated charges. |
|  | 5.Estimate total maintenance charges | Take any financial decisions according to that. |
|  | 6.Generate payment history | Use it for further reference. |
|  | 7.Notify user for payment | Collect bills from all users within the given time. |
|  | 8.Check income for each flat | Provide financial aid. |

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| Process-2 | Apply Maintenance Charges | |
| Purpose | To divide total expenditure. | |
| Target Audience | External Stakeholders | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Collect user data | Apply conditions for charges. |
|  | 2.Categorize houses | Apply maintenance cost. |
|  | 3.Categorize user | Apply non occupancy charges. |
|  | 4.Keep track of resource utilization | Include resource rent. |
|  | 5.Maintain financial history | Decide sinking fund amount. |
|  | 6.Keep track of damages | Include repair fund. |
|  | 7.Store details of previous tenants | Apply NOC fees. |
|  | 8.Keep track of deadlines | Consider interest amount. |

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| Objective-2 | Workout Payments | |
| Purpose | To complete all the transactions throughout the financial year. | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** *Committee Member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Keep track of all the bills | Pay the bills. |
|  | 2.Provide payment pages links | Use interface for all payments. |
|  | 3.Keep track of all transactions | Generate total expenditure record for the year. |
|  | 4.Explicitly record offline payments | Tally the final amount correctly. |
|  | 5.Use mobile pay/internet banking | Pay bills online. |
|  | 6.Create bank account for society | Manage all transactions. |
|  | 7.Send reminders | Inform members about payment |
|  | 8.Generate notifications | Keep track of important dates. |
|  | 9.Generate receipts | Keep track of all internal transactions(maintenance cost, staff salaries) |
|  | 10.Maintain status of payments(paid,has to pay) | Have record of payments to be done. |
|  | 11.Calculate and store overall expenditure | Estimate total maintenance cost per flat |
|  | 12.Provide an interface | Manage maintenance related work using system |
|  | 13.Keep track of expenditure for different events | Include those charges in maintenance. |
|  | 14.Record staff salary details | Include reserved charges. |
|  | 15.Record payment details | Generate statistics. |
|  | 16.List payments has to be done | Complete all the payments. |

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| Process-1 | Estimate Maintenance | |
| Purpose | To apply maintenance charges. | |
| Target Audience | External Stakeholders | |
| Status | On-going | |
| Role: | **As a** *Committee Member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Estimate tentative expenditure | Estimate maintenance charges. |
|  | 2.Provide payment link | Collect maintenance by online mode. |
|  | 3.Categorize houses | Estimate maintenance cost |
|  | 4.Analyze previous expenditure | Estimate sinking fund |
|  | 5.Keep track on expenditure on resources | Estimate resource rent per usage |
|  | 6.Keep count of houses on rent | Estimate non occupancy charges |
|  | 7.Keep record of extra expenses | Estimate charges related to these |
|  | 8.Keep track of dates of payments | Estimate discount/fine |

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| Process-2 | Apply Maintenance Charges | |
| Purpose | To manage overall expenditure of the financial year. | |
| Target Audience | External Stakeholders | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Collect user data | Apply conditions for charges. |
|  | 2.Categorize houses | Apply maintenance cost. |
|  | 3.Categorize user | Apply non occupancy charges. |
|  | 4.Keep track of resource utilization | Include resource rent. |
|  | 5.Maintain financial history | Decide sinking fund amount. |
|  | 6.Keep track of damages | Include repair fund. |
|  | 7.Store details of previous tenants | Apply NOC fees. |
|  | 8.Keep track of deadlines | Consider interest amount. |

# USER STORIES: GOAL-4: Create Communication Forum

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| Objective-1 | Accept User Messages | |
| Purpose | To solve the issues. | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Create platform to accept user messages | Receive messages |
|  | 2.Provide sufficient user details | Identify the user. |
|  | 3.Accept messages with synchronization | Avoid chaos. |
|  | 4.Create platform for complaints. | Efficiently resolve issues. |
|  | 5.Create database to store messages | Use it for future references. |
|  | 6.Facilitate with text,file,doc messages | Increase functionality |
|  | 7.Create notification forum | Effectively notify users. |
|  | 8.Process messages | Extract information |
|  | 9.Implement NLP techniques | Identify inappropriate messages. |
|  | 10.Create different platforms | Accept different types of messages. |
|  | 11.Classify owners and tenants separately | Manage discussions related to sell/rent. |
|  | 12.Generate specific notifications | Notify user related to any discussions/meetings. |
|  | 13.Acquire the profiles and catalogue | Categorize the users. |
|  | 14.List non-member people related to society | Provide access to common platform. |
|  | 15.Recognize user | Provide privilege. |
|  | 16.Verify messages from service providers | Avoid spam messages. |

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| Process-1 | Acquire User Profiles and Society Catalogue | |
| Purpose | To categorize discussions and issues. | |
| Target Audience | External Stakeholders | |
| Status | On-going | |
| Role: | **As a**Committee Member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1. Acquire user information | Provide access of communication forum to everyone. |
|  | 2.Acquire society information | Create different section to handle different discussions. |
|  | 3.Categorize users | Provide specific access to user. |
|  | 4.Categorize resources | Handle issues related to each resource. |
|  | 5.Categorize houses | Handle issues of similar types of houses separately. |
|  | 6.Store parking space details | Use it to decide visitors parking area. |
|  | 7.List required resources | Discuss what all can be included. |
|  | 8.Manage accounting statistics | Share the overall statistics in meetings. |

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| Process-2 | Categorize Users | |
| Purpose | To provide access to different sections of communication forum. | |
| Target Audience | External Stakeholders - Society Members | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Recognize owners | Provide access to sell/rent platform. |
|  | 2.Identify tenants | Provide access to sell/rent platform. |
|  | 3.Recognize brokers | Provide access to sell/rent platform. |
|  | 4.Recognize committee members | Provide facility to access all sections. |
|  | 5.Identify staff members | Notify the messages associated with them. |
|  | 6.Identify more than one roles | Provide access of concerned sections to them. |
|  | 7.Make a platform which is open to all | Include everyone for common discussions. |
|  | 8.Create a list of similar users | Circulate notices to them. |

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| Objective-2 | Recognize User Messages | |
| Purpose | Analyses a particular message and transfers it to the appropriate users for faster actions over the request raised | |
| Target Audience | Stakeholders | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Categorize issues | Assign a member to handle it. |
|  | 2.Decide severity of issue | Estimate time required to solve it. |
|  | 3.Decide required actions | Solve the issue. |
|  | 4.Categorize messages | Distinguish notices, complaints, discussions. |
|  | 5.Provide facility to mark the message | Find important messages and notices. |
|  | 6.Identify the user / department | Consider the former for attending the request. |
|  | 7.Assign member/department to solve issue | Notify member regarding the same. |
|  | 8.Recognize messages of conclusion of discussion | Generate final notice. |
|  | 9.Maintain status for each complaint | Transfer it to concerned member. |
|  | 10.Recognize frequently occurring issues | Decide required steps to clarify it based on previous decisions. |
|  | 11.Categorize users | Provide access to them. |
|  | 12.Generate bulk notifications | Notify users associated with similar platforms. |
|  | 13.Provide facility to archive discussions | To remove those after processed. |
|  | 14.Provide access to all users for common issues | Get opinion of each user. |
|  | 15.Differentiate messages from service providers | Keep required messages only. |
|  | 16.Recognize non-member messages | Avoid unnecessary messages. |

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| Process-1 | Load Relevant Platform for Raising Issue | |
| Purpose | Provides a range of appropriate options from which the user can choose and raise the issue | |
| Target Audience | Internal Stakeholders | |
| Status | On-going | |
| Role: | As a *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Distinguish different sections | Assign concerned section to solve issue. |
|  | 2.Provide different platforms for different issues | Have coordination between all departments. |
|  | 3.Generate notification on relevant platform | Notify department about issue. |
|  | 4.Provide attachment facility | Circulate documents, photos etc. |
|  | 5.Categorize the issue | Assign concerned department. |
|  | 6.Provide suggestion box | Get users’ opinion. |
|  | 7.Maintain each department database | Easily access required information. |
|  | 8.Provide discussion forum | Handle important common issues. |

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| Process-2 | Transfer Request to Concerned User | |
| Purpose | Create a dialog between between the user who has raised the issue and the user who is supposed to or can attend the request | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** *Committee Member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Find section associated with given request | Transfer request to concerned department. |
|  | 2.Find complaint type | Assign proper person to solve it. |
|  | 3.Generate notifications | Notify concerned department. |
|  | 4.Send notification to user | Inform the status related to issue/request. |
|  | 5.Circulate notices | Inform any decisions to members. |
|  | 6.Form different departments | Solve different issues independently. |
|  | 7.Assign different positions to department members | Manage and solve all issues effectively. |
|  | 8.Keep a record of complaints with their status | Use this to solve similar issues in future. |

# USER STORIES: GOAL-5: Demonstrate Visitor Statistics

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| Objective-1 | Recognize visitor | |
| Purpose | To identify the visitor in order to notify the concerned user and allow/disallow the visitor | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Collect details about the visitor | Match the details from the database |
|  | 2.Fetch details of the concerned user | Notify the user about the visitor |
|  | 3.Record the purpose of visit | Inform the user about the purpose |
|  | 4.Create an entry about the visit | Record the response of the user against it |
|  | 5.Assign a visitor number | Distinguish Daily help |
|  | 6.Record entry and exit time of daily help | Inform the concerned customer |
|  | 7.Notify the customers about daily help | Keep a track on daily help |
|  | 8.Launch a form to rate the daily help | Track their performance |
|  | 9.Group the visitors | Identify the visitor with ease |
|  | 10.Collect the responses and feedback | Identify threats. |
|  | 11.Update the services provided by the visitor | Use it for further visits |
|  | 12.Fetch service feedback | Suggest the daily help to users |
|  | 13.Fetch all the past services | Match the service |
|  | 14.Visualize the services | Demonstrate the services requested |
|  | 15.Find out appropriate technique | To generate the unique visitor number |
|  | 16.Fetch all the responses | Generate graphical view for the same |

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| Process-1 | Acquire the visitor profile and purpose | |
| Purpose | To know about the visitor and categorize them. | |
| Target Audience | Stakeholders | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Collect the details of the visitor | Match with the database |
|  | 2.Acquire the information about the purpose of visit | Inform the user about it |
|  | 3.Collect the unique visitor number | Notify the concerned users about the daily help |
|  | 4.Group all the past responses against the visitor | Identify his threat profile |
|  | 5.Make a new entry against the visit | Record the response |
|  | 6.Update the skills of the daily help | Increase the utilization of the daily help |
|  | 7.Generate a unique visitor number | Distinguish the daily help |
|  | 8.Group the visitors | Analyze the visitors’ profiles |

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| Process-2 | Record the visitor against the purpose | |
| Purpose | To analyze and notify the user about the visitor with suggestions | |
| Target Audience | Stakeholders | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Fetch the details about the purpose of visit | 1. Record the response against the visit |
|  | 2.Fetch the past responses about the visitor | 2. Analyze the visitor’s capability in providing the service |
|  | 3.Obtain the details of the consumer who is concerned | 3. Communicate the details to the former |
|  | 4.Record the entry and exit time | 4. Enable customers to track |
|  | 5.Match the purpose with a category | 5. Analyze the purpose |
|  | 6.Fetch the similar visitors | 6. Update visitor data |
|  | 7.Launch a form to record the visit for the purpose | 7. Analyze the importance of the service |
|  | 8.Launch a form to record the purpose | 8. Update the list of services |

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| Objective-2 | Grant Entry to the visitor | |
| Purpose | Perform a calculative process to allow / disallow the visitor | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Notify the user | Grant access to the visitor |
|  | 2.Collect the visitor details | Inform the users |
|  | 3.Collect the purpose | Inform the user |
|  | 4.Make a Satisfiability chart | Let the user analyze |
|  | 5.Recognize the type of service | Identify the urgency to notify |
|  | 6.Check the status of the consumer | Decide the medium of communication in order to inform |
|  | 7.Show ratings | Tell how good the visitor is |
|  | 8.Demonstrate the skill set possessed by the service provider | Provide the customer with information to let him decide |
|  | 9.Fetch the details of the consumer | Contact the former |
|  | 10.Record the response by the user | Analyze and categorize the visit |
|  | 11. Fetch the entry time and exit time | Notify the user |
|  | 12.Fetch the profile of the visitor | Alert the user about the threat level |
|  | 13. Develop a facility to choose the services | Provide a facility to customers to choose the services |
|  | 14. Display visitor profiles | View all statistics |
|  | 15.Fetch the details of the visit | Generate a message to convey the former |
|  | 16.Collect the response of the user | Allow or disallow the visitor |

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| Process-1 | Notify the concerned user | |
| Purpose | Choose an appropriate communication medium to notify the user about the visit | |
| Target Audience | Stakeholders | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1. Fetch the details of the user | Use it to notify the user |
|  | 2. Check the availability of the user | Decide whether to notify the user |
|  | 3. Identify the type of service | UNderstand its urgency |
|  | 4. Check the status of the user | Choose the appropriate communication medium |
|  | 5. Establish connection with the third party services | To communicate with the user |
|  | 6. Fetch the details of the visit | Generate the message |
|  | 7. Generate the content to be delivered as the notification | Deliver the message to the user |
|  | 8. Accept the unique visitor number | Fetch the details by matching with the database |

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| Process-2 | Record response against the visitor | |
| Purpose | To record the the response whether the user accepted /rejected the visitor. | |
| Target Audience | Stakeholders | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1. Design a form | Record the responses |
|  | 2. Design the UI of the form | Make the form responsive and collect the details |
|  | 3. Fetch the response | Store it in the database |
|  | 4. Fetch the visit details | Generate the content of the form |
|  | 5. Design a feedback form | Obtain feedback about the service |
|  | 6. Insert a new entry against the visitor in database | Store the feedback and responses against the visitor |
|  | 7. Categorize the responses | Analyze the types of visits |
|  | 8. Display the various services | Show them to the customers |

# USER STORIES: GOAL-6: Manage facilities per user

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| Objective-1 | Understand the facility requested | |
| Purpose | Collect all the information in order to understand the facility. | |
| Target Audience | Stakeholders and Customers | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Fetch details of the facility | Analyze the facility |
|  | 2.Fetch the user details | Check the accessibility of the user |
|  | 3.Develop the form | Record response from the user |
|  | 4.Check for the availability of the facility | Provide the facility |
|  | 5.Transfer the request to other users concerned | Analyze whether the facility can be provided |
|  | 6.Fetch the database concerned | Update the database |
|  | 7.Create an entry for the facility | Record the response against it |
|  | 8.Fetch the history of facilities requested | Visualize the trends |
|  | 9.Contact the third party providers | Deliver the facility |
|  | 10.Fetch the entry for the facility | Update the status |
|  | 11.Use communication forum | To contact the concerned users |
|  | 12.Generate the demand graph | Understand the request statistics |
|  | 13.Categorize the facility | Analyze the facility request status |
|  | 14.Generate request result statistics | Suggest changes |
|  | 15.Calculate the validity of the facility | Ensure fair and sustainable usage of the facility |
|  | 16.Fetch the penalty rules | Calculate penalty if any |

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| Process-1 | Check for the availability of the facility | |
| Purpose | Gathers the required information to analyze whether the facility can be provided | |
| Target Audience | Stakeholders and Customers | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Generate from to accept the request | Allow customer to request a facility |
|  | 2.Design a UI to categorize facility | Streamline the process |
|  | 3.Get details of the user | Analyze the user’s profile |
|  | 4.Identify other users | Involve them while granting the facility |
|  | 5.Contact the third party | Provide the facility physically |
|  | 6.Fetch the databases of the facilities and resources | Analyze the availability of the facility |
|  | 7.Transfer the request to other users | To allow the users to decide whether facility can be provided |
|  | 8.Categorize the facility | Match with the database |

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| Process-2 | Record the result against the user | |
| Purpose | Track the status and result of the request in a transparent and impartial fashion | |
| Target Audience | Stakeholders and Customers | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Obtain the details of the facility | Store in the database |
|  | 2.Check for the status of the process | Update the database |
|  | 3.Fetch the databases of the rules ,resources | Update them accordingly |
|  | 4.Generate a message about the results | Notify the user about it |
|  | 5.Calculate charges for the facility | Store as a part of maintenance charges |
|  | 6.Launch a feedback form | Know the effectiveness |
|  | 7.Fetch the details of the facility along with results | Generate the content for feedback form |
|  | 8.Make an entry in the database | Store the feedback |

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| Objective-2 | Bill Management | |
| Purpose | Manage the various bills of the user and also notify the user so that the former pays dues before time | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Fetch details about the user | Obtain the bills related to the user |
|  | 2.Fetch the details of a particular bill | Calculate the dues to be cleared |
|  | 3.Identify the category of the bill | Decide the third party service to be connected to system |
|  | 4.Check availability of the user | Decide the communication medium |
|  | 5.Establish connection with third party services | Notify the user about the bill |
|  | 6.Fetch the due date of the bill | Generate content for notification |
|  | 7.Launch bill payment form | Display the bills to be paid |
|  | 8.Launch feedback form | Record feedback |
|  | 9.Generate statistics of the feedback | Estimate satisfiability of the customers |
|  | 10.Create entry for the transaction | Store the response in database |
|  | 11.Calculate the time period for bill payment | Do not trouble the user with notifications |
|  | 12.Graph all the transaction history | Measure the effectiveness of the goal |
|  | 13.See a responsive feedback form | Let the user lodge requests for managing a new bill |
|  | 14.See graphical representation of the responses | Understand its efficiency |
|  | 15.Calculate the frequency period of notification | Make the user not ignore the notification |
|  | 16.Fetch the maintenance charges details | Display the breakdown of the maintenance charges applied |

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| Process-1 | Estimate the bills due per user | |
| Purpose | Gather Information from the user about the bills to paid and notify the user for the same. | |
| Target Audience | Internal Stakeholders | |
| Status | On-going | |
| Role: | **As a** *society member* | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.Fetch a user profile | Use them to generate the content for form |
|  | 2.Launch a form asking for acquiring types of bills | Store them in the database |
|  | 3.Acquire the details of each bill | Calculate the dues to be paid |
|  | 4.Infer the third party service | Establish connection with third party service |
|  | 5.Find out the due date of the bill | Calculate the amount to be paid for that bill and its urgency |
|  | 6.Check the availability of the user | Decide the communication medium for notification |
|  | 7.Launch a page for payment | Navigate to the appropriate website |
|  | 8.Create an entry for the transaction | Store the response history |

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| Process-2 | Provide gateway to clear the dues | |
| Purpose | Develop a simple to use graphical user interface which serves the purpose of payment gateway for all types of bills for each user | |
| Target Audience | Customers | |
| Status | On-going | |
| Role: | **As a**society committee member | |
|  | **I want to** *<perform some task>* | **so that I can** *<achieve some goal>* |
| Task Description | 1.See impressive and simple to use GUI | carry out all the transactions easily |
|  | 2.See personalized list of bills | Keep a track of the bills with ease |
|  | 3.Be notified periodically | Never miss any updates |
|  | 4.Receive precise and meaningful notifications | Understand the bill to be paid |
|  | 5.See only one gateway | Navigates to the appropriate website |
|  | 6.Have all the dues correctly calculated | Plan the expenditure |
|  | 7.See a responsive and secured form accepting the details about several bills | Input all the details |
|  | 8.See a system that does not mix details of several bills | Experience hassle free transactions and do not repeatedly have to enter the details |

**Iteration Backlog**

**User Stories Goal 1 - CREATE USER PROFILE**

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| Objective-1 | Process User Registration | SP | IC | IP |
|  | 15. As a Committee Member I want to Validate user profile so that I can Keep it safe. | 13 | I1 = 20 | 1 |
|  | 12. As a Committee Member I want to Create log file so that I can Keep track of changes made. | 5 |
|  | 7. As a Committee Member I want to Generate a backup so that I can Retrieve data in case of loss of files. | 2 |
|  | 16. As a Committee Member I want to Verify registered contact details so that I can Receive validated acknowledgements. | 8 | I2 = 19 | 2 |
|  | 14. As a Committee Member I want to Notify committee about the changes so that I can Ensure consistency in system. | 3 |
|  | 5. As a Committee Member I want to Formulate database structure so that I can Start creating profiles. | 5 |
|  | 8. As a Committee Member I want to Share backup with Project Team so that I can Expect team to perform assigned tasks. | 1 |
|  | 6. As a Committee Member I want to Populate User Database so that I can Meet the preliminary objective. | 2 |
|  | 1. As a Committee Member I want to Request user data so that I can Use it to do further development. | 8 | I3 = 18 | 3 |
|  | 3. As a Committee Member I want to Create a preliminary database so that I can Store the acquired user data. | 5 |
|  | 11. As a Committee Member I want to Update Database structure so that I can Accommodate credentials in user profiles. | 5 |
|  | 2. As a Committee Member I want to Find User Data Sources so that I can Build user profiles. | 13 | I4 = 18 | 4 |
|  | 13. As a Committee Member I want to Check if data has been already used so that I can Rollback the incorrect data operations. | 5 |
|  | 10. As a Committee Member I want to Launch User Profile Page so that I can Fulfil project deliverables. | 8 | I5 = 18 | 5 |
|  | 4. As a Committee Member I want to Create a user Data Spyder so that I can Get updated user data. | 5 |
|  | 9. As a Committee Member I want to Assign database privileges so that I can Monitor the changes made to the database. | 5 |

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| Process-1 | Load User Registration Form | SP | IC | IP |
|  | 4. As aCommittee Member I want to Accept User Profile inputs so that I can Add new User. | 5 | I1 = 13 | 1 |
|  | 6. As aCommittee Member I want to Set basic credential requirements. so that I can Create basic profile. | 8 |
|  | 2. As aCommittee Member I want to Research user credentials so that I can Make system as accurate as possible. | 8 | I2 = 14 | 2 |
|  | 7. As aCommittee Member I want to Populate user credentials so that I can Identify the user. | 3 |
|  | 1. As aCommittee Member I want to Create platform for accepting user data so that I can Gather user credentials as per my protocol. | 3 |
|  | 8. As aCommittee Member I want to Decide appropriate fields in database so that I can Distinguish between types of users easily. | 5 | I3 = 15 | 3 |
|  | 3. As aCommittee Member I want to Set credentials fields in database so that I can Add user credentials. | 5 |
|  | 5. As aCommittee Member I want to Register User Profiles into database so that I can Store new User. | 5 |

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| Process-2 | Acquire User Registration Information | SP | IC | IP |
|  | 7. As aCommittee Member I want to Correct the found abnormality so that I can Correct the found abnormality. | 13 | I1 = 18 | 1 |
|  | 8. As aCommittee Member I want to Commit changes on database so that I can Render the changes to the team. | 5 |
|  | 1. As aCommittee Member I want to Accept data entered by user so that I can Process the data. | 3 | I2 = 14 | 2 |
|  | 2. As aCommittee Member I want to Decide input format so that I can Organize data easily. | 3 |
|  | 4. As aCommittee Member I want to Search for invalid data so that I can Identify data abnormalities. | 8 |
|  | 3. As aCommittee Member I want to Encapsulate the data so that I can Identify different users. | 3 | I3 = 14 | 3 |
|  | 6. As aCommittee Member I want to Ask user for valid credentials so that I can Resolve the abnormality issue. | 3 |
|  | 5. As aCommittee Member I want to Investigate searched abnormality so that I can Verify the legitimacy. | 8 |

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| Objective - 2 | Release Member Information | SP | IC | IP |
|  | 1. As aCommittee Member I want to Organise database attributes so that I can Easily analyse the data. | 3 | I1 = 19 | 1 |
|  | 8. As aCommittee Member I want to Correspond with Analysis team so that I can Refine the observations. | 8 |
|  | 5. As aCommittee Member I want to Draw venn diagram for shortlisted attributes so that I can Formalize the observations. | 5 |
|  | 9. As aCommittee Member I want to Consolidate outline of categorising process so that I can Systemize procedure. | 3 |
|  | 14. As aCommittee Member I want to Know the data sources so that I can Trust the system. | 5 | I2 = 19 | 2 |
|  | 12. As aCommittee Member I want to Collect anonymous feedback of user so that I can Compliment/affront the user. | 1 |
|  | 2. As aCommittee Member I want to Design patterns for attributes so that I can Study the data. | 5 |
|  | 4. As aCommittee Member I want to Prioritise the important parameters so that I can Produce accurate results | 8 |
|  | 16.As aCommittee Member I want to Correspond with Analysis team so that I can Refine the observations. | 13 | I3 = 18 | 3 |
|  | 6. As aCommittee Member I want to Organise the parameters so that I can Simplify categorising process | 3 |
|  | 10. As aCommittee Member I want to Construct final categorising methodology so that I can Begin development process. | 2 |
|  | 13.As aCommittee Member I want to Run background checks so that I can Ascertain data correctness. | 13 | I4 = 16 | 4 |
|  | 3. As aCommittee Member I want to Conceptualise parameters of particular type so that I can Process of analysing is directed. | 2 |
|  | 7. As aCommittee Member I want to Record formulated observations so that I can Discuss with the analysis team. | 1 |
|  | 11. As aCommittee Member I want to Display user’s current responsibility so that I can Evaluate his performance | 3 | I5 = 11 | 5 |
|  | 15. As aCommittee Member I want to Manage user privileges so that I can Limit user controls. | 8 |

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| Process-1 | Examine Member Registration Profile | SP | IC | IP |
|  | 1.As aCommittee Member I want to Find a certain user so that I can view user relevant data | 8 | I1 = 15 | 1 |
|  | 2.As aCommittee Member I want to .Attain type of the user  so that I can report the type. | 2 |
|  | 6. As aCommittee Member I want to Consider all users with comparable importance so that I can take unbiased decision | 5 |
|  | 4. As aCommittee Member I want to Find similar users so that I can make a group of them | 13 | I2 = 20 | 2 |
|  | 8. As aCommittee Member I want to Filter profiles indicating appropriate characteristics so that I can find suitable user | 5 |
|  | 3. As aCommittee Member I want to Get a curated list of users so that I can distribute the users according to the types | 2 |
|  | 5. As aCommittee Member I want to Prioritize users by types so that I can get the member of committee. | 8 | I3 = 11 | 3 |
|  | 7. As aCommittee Member I want to Filter profiles indicating appropriate users so that I can decide capable user. | 3 |

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| Process-2 | Launch User Profile | SP | IC | IP |
|  | 5.As aCommittee Member I want to Use unique template for different type of user so that I can Make it unambiguous. | 8 | I1 = 15 | 1 |
|  | 2.As aCommittee Member I want to Research templates  so that I can Select appropriate template. | 5 |
|  | 8.As aCommittee Member I want to Delete irrelevant user profiles so that I can Remove redundancy. | 2 |
|  | 6.As aCommittee Member I want to Display sufficient information about user so that I can Make it enough informative | 13 | I2 = 18 | 2 |
|  | 1.As aCommittee Member I want to .To decide the template of page so that I can Make it interactive interface | 5 |
|  | 3.As aCommittee Member I want to Design GUI  so that I can Make it attractive. | 8 | I3 = 14 | 3 |
|  | 7.As aCommittee Member I want to Keep data updated so that I can Make it accurate | 3 |
|  | 4.As aCommittee Member I want to Use sufficient User Data  so that I can Optimise the space | 3 |

**User Stories Goal 2 - Process Society Catalogue**

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| Objective-1 | Acquire Resource information | SP | IC | IP |
|  | 10. As aCommittee Member I want to Administer information extraction so that I can Put system to good use. | 8 | I1 = 18 | 1 |
|  | 4. As aCommittee Member I want to so Find information of people associated with resource that I can Maintain modules of resource. | 5 |
|  | 8. As aCommittee Member I want to Gather information periodically so that I can Assure safe,accurate service. | 5 |
|  | 1. As aCommittee Member I want to Create platform to gather information so that I can Take decisions about managing resources. | 13 | I2 = 18 | 2 |
|  | 9. As aCommittee Member I want to Establish resource background so that I can Expect transparency. | 5 |
|  | 16. As aCommittee Member I want to Search for inadequate data so that I can Identify missing and null data. | 3 | I3 = 18 | 3 |
|  | 2. As aCommittee Member I want to Maintain all resources in database so that I can Easily find the resource. | 5 |
|  | 14. As aCommittee Member I want to Scrutinize Resources so that I can Identify resources. | 5 |
|  | 3. As aCommittee Member I want to Extract resource information so that I can Use it for the further development. | 5 |
|  | 11. As aCommittee Member I want to Update Database structure so that I can Accommodate credentials in user profiles. | 8 | I4 = 19 | 4 |
|  | 5. As aCommittee Member I want to Identify the limitations of resources so that I can Overcome the inconvenience caused. | 5 |
|  | 15. As aCommittee Member I want to Take resource photographs so that I can Identify resources. | 3 |
|  | 7. As aCommittee Member I want to Survey market values  so that I can Negotiate new contracts and transfer fees. | 3 |
|  | 12. As aCommittee Member I want to Process registration form so that I can Extract exact information. | 8 | I5 = 18 | 5 |
|  | 13. As aCommittee Member I want to Provide contact details of responsible person so that I can People can contact in emergency. | 5 |
|  | 6. As aCommittee Member I want to Analyse use of resource so that I can Make decision on the basis of usage. | 5 |

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| Process-1 | Load Resource Registration Form | SP | IC | IP |
|  | 3. As aCommittee Member I want to Set specification fields in database so that I can add resource specifications. | 2 | I1 = 18 | 1 |
|  | 8. As aCommittee Member I want to Decide appropriate fields in database so that I can distinguish between types of users easily. | 8 |
|  | 1. As aCommittee Member I want to Create platform for accepting resource data so that I can Gather resource specifications. | 8 |
|  | 5. As aCommittee Member I want to Accept Resource attribute inputs so that I can Add new resource. | 13 | I2 = 18 | 2 |
|  | 2. As aCommittee Member I want to Find interdependent resources so that I can Resolve dependency. | 5 |
|  | 7. As aCommittee Member I want to Create log file so that I can keep track of changes made. | 8 | I3 = 19 | 3 |
|  | 4. As aCommittee Member I want to Check similar users so that I can Decide best way to communicate. | 8 |
|  | 6. As aCommittee Member I want to Register Resource into database so that I can store new resource. | 3 |

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| Process-2 | Examine the Resources | SP | IC | IP |
|  | 3. As aCommittee Member I want to Extract resource information so that I can Compile a report. | 5 | I1 = 16 | 1 |
|  | 8. As aCommittee Member I want to Keep database updated so that I can Carry out operations smoothly. | 8 |
|  | 4. As aCommittee Member I want to survey resource form so that I can Give feedback of resources. | 3 |
|  | 5. As aCommittee Member I want to Schedule the resources so that I can Provide facility to all members. | 8 | I2 = 16 | 2 |
|  | 2. As aCommittee Member I want to Find limitations of resources so that I can Handle constraints related to it. | 8 |
|  | 6. As aCommittee Member I want to Analyse maintenance requirements so that I can Conserve resources. | 8 | I3 = 18 | 3 |
|  | 1. As aCommittee Member I want to Collect specifications of resources so that I can Inspect accurately. | 5 |
|  | 7. As aCommittee Member I want to Schedule maintenance plan so that I can Maintain resource quality. | 5 |

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| Objective-2 | Demonstrate Facilities per user | SP | IC | IP |
|  | 8. As aCommittee Member I want to Update database so that I can Keep track of details. | 5 | I1 = 16 | 1 |
|  | 1. As aCommittee Member I want to Gather user requirements so that I can Manage resource allocation. | 8 |
|  | 4. As aCommittee Member I want to Identify shortage of resources so that I can Schedule resources. | 3 |
|  | 13. As aCommittee Member I want to Update database so that I can Manage efficiently. | 8 | I2 = 20 | 2 |
|  | 5. As aCommittee Member I want to Keep track of resource utilization so that I can Use this information for security purposes. | 5 |
|  | 16. As aCommittee Member I want to Provide precise information so that I can Give information about resources. | 5 |
|  | 2. As aCommittee Member I want to Examine resource requirements per use so that I can distribute facilities. | 2 |
|  | 7. As aCommittee Member I want to Perform resource maintenance so that I can To provide quality service. | 8 | I3 = 19 | 3 |
|  | 10. As aCommittee Member I want to Record resource usage so that I can Sue for better service. | 8 |
|  | 6. As aCommittee Member I want to Provide details of responsible person so that I can User can carry respective business. | 3 |
|  | 12. As aCommittee Member I want to Demonstrate facility groups so that I can Usage of groups is ensured. | 13 | I4 = 18 | 4 |
|  | 14. As aCommittee Member I want to Allocate facilities so that I can Enough utilization of facilities. | 5 |
|  | 3. As aCommittee Member I want to Examine resource utilization so that I can Monitor resource usage. | 8 | I5 = 19 | 5 |
|  | 15. As aCommittee Member I want to Provide the rule book regarding resources so that I can Help users to follow the rules. | 5 |
|  | 9. As aCommittee Member I want to Avoid monopolization of resource so that I can Provide fair chance of utilization. | 3 |
|  | 11. As aCommittee Member I want to Create facility groups according to attribute so that I can Give information about resources. | 3 |

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| Process-1 | Acquire various Facilities | SP | IC | IP |
|  | 5. As aCommittee Member I want to List out all facilities so that I can To demonstrate facilities. | 5 | I1 = 18 | 1 |
|  | 2. As aCommittee Member I want to Identify resource attributes so that I can View resource attributes from database. | 5 |
|  | 8. As aCommittee Member I want to Inspect facilities periodically so that I can To maintain the calibre of facility. | 8 |
|  | 4. As aCommittee Member I want to Extract attributes for grouping so that I can Extract attribute-wise resource groups. | 8 | I2 = 16 | 2 |
|  | 1. As aCommittee Member I want to Gather facility guidelines so that I can Inform rules and regulations. | 8 |
|  | 7. As aCommittee Member I want to List out available facilities so that I can To provide appropriate information. | 8 | I3 = 14 | 3 |
|  | 3. As aCommittee Member I want to Examine attribute-wise data so that I can Extract attribute-wise resources. | 3 |
|  | 6. As aCommittee Member I want to List out available facilities so that I can To provide appropriate information. | 3 |

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| Process-2 | Map the Facilities per user | SP | IC | IP |
|  | 2. As aCommittee Member I want to Provide facility details to user so that I can Take decisions according to details. | 8 | I1 = 18 | 1 |
|  | 6. As aCommittee Member I want to Take feedback regarding service so that I can Improve service. | 5 |
|  | 1. As aCommittee Member I want to Generate facility details so that I can To use for references. | 5 |
|  | 4. As aCommittee Member I want to Insert appointment details in database so that I can Store information. | 13 | I2 = 18 | 2 |
|  | 7. As aCommittee Member I want to Carry out inspection after use so that I can Conserve the facility. | 5 |
|  | 8. As aCommittee Member I want to Avoid starvation  so that I can Give fair chance to everyone. | 8 | I3 = 19 | 3 |
|  | 5. As aCommittee Member I want to Inform other members of society so that I can Keep them notified. | 8 |
|  | 3. As aCommittee Member I want to Generate availability details so that I can Appoint facility. | 3 |

**User Stories Goal 3 - Generate Accounting Statistics**

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| Objective-1 | Intimate Maintenance Information | SP | IC | IP |
|  | 1. As aCommittee Member I want to Classify flats by type  so that I can Apply maintenance charges to each. | 5 | I1=19 | 1 |
|  | 8. As aCommittee Member I want to Keep record of due dates so that I can Provide discount/charge interest to user. | 8 |
|  | 12. As aCommittee Member I want to Store the details in database so that I can Use it further. | 3 |
|  | 5. As aCommittee Member I want to Maintain report of maintenance charges so that I can Check that whoever has not paid it | 3 |
|  | 14. As aCommittee Member I want to Record staff salary details so that I can Include reserved charges. | 8 | I2=17 | 2 |
|  | 11. As aCommittee Member I want to Generate receipts for each flat so that I can Have record of each payment | 8 |
|  | 16. As aCommittee Member I want to Find average cost per house so that I can Apply charges to each house. | 1 |
|  | 2. As aCommittee Member I want to Get maintenance charges for each flat type so that I can Generate maintenance bill. | 5 | I3=11 | 3 |
|  | 4. As aCommittee Member I want to Classify users as owner or tenant so that I can Apply different maintenance charges to them | 3 |
|  | 9. As aCommittee Member I want to Keep previous payment records so that I can Manage previous dues in current bill. | 1 |
|  | 6. As aCommittee Member I want to Keep record of parking space per flat so that I can Include charges for parking. | 2 |
|  | 15. As aCommittee Member I want to Compare with previous financial years so that I can Take any financial decisions. | 13 | I4=18 | 4 |
|  | 3. As aCommittee Member I want to Keep record of common facilities usage so that I can Apply those charges to each flat. | 5 |
|  | 13. As aCommittee Member I want to Keep track of expenditure for different events so that I can Include those charges in maintenance. | 5 | I5=18 | 5 |
|  | 7. As aCommittee Member I want to Distinguish charges in different types of fees so that I can Generate bill for each flat | 5 |
|  | 10. As aCommittee Member I want to Find the saving amount for society so that I can Use it further for other purposes. | 8 |

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| Process-1 | Devise Maintenance Schedule | SP | IC | IP |
|  | 3. As aCommittee Member I want to Decide due dates  so that I can Complete all payments in specific period | 3 | I1=12 | 1 |
|  | 6. As aCommittee Member I want to Generate payment history so that I can Use it for further reference | 8 |
|  | 2. As aCommittee Member I want to Keep track of overall expenditure so that I can Study financial status of society | 5 | I2=14 | 2 |
|  | 8. As aCommittee Member I want to Check income for each flat so that I can Provide financial aid | 1 |
|  | 5. As aCommittee Member I want to Estimate total maintenance charges so that I can Take any financial decisions according to that | 8 |
|  | 1. As aCommittee Member I want to Apply charges to each house. so that I can Collect maintenance charges. | 2 | I3=16 | 3 |
|  | 7. As aCommittee Member I want to Notify user for payment  so that I can Collect bills from all users within the given time. | 13 |
|  | 4. As aCommittee Member I want to Distinguish users  so that I can Apply associated charges | 1 |

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| Process-2 | Apply Maintenance Charges | SP | IC | IP |
|  | 3. As aCommittee Member I want to .Categorize user  so that I can Apply non occupancy charges. | 5 | I1=15 | 1 |
|  | 8. As aCommittee Member I want to Keep track of deadlines  so that I can Consider interest amount. | 8 |
|  | 6. As aCommittee Member I want to Keep track of damages  so that I can Include repair fund | 2 |
|  | 1. As aCommittee Member I want to Collect user data  so that I can Apply conditions for charges | 8 | I2=16 | 2 |
|  | 4. As aCommittee Member I want to Keep track of resource utilization so that I can Include resource rent. | 8 |
|  | 7. As aCommittee Member I want to Store details of previous tenants so that I can Apply NOC fees. | 1 |
|  | 2. As aCommittee Member I want to Categorize houses  so that I can Apply maintenance cost | 2 | I3=15 | 3 |
|  | 5. As aCommittee Member I want to Maintain financial history so that I can Decide sinking fund amount | 13 |

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| Objective-2 | Workout Payments | SP | IC | IP |
|  | 16. As aCommittee Member I want to Record payment details so that I can Generate statistics | 8 | I1=11 | 1 |
|  | 15. As aCommittee Member I want to List payments has to be done so that I can Complete all the payments. | 2 |
|  | 2. As aCommittee Member I want to .Provide payment pages links so that I can Use interface for all payments. | 1 |
|  | 10. As aCommittee Member I want to Maintain status of payments so that I can Have record of payments to be done | 13 | I1=19 | 1 |
|  | 6. As aCommittee Member I want to Create bank account for society so that I can Manage all transactions. | 1 |
|  | 3. As aCommittee Member I want to Keep track of all transactions so that I can Generate total expenditure record for the year. | 5 |
|  | 11. As aCommittee Member I want to Calculate and store overall expenditure so that I can Estimate total maintenance cost per flat | 1 | I2=11 | 2 |
|  | 1. As aCommittee Member I want to Keep track of all the bills so that I can Pay the bills. | 2 |
|  | 9. As aCommittee Member I want to Generate receipts  so that I can Keep track of all internal transactions | 8 |
|  | 5. As aCommittee Member I want to Use mobile pay/internet banking so that I can Pay bills online | 2 |
|  | 14. As aCommittee Member I want to Record staff salary details so that I can Include reserved charges | 5 | I3=17 | 3 |
|  | 12. As aCommittee Member I want to Provide an interface  so that I can Manage maintenance related work using system | 3 |
|  | 4. As aCommittee Member I want to Explicitly record offline payments so that I can Tally the final amount correctly | 1 |
|  | 8. As aCommittee Member I want to Generate notifications  so that I can Keep track of important dates. | 8 |
|  | 7. As aCommittee Member I want to Send reminders  so that I can Inform members about payment | 2 | I4=15 | 4 |
|  | 13. As aCommittee Member I want to Keep track of expenditure for different events so that I can Include those charges in maintenance | 13 |

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| --- | --- | --- | --- | --- |
| Process-1 | Estimate Maintenance | SP | IC | IP |
|  | 3. As aCommittee Member I want to Categorize houses  so that I can Estimate maintenance cost | 2 | I1=17 | 1 |
|  | 8. As aCommittee Member I want to Keep track of dates of payments so that I can Estimate discount/fine | 13 |
|  | 2. As aCommittee Member I want to Provide payment link  so that I can Collect maintenance by online mode. | 2 |
|  | 5. As aCommittee Member I want to Keep track on expenditure on resources so that I can Estimate resource rent per usage | 1 | I2=3 | 2 |
|  | 7. As aCommittee Member I want to Keep record of extra expenses so that I can Estimate charges related to these | 2 |
|  | 1. As aCommittee Member I want to Estimate tentative expenditure so that I can Estimate maintenance charges. | 3 | I3=16 | 3 |
|  | 6. As aCommittee Member I want to Keep count of houses on rent so that I can Estimate non occupancy charges | 5 |
|  | 4. As aCommittee Member I want to Analyze previous expenditure so that I can Estimate sinking fund | 8 |

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| --- | --- | --- | --- | --- |
| Process-2 | Apply Maintenance Charges | SP | IC | IP |
|  | 6. As aCommittee Member I want to Keep track of damages  so that I can Include repair fund. | 13 | I1=18 | 1 |
|  | 2. As aCommittee Member I want to Categorize houses  so that I can Apply maintenance cost. | 5 |
|  | 5. As aCommittee Member I want to Maintain financial history so that I can Decide sinking fund amount. | 5 | I2=15 | 2 |
|  | 8. As aCommittee Member I want to Keep track of deadlines so that I can Consider interest amount | 2 |
|  | 1. As aCommittee Member I want to Collect user data  so that I can Apply conditions for charges | 8 |
|  | 7. As aCommittee Member I want to .Store details of previous tenants so that I can Apply NOC fees. | 5 | I3=9 | 3 |
|  | 3. As aCommittee Member I want to Categorize user  so that I can Apply non occupancy charges | 1 |
|  | 4. As aCommittee Member I want to Keep track of resource utilization so that I can Include resource rent. | 3 |

**User Stories Goal 4 - Create Communication Forum**

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| Objective-1 | Accept User Messages | SP | IC | IP |
|  | 4. As aCommittee Member I want to Create platform for complaints so that I can Efficiently resolve issues. | 5 | l1=15 | 1 |
|  | 8. As aCommittee Member I want to Process messages  so that I can Extract information | 2 |
|  | 2. As aCommittee Member I want to Provide sufficient user details so that I can Identify the user. | 8 |
|  | 13. As aCommittee Member I want to Acquire the profiles and catalogue so that I can Categorize the users. | 1 | l2=11 | 2 |
|  | 5. As aCommittee Member I want to Create database to store messages so that I can Use it for future references. | 3 |
|  | 12. As aCommittee Member I want to Generate specific notifications so that I can Notify user related to any discussions/meetings. | 5 |
|  | 11. As aCommittee Member I want to .Classify owners and tenants separately so that I can Manage discussions related to sell/rent. | 2 |
|  | 1. As aCommittee Member I want to Create platform to accept user messages so that I can Receive messages | 8 | l3=18 | 3 |
|  | 14. As aCommittee Member I want to List non-member people related to society so that I can Provide access to common platform. | 2 |
|  | 9. As aCommittee Member I want to .Implement NLP techniques so that I can Identify inappropriate messages. | 5 |
|  | 3. As aCommittee Member I want to Accept messages with synchronization so that I can Avoid chaos. | 3 |
|  | 15. As aCommittee Member I want to Recognize user  so that I can Provide privilege. | 1 | l4=19 | 4 |
|  | 7. As aCommittee Member I want to Create notification forum so that I can Effectively notify users. | 3 |
|  | 10. As aCommittee Member I want to Create different platforms so that I can Accept different types of messages. | 5 |
|  | 6. As aCommittee Member I want to Facilitate with text,file,doc messages so that I can Increase functionality | 2 |
|  | 16. As aCommittee Member I want to .Verify messages from service providers so that I can Avoid spam messages. | 8 |

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| --- | --- | --- | --- | --- |
| Process-1 | Acquire User Profiles and Society Catalogue | SP | IC | IP |
|  | As aCommittee Member I want to Acquire user information so that I can Provide access of communication forum to everyone. | 2 | l1=10 | 1 |
|  | As aCommittee Member I want to Acquire society information so that I can Create different section to handle different discussions. | 3 |
|  | As aCommittee Member I want to Categorize users  so that I can Provide specific access to user. | 5 |
|  | As aCommittee Member I want to Categorize resources  so that I can Handle issues related to each resource. | 8 | l2=13 | 2 |
|  | As aCommittee Member I want to Categorize houses so that I can Handle issues of similar types of houses separately. | 3 |
|  | As aCommittee Member I want to Store parking space details  so that I can Use it to decide visitors parking area. | 2 |
|  | As aCommittee Member I want to List required resources so that I can Discuss what all can be included. | 13 | l3=18 | 3 |
|  | As aCommittee Member I want to Manage accounting statistics so that I can Share the overall statistics in meetings. | 5 |

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| --- | --- | --- | --- | --- |
| Process-2 | Categorize Users | SP | IC | IP |
|  | As aCommittee Member I want to Recognize owners so that I can Provide access to sell/rent platform. | 5 | l1=8 | 1 |
|  | As aCommittee Member I want to Identify tenants so that I can Provide access to sell/rent platform. | 2 |
|  | As aCommittee Member I want to Recognize brokers so that I can Provide access to sell/rent platform | 1 |
|  | As aCommittee Member I want to Recognize committee members so that I can Provide facility to access all sections. | 8 | l2=9 | 2 |
|  | As aCommittee Member I want to .Identify staff members  so that I can Notify the messages associated with them. | 1 |
|  | As aCommittee Member I want to Identify more than one roles  so that I can Provide access of concerned sections to them. | 2 | l3=18 | 3 |
|  | As aCommittee Member I want to Make a platform which is open to all  so that I can Include everyone for common discussions. | 3 |
|  | As aCommittee Member I want to Create a list of similar users so that I can Circulate notices to them | 13 |

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| --- | --- | --- | --- | --- |
| Objective-2 | Recognize User Messages | SP | IC | IP |
|  | As aCommittee Member I want to Categorize issues so that I can Assign a member to handle it. | 8 | l1=18 | 1 |
|  | As aCommittee Member I want to .Decide severity of issue so that I can Estimate time required to solve it. | 5 |
|  | As aCommittee Member I want to Decide required actions so that I can Solve the issue. | 3 |
|  | As aCommittee Member I want to Categorize messages so that I can Distinguish notices, complaints, discussions. | 2 |
|  | As aCommittee Member I want to Provide facility to mark the message so that I can Find important messages and notices | 8 | l2=14 | 2 |
|  | As aCommittee Member I want to .Identify the user / department  so that I can Consider the former for attending the request. | 3 |
|  | As aCommittee Member I want to Assign member/department to solve issue so that I can Notify member regarding the same. | 2 |
|  | As aCommittee Member I want to Recognize messages of conclusion of discussion so that I can Generate final notice. | 1 |
|  | As aCommittee Member I want to Maintain status for each complaint so that I can Transfer it to concerned member. | 5 | l3=11 | 3 |
|  | As aCommittee Member I want to Recognize frequently occurring issues so that I can Decide required steps to clarify it based on previous decisions. | 3 |
|  | As aCommittee Member I want to Categorize users  so that I can Provide access to them. | 2 |
|  | As aCommittee Member I want to Generate bulk notifications so that I can Notify users associated with similar platforms. | 1 |
|  | As aCommittee Member I want to Provide facility to archive discussions so that I can To remove those after processed. | 5 | l4=16 | 4 |
|  | As aCommittee Member I want to Provide access to all users for common issue so that I can Get opinion of each user. | 8 |
|  | As aCommittee Member I want to Differentiate messages from service providers so that I can Keep required messages only. | 2 |
|  | As aCommittee Member I want to Recognize non-member messages so that I can Avoid unnecessary messages. | 1 |

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| --- | --- | --- | --- | --- |
| Process-1 | Load Relevant Platform for Raising Issue | SP | IC | IP |
|  | As aCommittee Member I want to Distinguish different sections  so that I can Assign concerned section to solve issue | 5 | l1=9 | 1 |
|  | As aCommittee Member I want to Provide different platforms for different issues  so that I can Have coordination between all departments | 3 |
|  | As aCommittee Member I want to so Generate notification on relevant platform that I can Notify department about issue. | 1 |
|  | As aCommittee Member I want to Provide attachment facility so that I can Circulate documents, photos etc | 13 | l2=15 | 2 |
|  | As aCommittee Member I want to Categorize the issue so that I can Assign concerned department. | 2 |
|  | As aCommittee Member I want to Provide suggestion box so that I can Get users’ opinion. | 5 | l3=10 | 3 |
|  | As aCommittee Member I want to Maintain each department database  so that I can Easily access required information. | 3 |
|  | As aCommittee Member I want to Provide discussion forum so that I can Handle important common issues. | 2 |

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| --- | --- | --- | --- | --- |
| Process-2 | Transfer Request to Concerned User | SP | IC | IP |
|  | As aCommittee Member I want to .Find section associated with given request so that I can Transfer request to concerned department | 8 | l1=13 | 1 |
|  | As aCommittee Member I want to Find complaint type so that I can Assign proper person to solve it. | 5 |
|  | As aCommittee Member I want to .Generate notifications so that I can Notify concerned department. | 1 | l2=6 | 2 |
|  | As aCommittee Member I want to .Send notification to user so that I can Inform the status related to issue/request. | 2 |
|  | As aCommittee Member I want to Circulate notices so that I can Inform any decisions to members. | 3 |
|  | As aCommittee Member I want to Form different departments so that I can Solve different issues independently. | 5 | l3=10 | 3 |
|  | As aCommittee Member I want to Assign different positions to department members so that I can Manage and solve all issues effectively. | 3 |
|  | As aCommittee Member I want to Keep a record of complaints with their status so that I can Use this to solve similar issues in future. | 2 |

**User Stories Goal 5 - Demonstrate Visitor Statistics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Objective-1 | Recognize visitor | SP | IC | IP |
|  | 1.As aCommittee Member I want to Collect details about the visitor so that I can Match the details from the database | 2 | 18 | 1 |
|  | 2.As aCommittee Member I want to Fetch details of the concerned user so that I can Notify the user about the visitor | 3 |
|  | 4.As aCommittee Member I want to Create an entry about the visit so that I can Record the response of the user against it | 2 |
|  | 6.As aCommittee Member I want to Record entry and exit time of daily help so that I can Inform the concerned customer | 3 |
|  | 9.As aCommittee Member I want to Group the visitors so that I can Identify the visitor with ease | 8 |
|  | 3.As aCommittee Member I want to Record the purpose of visit so that I can Inform the user about the purpose | 1 | 19 | 2 |
|  | 5.As aCommittee Member I want to .Assign a visitor number  so that I can Distinguish Daily help | 5 |
|  | 7.As aCommittee Member I want to Notify the customers about daily help so that I can Keep a track on daily help | 5 |
|  | 8.As aCommittee Member I want to Launch a form to rate the daily help so that I can Track their performance | 8 |
|  | 10.As aCommittee Member I want to Collect the responses and feedback so that I can identify threats. | 3 | 19 | 3 |
|  | 11.As aCommittee Member I want to Update the services provided by the visitor so that I can Use it for further visits | 8 |
|  | 12.As aCommittee Member I want to Fetch service feedback so that I can Suggest the daily help to users | 8 |
|  | 13.As aCommittee Member I want to Fetch all the past services so that I can Match the service | 8 | 16 | 4 |
|  | 14.As aCommittee Member I want to Visualize the servicesso that I can Demonstrate the services requested | 8 |
|  | 15.As aCommittee Member I want to Find out appropriate technique so that I can To generate the unique visitor number | 5 | 13 | 5 |
|  | 16.As aCommittee Member I want to Fetch all the responses  so that I can Generate graphical view for the same | 8 |

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| --- | --- | --- | --- | --- |
| Process-1 | Acquire the visitor profile and purpose | SP | IC | IP |
|  | 1.As aCommittee Member I want to Collect the details of the visitor so that I can Match with the database | 2 | 17 | 1 |
|  | 2.As aCommittee Member I want to Match with the database so that I can Inform the user about it | 3 |
|  | 3.As aCommittee Member I want to Collect the unique visitor number so that I can Notify the concerned users about the daily help | 2 |
|  | 4.As aCommittee Member I want to Group all the past responses against the visitor so that I can Identify his threat profile | 8 |
|  | 5.As aCommittee Member I want to Make a new entry against the visit so that I can Record the response | 2 |
|  | 6.As aCommittee Member I want to Update the skills of the daily help so that I can Increase the utilization of the daily help | 8 | 8 | 2 |
|  | 7.As aCommittee Member I want to Generate a unique visitor number so that I can Generate a unique visitor number | 13 | 16 | 3 |
|  | 8.As aCommittee Member I want to Group the visitors so that I can Analyze the visitors’ profiles | 3 |

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| --- | --- | --- | --- | --- |
| Process-2 | Record the visitor against the purpose | SP | IC | IP |
|  | 1.As aCommittee Member I want to Fetch the details about the purpose of visit so that I can Record the response against the visit | 3 | 18 | 1 |
|  | 2.As aCommittee Member I want to Fetch the past responses about the visitor so that I can Analyze the visitor’s capability in providing the service | 5 |
|  | 3.As aCommittee Member I want to Obtain the details of the consumer who is concerned so that I can Communicate the details to the former | 8 |
|  | 4.As aCommittee Member I want to Record the entry and exit time so that I can Enable customers to track | 2 |
|  | 5.As aCommittee Member I want to Match the purpose with a category so that I can Analyze the purpose | 8 | 8 | 2 |
|  | 6.As aCommittee Member I want to Fetch the similar visitors so that I can Update visitor data | 13 | 19 | 3 |
|  | 7.As aCommittee Member I want to .Launch a form to record the visit for the purpose so that I can Analyze the importance of the service | 3 |
|  | 8.As aCommittee Member I want to Launch a form to record the purpose so that I can Update the list of services | 3 |

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| --- | --- | --- | --- | --- |
| Objective-2 | Grant Entry to the visitor | SP | IC | IP |
|  | 1.As aCommittee Member I want to Notify the user so that I can Grant access to the visitor | 5 | 19 | 1 |
|  | 2.As aCommittee Member I want to Collect the visitor details so that I can Inform the users | 3 |
|  | 3.As aCommittee Member I want to Collect the purpose  so that I can Inform the user | 3 |
|  | 4.As aCommittee Member I want to Make a Satisfiability chart so that I can Let the user analyze | 8 |
|  | 5.As aCommittee Member I want to Recognize the type of service so that I can Identify the urgency to notify | 8 | 8 | 2 |
|  | 6.As aCommittee Member I want to Check the status of the consumer so that I can Decide the medium of communication in order to inform | 3 | 20 | 3 |
|  | 9.As aCommittee Member I want to Fetch the details of the consumer so that I can Contact the former | 3 |
|  | 10.As aCommittee Member I want to Record the response by the user so that I can Analyze and categorize the visit | 2 |
|  | 11.As aCommittee Member I want to Fetch the entry time and exit time so that I can Notify the user | 2 |
|  | 12.As aCommittee Member I want to Fetch the profile of the visitor so that I can Alert the user about the threat level | 3 |
|  | 15.As aCommittee Member I want to .Fetch the details of the visit so that I can Generate a message to convey the former | 3 |
|  | 16.As aCommittee Member I want to .Collect the response of the user so that I can Allow or disallow the visitor | 2 |
|  | 7.As aCommittee Member I want to Show ratings so that I can Tell how good the visitor is | 5 | 20 | 4 |
|  | 8.As aCommittee Member I want to Demonstrate the skill set possessed by the service provider so that I can Provide the customer with information to let him decide | 5 |
|  | 13.As aCommittee Member I want to Develop a facility to choose the services so that I can Provide a facility to customers to choose the services | 5 |
|  | 14.As aCommittee Member I want to Display visitor profiles so that I can View all statistics | 5 |

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| --- | --- | --- | --- | --- |
| Process-1 | Notify the concerned user | SP | IC | IP |
|  | 1.As aCommittee Member I want to Fetch the details of the user so that I can Use it to notify the user | 3 | 19 | 1 |
|  | 2.As aCommittee Member I want to Check the availability of the user so that I can Decide whether to notify the user | 5 |
|  | 3.As aCommittee Member I want to Decide whether to notify the user so that I can UNderstand its urgency | 8 |
|  | 8.As aCommittee Member I want to Accept the unique visitor number so that I can Fetch the details by matching with the database | 3 |
|  | 4.As aCommittee Member I want to Check the status of the user so that I can Choose the appropriate communication medium | 3 | 19 | 2 |
|  | 5.As aCommittee Member I want to Establish connection with the third party services so that I can To communicate with the user | 13 |
|  | 6.As aCommittee Member I want to Fetch the details of the visit so that I can Generate the message | 3 |
|  | 7.As aCommittee Member I want to Generate the content to be delivered as the notification so that I can Deliver the message to the user | 5 | 5 | 3 |

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| Process-2 | Record response against the visitor | SP | IC | IP |
|  | 1.As aCommittee Member I want to Design a form  so that I can Record the responses | 5 | 20 | 1 |
|  | 2.As aCommittee Member I want to Design the UI of the form so that I can Make the form responsive and collect the details | 5 |
|  | 5.As aCommittee Member I want to Design a feedback form so that I can Obtain feedback about the service | 5 |
|  | 8.As aCommittee Member I want to Display the various services so that I can Show them to the customers | 5 |
|  | 3.As aCommittee Member I want to Fetch the response so that I can Store it in the database | 2 | 14 | 2 |
|  | 4.As aCommittee Member I want to Fetch the visit details so that I can Generate the content of the form | 2 |
|  | 6.As aCommittee Member I want to so Insert a new entry against the visitor in database that I can Store the feedback and responses against the visitor | 2 |
|  | 7.As aCommittee Member I want to Categorize the responses so that I can Analyze the types of visits | 8 |

**User Stories Goal 6 - Manage facilities per user**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Objective-1 | Understand the facility requested | SP | IC | IP |
|  | 8.As aCommittee Member I want to Fetch the history of facilities requested so that I can Visualize the trends | 1 | I1 = 17 | 1 |
|  | 12.As aCommittee Member I want to Generate the demand graph so that I can Understand the request statistics | 3 |
|  | 15.As aCommittee Member I want to Calculate the validity of the facility so that I can Ensure fair and sustainable usage of the facility | 5 |
|  | 1.As aCommittee Member I want to Fetch details of the facility so that I can Analyze the facility | 5 |
|  | 7.As aCommittee Member I want to Create an entry for the facility so that I can Record the response against it | 3 |
|  | 10.As aCommittee Member I want to Fetch the entry for the facility so that I can Update the status | 5 | I2 = 15 | 2 |
|  | 2.As aCommittee Member I want to Fetch the user details so that I can Check the accessibility of the user | 8 |
|  | 4.As aCommittee Member I want to Check for the availability of the facility so that I can Provide the facility | 2 |
|  | 3.As aCommittee Member I want to Develop the form so that I can Record response from the user | 8 | I3 = 18 | 3 |
|  | 13.As aCommittee Member I want to Categorize the facility so that I can Analyze the facility request status | 5 |
|  | 9.As aCommittee Member I want to Contact the third party providers so that I can Deliver the facility | 5 |
|  | 5.As aCommittee Member I want to Transfer the request to other users concerned so that I can Analyze whether the facility can be provided | 1 | I4 = 18 | 4 |
|  | 16.As aCommittee Member I want to Fetch the penalty rules so that I can Calculate penalty if any | 8 |
|  | 11.As aCommittee Member I want to Use communication forum so that I can To contact the concerned users | 3 |
|  | 6.As aCommittee Member I want to Fetch the database concerned so that I can Update the database | 5 |
|  | 14.As aCommittee Member I want to Generate request result statistics so that I can Suggest changes | 1 |

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| Process-1 | Check for the availability of the facility | SP | IC | IP |
|  | 3. As aCommittee Member I want to Get details of the user so that I can Analyze the user’s profile. | 8 | I1 = 18 | 1 |
|  | 8. As aCommittee Member I want to Categorize the facility so that I can Match with the database. | 5 |
|  | 6. As aCommittee Member I want to Fetch the databases of the facilities and resources so that I can Analyze the availability of the facility. | 5 |
|  | 1. As aCommittee Member I want to Generate from to accept the request so that I can Allow customer to request a facility. | 3 | I2 = 16 | 2 |
|  | 4. As aCommittee Member I want to Identify other users so that I can Involve them while granting the facility. | 5 |
|  | 7. As aCommittee Member I want to Transfer the request to other users so that I can To allow the users to decide whether facility can be provided. | 8 |
|  | 2. As aCommittee Member I want to Design a UI to categorize facility so that I can Streamline the process. | 13 | I3 = 18 | 3 |
|  | 5. As aCommittee Member I want to Contact the third party so that I can Provide the facility physically. | 5 |

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| --- | --- | --- | --- | --- |
| Process-2 | Record the result against the user | SP | IC | IP |
|  | 6. As aCommittee Member I want to Launch a feedback form so that I can Know the effectiveness. | 3 | I1 = 19 | 19 |
|  | 2. As aCommittee Member I want to Check for the status of the process so that I can Update the database. | 8 |
|  | 7. As aCommittee Member I want to Fetch the details of the facility along with results so that I can Generate the content for feedback form. | 8 |
|  | 4. As aCommittee Member I want to Generate a message about the results so that I can Notify the user about it. | 5 | I2 = 18 | 18 |
|  | 1. As aCommittee Member I want to Obtain the details of the facility so that I can Store in the database. | 8 |
|  | 8. As aCommittee Member I want to Make an entry in the database so that I can Store the feedback. | 5 |
|  | 5. As aCommittee Member I want to Calculate charges for the facility so that I can Store as a part of maintenance charges. | 8 | I3 = 13 | 13 |
|  | 3. As aCommittee Member I want to Fetch the databases of the rules, resources so that I can Update them accordingly. | 5 |

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| Objective-2 | Bill Management | SP | IC | IP |
|  | 6. As aCommittee Member I want to Fetch the due date of the bill so that I can Generate content for notification. | 8 | I1 = 18 | 1 |
|  | 10. As aCommittee Member I want to Create entry for the transaction so that I can Store the response in database. | 5 |
|  | 5. As aCommittee Member I want to Establish connection with third party services so that I can Notify the user about the bill. | 5 |
|  | 11. As aCommittee Member I want to Calculate the time period for bill payment so that I can Do not trouble the user with notifications. | 13 | I2 = 19 | 2 |
|  | 14. As aCommittee Member I want to See graphical representation of the responses so that I can Understand its efficiency. | 5 |
|  | 1. As aCommittee Member I want to Fetch details about the user so that I can Obtain the bills related to the user. | 1 |
|  | 15. As aCommittee Member I want to Calculate the frequency period of notification so that I can Make the user not ignore the notification. | 8 | I3 = 19 | 3 |
|  | 4. As aCommittee Member I want to Check availability of the user so that I can Decide the communication medium. | 8 |
|  | 13. As aCommittee Member I want to See a responsive feedback form so that I can Let the user lodge requests for managing a new bill. | 3 |
|  | 9. As aCommittee Member I want to Generate statistics of the feedback so that I can Estimate satisfiability of the customers. | 5 | I4 = 15 | 4 |
|  | 2. As aCommittee Member I want to Fetch the details of a particular bill so that I can Calculate the dues to be cleared. | 5 |
|  | 7. As aCommittee Member I want to Launch bill payment form so that I can Display the bills to be paid. | 5 |
|  | 12. As aCommittee Member I want to Graph all the transaction history so that I can Measure the effectiveness of the goal. | 8 | I5 = 20 | 5 |
|  | 16. As aCommittee Member I want to Fetch the maintenance charges details so that I can Display the breakdown of the maintenance charges applied. | 8 |
|  | 3. As aCommittee Member I want to Identify the category of the bill so that I can Decide the third party service to be connected to system. | 2 |
|  | 8. As aCommittee Member I want to Launch feedback form so that I can Record feedback. | 2 |

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| --- | --- | --- | --- | --- |
| Process-1 | Estimate the bills due per user | SP | IC | IP |
|  | 7. As aCommittee Member I want to Launch a page for payment so that I can Navigate to the appropriate website. | 3 | I1 = 19 | 1 |
|  | 5. As aCommittee Member I want to Find out the due date of the bill so that I can Calculate the amount to be paid for that bill and its urgency. | 8 |
|  | 4. As aCommittee Member I want to Infer the third party service so that I can Establish connection with third party service. | 8 |
|  | 1. As aCommittee Member I want to Fetch a user profile so that I can Use them to generate the content for form. | 13 | I2 = 18 | 2 |
|  | 8. As aCommittee Member I want to Create an entry for the transaction so that I can Store the response history. | 5 |
|  | 3. As aCommittee Member I want to Acquire the details of each bill so that I can Calculate the dues to be paid. | 5 | I3 = 18 | 3 |
|  | 2. As aCommittee Member I want to Launch a form asking for acquiring types of bill so that I can Store them in the database. | 5 |
|  | 6. As aCommittee Member I want to Check the availability of the user so that I can Decide the communication medium for notification. | 8 |

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| --- | --- | --- | --- | --- |
| Process-2 | Provide gateway to clear the dues | SP | IC | IP |
|  | 3. As aCommittee Member I want to Be notified periodically so that I can Never miss any updates. | 8 | I1 = 18 | 1 |
|  | 8. As aCommittee Member I want to See a system that does not mix details of several bills so that I can Experience hassle free transactions and do not repeatedly have to enter the details. | 5 |
|  | 1. As aCommittee Member I want to See impressive and simple to use GUI so that I can carry out all the transactions easily. | 5 |
|  | 2. As aCommittee Member I want to See personalized list of bills so that I can Keep a track of the bills with ease. | 13 | I2 = 18 | 2 |
|  | 6. As aCommittee Member I want to Have all the dues correctly calculated so that I can Plan the expenditure. | 5 |
|  | 7. As aCommittee Member I want to See a responsive and secured form accepting the details about several bills so that I can Input all the details. | 5 | I3 = 16 | 3 |
|  | 5. As aCommittee Member I want to See only one gateway so that I can Navigates to the appropriate website. | 8 |
|  | 4. As aCommittee Member I want to Receive precise and meaningful notifications so that I can Understand the bill to be paid. | 3 |

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No: 8

**Society Management System**

**System Construction and Software Configuration Management**

***21-07-2017***

***Version 1.0***



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| --- | --- | --- | --- |
| Project Group Information | | | |
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| 03 | **161288** | **Ameya Ekbote** | **Developer** |
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| 48 | **161563** | **Apurv Choudhari** | **Designer** |

**Approved By: Dr M. R. Dube**

**Academic Year: 2018-19 Semester: I**

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# INTRODUCTION

# *The software engineering community realized that software architecture is not only about structures (components and interfaces), but also about system behavior (interaction between components, protocols). Furthermore, this community introduced an architectural design phase in the system life cycle, in which requirements should be satisfied and which should serve as a basis for detailed design activities. Researchers and engineers in software engineering have adopted the term 'architecture' as well. Nevertheless, there is no consensus about the subject; no universally-accepted definition of the term 'architecture' is agreed upon.*

# *Perry and Wolf (1992) consider a software architecture as a set of architectural elements that have a particular form. Similar to Zachman and Van Waes, they distinguish three different classes of architectural elements: processing, data, and connecting elements. Perry and Wolf consider an architecture as a necessary framework in which requirements are satisfied and which serves as a basis for the design.*

# *Garlan et al. (1995) stated that a system's architectural design is concerned with describing its decomposition into computational elements and their interactions. Design tasks at this level include organizing the system as a composition of components; developing global control structures; selecting protocols for communication, synchronization, and data access; assigning functionality to design elements; physically distributing the components; scaling the system and estimating performance; defining the expected evolutionary paths; and selecting among design alternatives.*

# *Soni et al. (1995) stated that software architecture is concerned with capturing the structures of a system and the relationships among the elements both within and between structures. Software architectures describe how a system is decomposed into components, how these components are interconnected, and how they communicate and interact with each other. Based on a survey on the role of architecture in the design and development of large systems within Siemens, Soni et al. notice that different structures are used at different stages of the development process. Each structure describes the system from a different perspective.*

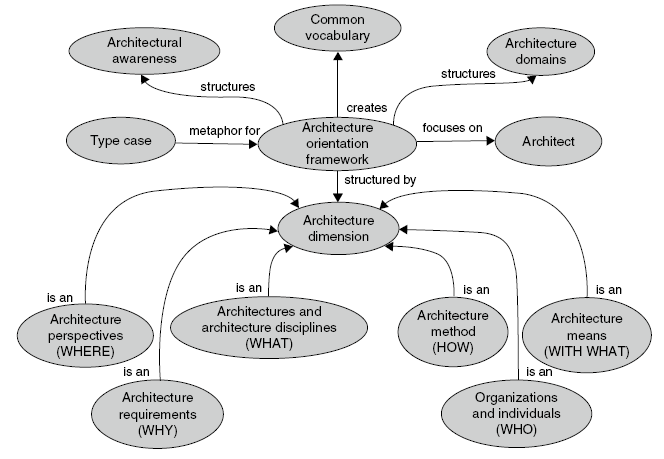
# *Soni et al. argue that the four different architectures they distinguished are needed because of the growing complexity of software throughout history (see Figure 1.3). Initially, only the code architecture was required. The module and execution architecture became necessary when systems became larger and distributed. Now, software engineers would like to use communicating objects and assemblies of reused components. Therefore, a high-level structure is described in the form of a conceptual architecture. On the other hand, Zachman and especially Van Waes reason that their various architectures are wanted as representation for each of the involved actors.*

# *Garlan and Perry (1995) found that the term 'architecture' is used in a number of ways in software engineering. Among the various uses are a) the architecture of a particular system, as in 'the architecture of this system consists of the following three components,' b) an architectural style, as in 'this system adopts a client-server architecture,' and c) the general study of architecture, as in 'the papers in that issue are about architecture.'*

# *A discussion group at Carnegie Mellon University's Software Engineering Institute developed a typical definition: the structure of the components of a program/system, their interrelationships, and principles and guidelines governing their design and evolution over time. They represent a spectrum in the software architecture community about the emphasis that should be placed on architecture - its constituent parts, the whole entity, the way it behaves once built, or the process of building it. Taken together, they reflect the various aspects of software architecture.*

# *Software architecture is concerned with the design and implementation of IT systems. From the viewpoint of architectural activity, software architecture covers the steps necessary to design and implement architecture. With regard to the structural aspect of architecture, software architecture describes the structures of IT systems. From this point on, the terms “IT system” and “system” are used synonymously provided no explicit differentiation is necessary. A system is a unit that consists of integrated software and hardware building blocks and exists for the purpose of fulfilling a functional objective. To achieve this objective, it communicates with its environment and must take account of the conditions defined by the environment.*

# *http://www.home.zonnet.nl/azwegers/thesis/figures/2_2.gif*



# ARCHITECTURE OBJECTIVES

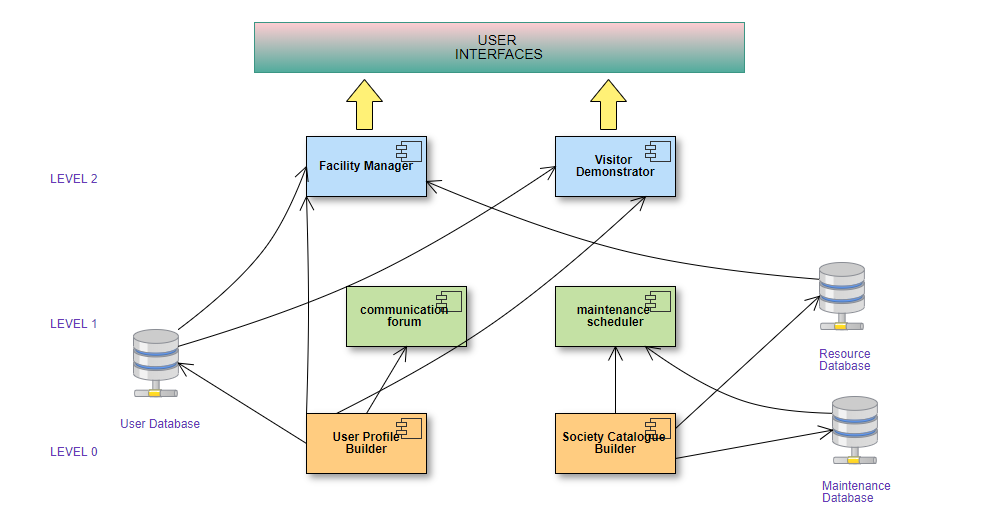
* ***To manage complexity****: An architectural model allows one to present the essence of a complex system in a (simple) model. An architectural model supports the ability to comprehend complex systems; it presents them at a level of abstraction at which a system's high-level design can be understood. It supports the analysis of relationships as an aid to understand complexities in a design environment. In particular, an architecture is needed in complex, dynamic environments (Van Waes, 1991). Zachman states that the increased scope of design and levels of complexity of system implementations are forcing the use of architectural models for defining and controlling the interfaces and the integration of the system components (Zachman, 1987). Architectural models abstract away from details instead of from the essential complexity. Brooks claims that 'the complexity of software is an essential property, not an accidental one' (Brooks, 1995; p. 183). Descriptions of a software entity that abstract away its complexity often abstract away its essence.*
* ***To serve as a set of specifications****: An architecture may be seen as a result of the design process. It is laid down in specifications, which are derived from the requirements, and from which the desired system can be built. Specifying an architecture is concerned with the specification of components, their interactions, and the constraints on these entities and their interactions. These unambiguous specifications define the scope of future development activities, and serve as a basis for further design and implementation activities.*
* ***Means of communication****: Furthermore, an architectural model may play the role of a means of communication during a system (re-)design process. The architect can use it to visualise various aspects of the system to be designed, thus providing the various parties concerned with a basis for discussion and decision-making. By producing order in chaos, architectural models help each party to clarify its perception of the problem. Visualisation and explanation of the relevant aspects of the problem area, and the possible relationships between them, supports the various actors to focus their attention on the essential elements, thus providing a basis for discussion of the problems.*
* ***To indicate the most vital system elements****: Furthermore, the architecture determines the nature and quality of a system. As such, an architectural model indicates the invariant or most vital system elements, which must be treated carefully during system re-design. Systems evolve and are adapted to new uses, just as buildings change over time and are adapted to new uses. One frequently accompanying property of evolution is an increasing brittleness of the system, caused by violations of the architecture. Violations of the architecture frequently lead to an increase in problems in the system and contribute to an increasing resistance to change, or at least to changing gracefully.*
* ***Means to reduce the impact of changes****: Another role of an architecture involves its contribution to the effective re-design of a system. The architecture should reduce the impact of changes to the lower component levels, and to as few components as possible. Both for shop floor control systems and for products, it is advantageous to use as many parts of the existing system or product design as possible. In a re-engineering trajectory, an architectural model of the system allows one to pinpoint and discuss the areas requiring major change, and to integrate the new specifications into the existing model. Furthermore, architectural change is not so much determined by the system components, as well by the interfaces between these components; the ease with which components can be modified, replaced, or with which the system can be extended by new components is dependent on the extent to which the interfaces of the new components match those of the old ones.*
* ***Means to gain strategic benefits****: Finally,(product) architecture may have certain strategic importance for a company. The development of a new product brings together a wide range of technologies. Only a few of these technologies contribute to ultimate competitive advantage. Successful companies do not compete on (and even give away) the enabling technologies on which their core utility is based. By the architectural design of functions that can be filled in by cheap, standard components, companies profit from the strong competition in the markets for these components, and are free to focus on their true sources of competitive value. In addition, a company might extend the value of its product by publishing the product's interfaces to the outside world. Other enterprises might use this product as an indispensable part for their own products*

# SYSTEM DESIGN SPECIFICATION

*A modular architecture may naturally result in a layered architecture; modules are assigned to specific layers. Layers reflect design decisions based on allowable relations and interfacing constraints. The layers in an architecture represent allowable interfaces among modules. Modules within a layer can communicate with each other. Modules in different layers can communicate with each other only if their respective layers are adjacent (Soni et al., 1995). A layer builds on its underlying layer, which at its turn builds on its underlying layer as well. Consequently, a layer explicitly uses the functionality of its underlying layer, and implicitly uses the functionality of all layers underneath its underlying layer.*

*Layers are used mainly to solve mapping problems. The mapping task is decomposed in layers: each layer performs a specific part of the mapping. In this sense, the division in layers is part of an architecture. The advantage of layers is the flexibility: changes can be made inside a layer without affecting other layers. A disadvantage of a layered architecture is its rigidity: new layers are hard to be shoved in between existing layers, since this requires a (major) change of interfaces. Examples of the application of layers in mappings are:*

* *the targets of an enterprise must be mapped on its physical processes; therefore, a strategical, tactical, and operational layer are distinguished;*

**

|  |  |
| --- | --- |
| Layer-0 | Input |
| Purpose | The Data Access and Acquiring is done in this layer. |
| Related Components | Goal 1 and Goal 2 components |
| Software Interfaces | Layer 3 and Layer 4 Interfaces |
| Composition Style | **Aggregation** |
| Communication Pattern | **Vertical** |
| Implementation Steps | 1. Accept the user details entered by the user  2. Validate received data  3. Validate the user  4. Accept the resource details entered by valid user  5. Populate Resource database  6. Accept the maintenance details  7. Populate the Maintenance Database  8.Analyse the facilities for each user  9.Categorize the users |

|  |  |
| --- | --- |
| Layer-1 | Process |
| Purpose | The User Query Processing is done in this layer of components. |
| Related Components | Goal 4 and Goal 5 components |
| Software Interfaces | Layer 1 and Layer 4 Interfaces |
| Composition Style | **Composition** |
| Communication Pattern | **Horizontal** |
| Implementation Steps | 1. Accept Query on Communication Forum  2. Extract the attributes required by the query  3. Gain Database access  4. Verify Database access  5. Transfer the requests to the concerned user  6. Validate values from the response  7. Connect to the third party vendors  8.Calculate maintenance charges |

|  |  |
| --- | --- |
| Layer-2 | Output |
| Purpose | This layer describes the overall output the system shall generate. |
| Related Components | Goal 4 and Goal 5 components |
| Software Interfaces | Layer 1 and Layer 4 Interfaces |
| Composition Style | **Composition** |
| Communication Pattern | **Horizontal** |
| Implementation Steps | 1. Demonstrate Facilities per user  2.Categorize the users  3. Allow the user to track the visitors  4. Provide payment gateway  5.Demonstrate Maintenance charges per user |

|  |  |
| --- | --- |
| Layer-3 | Data Processing |
| Purpose | This Layer is used for database management system. |
| Related Components | Goal 3 and Goal 6 components |
| Software Interfaces | Layer 1 and Layer 4 Interfaces |
| Composition Style | **Aggregation** |
| Communication Pattern | **Horizontal** |
| Implementation Steps | 1. Access Data  2. Remove data abnormalities  3. Remove unnecessary database  4.Categorize the users  5.Demonstrate visitor statistics  6.Analyse dangerous visitors, potential daily help  7. Statistical Modelling  8. Check and cross-validate model  9. Tune model |

|  |  |
| --- | --- |
| Layer-4 | User Interfaces |
| Purpose | Users will interact with system by using this layer. |
| Related Components | User Interfaces. |
| Software Interfaces | Layer 3 and Layer 4 Interfaces |
| Composition Style | **Generalization** |
| Communication Pattern | **Vertical** |
| Implementation Steps | 1. Create Website  2. Host Server  3. Access database to float the forms to the users  4. Display society information  5. Display facilities provided by the society  6. Display login page for society members  7. Display Sign In page for new members of society  8. Generate navigation elements |

# INTRODUCTION

*As identified in the Software Configuration Management (SCM) Plan Standard, the implementation of a formal and structured SCM environment ensures that all Software Development product artefacts are baselined and maintained in a stable environment.*

*This SCM Procedures identifies the procedures that conform to the requirements identified in the SCM Plan Standard. This document is intended to provide a uniform approach to SCM for the software product being developed or modified by projects regardless of location or staffing model. It describes the procedures for managing and controlling the development, delivery, and maintenance of the specific Software Product <Product name>.*

*The SCM Procedures applies to <Product Name> under development or maintenance. It also applies to all documentation products and other project or program initiative documentation that management communicates now or in the future as required to be controlled by SCM procedures. Each project associated with the product will develop work instructions for the implementation of these procedures.*

*The primary audience for this document consists of staff assigned to projects where <Product Name> is within scope are required to implement and apply SCM procedures.*

# ROLES AND RESPONSIBILITIES

*<This section identifies the specific roles and responsibilities as they relate to SCM, each Project will identify the role that will be responsible for the Product. The SCM Manager will create work instruction documents to assist the project team members with the responsibilities within their assigned role. Each Project will identify who is assigned to each role by having one roles and responsibilities table below per project by coping table for each project and pasting directly below the previous table provided.>*

*The table below is a specific list of the personnel who may be members of Project teams and SCM teams along with their assigned roles and responsibilities as they relate to SCM. The Roles defined herein can sometimes be overlapped with other roles and responsibilities depending on the environment. In addition, one person allocated for a specific role as listed below may often have the responsibility of other roles.*

|  |  |
| --- | --- |
| *<Named Project(s)>* ***Role*** | *<Named Project(s)>* ***Responsibility*** |
| *Program Manager/*  *Project Management*  Zaid Naikwadi | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions for each Product being worked as part of the Program/Project.* * *Ensures proper execution of the SCM Plan Standard.* * *Oversees the SCM process.* * *Assesses and evaluates all other change requests.* * *Establish appropriate Change Control Board (CCB).* * *Submit CCB baseline information.* * *Identify dependent projects.* * *Establish/revise required artifacts.* * *Creation of SCM Procedures and work instructions for each VA product they are assigned.* |
| *Software Configuration Manager*  Prerona Chaudhuri | * *Educates project team members in SCM “best practices.”* * *Develops and maintains SCM Procedures and work instructions for each VA product they are assigned.* * *Establishes, promotes, and releases baselines.* * *Performs or validates interim and final builds.* * *Prepares release package, release archives and Version Description Documents (VDD).* * *Accountable for instituting the established processes and reporting progress statistics based on change requests.* * *Identifies product baselines as necessary of all products within their assigned Projects.* * *Responsible for SCM audits and necessary status accounting related to the product.* * *Conducts audits at scheduled milestones.* |
| *Development Manager/Leads*  Ameya Ekbote | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Submits build/release requests.* * *Coordinates development activities and assigns tasks.* * *Ensures all SCM Procedures and work instructions are implemented and followed for all software, documentation, and/or any other components for which they are responsible.* * *Ensures all developers’ work within the specified SCM process and related guidelines as specified in the SCM Procedures and work instructions.* * *Attends the CCB meetings and provide technical details, as required.* |
| *Developers/System Administration/Functional/ Technical Analysts/DBAs/System Administration*  Apurv Choudhari | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Maintain accurate, detailed information for all assigned change requests (CRs), in the CR database, related to the applicable development detail of the CRs lifecycle.* * *Provide impact analysis reporting for the CCB approved problems or changes, including documentation of suggested solutions to facilitate CCB disposition activities.* * *Documentation of build, release, and installation instructions.* |
| *Software Change Manager*  Prerona Chaudhuri | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Governing body for reviewing and approving change requests under the SCM Procedures and work instructions.* |
| *Technical Writer*  Zaid Naikwadi | * *Develops technical deliverable documentation to support the software deliverables.* * *Provides editing, formatting, and graphics support for documentation.* * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* |
| *Software Quality Assurance Manager*  Prerona Chaudhuri | * *Develops and maintains artifacts following proper version control procedures defined in the SCM Procedures and work instructions.* * *Ensures all SQA Analysts work within the SCM Procedures and work instructions.* * *Verifies that only SCM-approved deliverables are installed into the test environment(s).* * *Ensures that SQA Analysts are always testing from official SCM deliverables.* * *Attends CCB meetings and provides testing details, as required.* * *Reviews status accounting related to the project.* * *Reviews deliverable artifacts.* |
| *Software Quality Assurance Analysts/ Testing Analyst/*  Ameya Ekbote | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Responsible for testing installed releases, as SCM provides releases from development.* * *Update CRs assigned to them according to test activity results.* * *Determines Pass/Fail for each CR scheduled for a release.* * *Opens CRs (defect and or enhancements) for any newly discovered problems during testing.* |
| *Release Manager/ Implementation Team/ EVS/Operations Team/*  Zaid Naikwadi | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions document.* * *Coordinates the release and deployment of software to the existing sites and the newly activated sites following SCM Procedures and work instructions.* * *Assures products meet all exit criteria prior to release* * *Assures change control and SCM processes have been followed as defined in the SCM Procedures and work instructions.* |
| *Process Engineer*  Apurv Choudhari | * *Develops and maintains artifacts following proper version control procedures using the SCM Procedures and work instructions.* * *Guides the Team members in following the EPG published process maps.* |

# CONFIGURATION IDENTIFICATION

*<This section describes the Configuration Identification of the Software Product and providing a unique identity to the product, it’s components, and associated documentation, including the definition of appropriate level of identification. In order to identify the configuration item(s)(CI) s that are to be placed under SCM control, the SCM Manager must understand that Configuration Identification is the process of selecting the CIs and the development items subject to Change Control for a product, assigning unique identifiers to them, and recording their functional and physical characteristics in technical documentation.*

*The following items are subject to configuration identification for software products as per the SCM Plan Standard and are to be placed under SCM control:*

* *Products that are delivered to the customer*
* *Designated internal work products, including source code used to generate the deliverable*
* *Commercial off the Shelf (COTS) products*
* *Non-Developmental Items (NDI) products*
* *Tools*
* *Other items that are used in creating and describing these work products, including documentation describing the function and physical requirements and characteristics of the product*

*These items consist of the set of currently approved or conditionally approved technical documentation, source code, executable images, and object files that identify and describe the functional and physical characteristics of the application.*

***Commercial off the Shelf (COTS) products***

*A COTS item is defined as a commercial item that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and:*

* *Has been sold, leased, or licensed to the general public; or has been offered for sale, lease, or license to the general public*
* *Has been sold or offered for sale in substantial quantities in the commercial marketplace*
* *Has been offered to the Government, under a contract or subcontract at any tier, without modification, in the same form in which it is sold in the commercial marketplace*

*COTS items shall be identified within the system configuration by the manufacturers name, item identification, and version in sufficient detail to allow re-acquisition of the identical item. If a COTS item is changed in such a manner that it no longer meets the definition of COTS, the item must be reclassified by its new classification.*

***Non-Developmental Items (NDI) products***

*An NDI is defined as any COTS item that requires only minor tailoring of a type customarily available in the commercial marketplace, and is within the normal function of the COTS item. This tailoring does not include modification or customization beyond what is normally provided in the commercial marketplace and is outside of the provider’s normal pricing structure.*

*NDI items shall be identified within the system configuration by the manufacturers name, item identification, version, and tailoring in sufficient detail to allow re-acquisition of the identical item. If a NDI item is changed in such a manner that it no longer meets the definition of NDI the item must be reclassified by its new classification*

***Modified Item***

*A modified item is defined as a COTS or GOTS item which is customized for a specific purpose and to meet specific requirements beyond the normal function of the COTS or GOTS item is defined as a Modified item*

***Third Party Item***

*A Third-Party Item is defined as a new item or modified item developed by a subcontractor for a specific purpose and to meet specific requirements.*

***Developmental Item***

*A Developmental Item is defined as a new item or modified item developed for a specific purpose and to meet specific requirements.*

|  |  |
| --- | --- |
| COTS USED |  |
| NDI USED | Jupyter Notebook, NumPy, SciPy, Pandas, Scikit-Learn, Net Beans, Bootstrap, AngularJS |
| MODIFIED ITEMS | None3 |
| THIRD PARTY ITEMS | None |
| DEVELOPMENTAL PRODUCTS | None |

# COMPONENT SPECIFICATION: GOAL-1

|  |  |
| --- | --- |
| ***Component Name*** | **User Profile Builder** |
| ***Audience*** | Consumers |
| ***Responsibilities*** | Building User Profiles, Validating Data |
| ***Processing*** | 1. Ensure Data Authenticity  2. Create New User Profile  3. Authenticate User  4. Provide Society Membership  5. Collect User Information  6. Insert Data Into Database  7. Validate User Data  8. Request for Profile Acceptance  9. Release User Controls  10. Give Appropriate User Privileges  11. Secure Database  12. Fill Appropriate Information  15. Verify Account With OTP  16 Sign-up With The System |
| ***Reference*** | Profile Builder |
| ***Constraints*** | Free Player Data Availability Restrictions |
| ***Composition*** | Sub - System 1, Module 1 |
| ***Resources*** | Database 1, 4 tables |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | Cleans Data, Checks for Abnormality |

## Procedure Definition Language (Pseudo-code):

INTERFACE: UserProfileBuilder interfaces

DO:

mysql\_connect(DATABASE);

connect\_to(NET)

INITIALIZE PYTHON SCRIPT FOR scraping

BEGIN

LAUNCH FORMS FOR USER REGISTRATION

ACCEPT INPUT FROM USER

VALIDATE THE DATA ENTERED

MATCH THE SOCIETY MEMBERSHIP DETAILS FROM THE DATABASE

IF THE DATA MATCHES:

CREATE AN ENTRY FOR THE NEW PROFILE

ELSE:

LAUNCH A FORM FOR REQUESTING SOCIETY MEMBERSHIP

END

# COMPONENT SPECIFICATION: GOAL-1 OBJECTIVE-1

|  |  |
| --- | --- |
| ***Component Name*** | **Registration form processor** |
| ***Audience*** | Internal Stakeholders |
| ***Responsibilities*** | To acquire User data |
| ***Processing*** | 1.Request user data  2.Find User Data Sources  3.Create a preliminary database  4.Create a user Data Spyder  5.Formulate database structure  6.Populate User Database  7.Generate a backup  8.Share backup with Project Team  9.Assign database privileges  10.Launch User Profile Page |
| ***Reference*** | Form Loader |
| ***Constraints*** | RDBMS |
| ***Composition*** | Sub - System 1, Module 1 |
| ***Resources*** | Player Database |
| ***Interactions*** | Components: 1 |
| ***Interface/Tasks*** | Acquire Data, Remove Data Abnormalities |

## Procedure Definition Language (Pseudo-code):

INTERFACE: FormLoader interface

DO

design form with suitable headings

accept them from the user

store in the database

BEGIN

decide the suitable headings

run the php files

launch the form on the server

grant the permission to user

verify the user

accept the input

for each column in data loop

if(values of column not in expected range)

report data error

reload the form

else

store in the database

END

# COMPONENT SPECIFICATION: GOAL-1 OBJECTIVE-2

|  |  |
| --- | --- |
| ***Component Name*** | **User Categorizer** |
| ***Audience*** | Society Members |
| ***Responsibilities*** | decide the type of user |
| ***Processing*** | 1.Organise database attributes  2.Design patterns for attributes  3.Conceptualise parameters  4.Prioritise important parameters  5.Draw venn diagram  6.Organise parameters  7.Record formulated observations  8.Correspond with Analysis team  9.Consolidate outline of categorising process  10.Construct final categorising methodology |
| ***Reference*** | Data Acquirer |
| ***Constraints*** | Processing Speed |
| ***Composition*** | Sub - System 1, Module 2 |
| ***Resources*** | User Profile Database, User Category Database |
| ***Interactions*** | Components: 1 |
| ***Interface/Tasks*** | categorize the user |

## Procedure Definition Language (Pseudo-code):

INTERFACE CATEGORIZE\_USER

DO

Ascertain data correctness

Categorize the user

BEGIN

FOR EACH COLUMN IN DATA LOOP

GROUP THE DATA

Decide the category

CATEGORIZE THE USER

MATCH THE CATEGORY WITH THE DATABASE

IF NOT MATCHES THEN

CREATE NEW CATEGORY

ELSE

UPDATE THE USER DATABASE

import database libraries

construct prepared Statement

insert query in that statement

run that query

if(query\_runned)

Insert extracted data into user database

print done

else

print do this process again

END LOOP;

END

# COMPONENT SPECIFICATION: GOAL-2

|  |  |
| --- | --- |
| ***Component Name*** | **Society Catalogue Builder** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | gather accurate, enough information about resources |
| ***Processing*** | 1. Provide Assets Management 2. Manage Assets 3. Record Assets’ usage 4. Perform Availability Check 5. Notify User 6. Consider Facility Limitations 7. Resolve Assets Overlaps 8. Maintain Assets’ Past History 9. Assign Facility to User 10. Optimize Resources |
| ***Reference*** | Society Catalogue Builder |
| ***Constraints*** | MySQL Database |
| ***Composition*** | Sub - System 1, Module 3 |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 5 to 13 |
| ***Interface/Tasks*** | Update Database, Perform Classification of Resources |

## Procedure Definition Language (Pseudo-code):

INTERFACE: Society\_Catalogue\_Builder

DO

Build SOCIETY CATALOGUE

BEGIN

import database libraries

connect to db

decide the suitable headings

If(connected)

verify the user

accept the user details

match with responsibilities assigned to the user

if matches then

Load a form to accept the input

foreach(TABLE table in database):

if table is matches the category:

fetch that table

else

MAKE new table for new categories()

WHILE (All data is not read)

{

Accept all the input

Store in the database

}

Verify(ResourcePosition)

Group\_dataset(ResourcePosition)

}

else

print(“invalid user”)

Else

Print Connection Error

if(user ask to connect again)

connect again

END IF

END

# COMPONENT SPECIFICATION: GOAL-2 OBJECTIVE-1

|  |  |
| --- | --- |
| ***Component Name*** | **Resource Information Extractor** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | Create Resource Registration form,optimal management |
| ***Processing*** | 1.Create platform  2.Maintain all resources  3.Extract resource information  4.Find information of people  5.Identify limitations of resources.  6.Analyse use of resource  7.Survey market values  8.Gather information periodically  9.Establish resource background  10.Administer information extraction |
| ***Reference*** | ResourcePositionFromFile |
| ***Constraints*** | MySQL Database |
| ***Composition*** | Sub - System 1, Module 3 |
| ***Resources*** | User Database ,Category |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | Update Database,Accept input |

## Procedure Definition Language (Pseudo-code):

INTERFACE: ResourceInformationExtractor

DO

Extract Resource Information

BEGIN

import database libraries

connect to db

If(connencted)

foreach(TABLE table in database):

if table is desired:

fetch tht table

ACCEPT THE USER DETAILS

SEARCH FOR THE USER DETAILS IN THE USER DATABASE

Evaluate the responsibilties

if the user is valid:

ACCEPT ALL THE INFORMATION ABOUT THE RESOURCE

VALIDATE THE DATA INPUT

IF (VALIDATED):

UPDATE THE DATABASE

OUTPUT(“SUCCESSFULLY UPDATED”)

ELSE

OUTPUT(“REENTER THE DATA”)

PERFORM THIS PERIODICALLY

else

print(“access denied”)

END

# COMPONENT SPECIFICATION: GOAL-2 OBJECTIVE-2

|  |  |
| --- | --- |
| ***Component Name*** | **Facility Demonstrator** |
| ***Audience*** | Society Members |
| ***Responsibilities*** | provide facility to every user |
| ***Processing*** | 1.Gather user requirements  2.Examine resource requirements per user  3.Examine resource utilization.  4.Identify shortage of resources  5.Keep track of resource utilization  6.Provide details of responsible person  7.Perform resource maintenance  8.Update database  9.Avoid monopolization of resource  10.Record resource usage |
| ***Reference*** | DemonstrateFacilities |
| ***Constraints*** | MySQL Database |
| ***Composition*** | Sub - System 1, Module 3 |
| ***Resources*** | User Database, Resource Database |
| ***Interactions*** | Components: 10 to 18 |
| ***Interface/Tasks*** | Update Database, Analyze facilities applicable to user |

## Procedure Definition Language (Pseudo-code):

INTERFACE: FacilityDemonstrator(User)

DO

Extract User Information

Extract the required Resource Information

BEGIN

Function

Connect to the Resource Database

Connect to the User Database

if(connected) then

for each user in the database:

obtain the society membership

if valid(society membership) then

if owner(user) and staying:

assign all the resources to the user

update the database

else

list out the other facilities

END LOOP

else

print(“error”)

reconnect

END

# COMPONENT SPECIFICATION: GOAL-3

|  |  |
| --- | --- |
| ***Component Name*** | **Maintenance Information Notifier** |
| ***Audience*** | Society Members |
| ***Responsibilities*** | Process available accounting information |
| ***Processing*** | 1. Request Bill Data 2. Store Current Dues 3. Generate User Bills 4. Alert User At End of Each Billing Cycle 5. Calculate Pending Dues 6. Provide Options For Payment Mode 7. Generate Billing Receipts 8. Handle Payment Errors 9. Maintain Payment History 10. Update Successful Transactions |
| ***Reference*** | **Maintenance\_Information** |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system 2, Module 1 |
| ***Resources*** | Maintenance Database, Resource Database, User Database |
| ***Interactions*** | Components: 1 to 10 |
| ***Interface/Tasks*** | Calculate maintenance charges |

## Procedure Definition Language (Pseudo-code):

INTERFACE: MAINTENANCE\_INFORMATION\_NOTIFIER(USER)

DO

fetch the maintenance details

calculate the maintenance charges

notify the user

BEGIN

connect to the maintenance database

connect to the user database

connect to resource database

for each user in the user database:

find out the category of the user

obtain the parameters from the maintenance database

obtain details from resource database

calculate the maintenance charges using the parameters

update the database

check the status of the user

notify the user

END\_LOOP

END

# COMPONENT SPECIFICATION: GOAL-3 OBJECTIVE-1

|  |  |
| --- | --- |
| ***Component Name*** | **Maintenance\_Scheduler** |
| ***Audience*** | Society Members |
| ***Responsibilities*** | keep track of accounting information,divide total expenditure. |
| ***Processing*** | 1. Access Player Data 2. Remove Abnormalities from Data 3. Generate Player Attributes 4. Group Player Attributes 5. Create Player Profiles 6. Insert Data into Profiles 7. Associate Player profiles 8. Add Player Features 9. Demonstrate Important Player information 10. Generate Player Features |
| ***Reference*** | Maintenance\_information |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system 2, Module 1 |
| ***Resources*** | User Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | apply maintenance charges |

## Procedure Definition Language (Pseudo-code):

INTERFACE: MAINTENANCE\_SCHEDULER

DO

Classify the users

Obtain the parameters from maintenance database

BEGIN:

connect to the database

if(connected):

for each user in the database:

obtain the flat type of the user

obtain the user type

check the parameters in the resource database

find out the cost of usage of the facilities

update the database

else

print(“Error”)

reconnect

END

# COMPONENT SPECIFICATION: GOAL-3 OBJECTIVE-2

|  |  |
| --- | --- |
| ***Component Name*** | **Payment Facilitator** |
| ***Audience*** | Residents of the society |
| ***Responsibilities*** | complete all the transactions throughout the financial year |
| ***Processing*** | 1. Pre-process Player Data 2. Associate Player Profiles 3. Generate Player Features 4. Probe Statistical Models 5. Choose Statistical model 6. Train Statistical Model 7. Test Statistical Model 8. Save Trained and Tested Model 9. Decide Statistical Model Parameters 10. Optimize Choices |
| ***Reference*** | Maintenance\_information |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system 2, Module 2 |
| ***Resources*** | User Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | apply maintenance charges. |

## Procedure Definition Language (Pseudo-code):

INTERFACE: PAYMENT\_FACILITATOR  
DO  
  Connect to the database

Connect to the third party websites   
BEGIN

connect to the user database

if(connected):

obtain the due dates

calculate the dues to be paid

devise the periods to notify

check the status of the user

select the communication medium

connect to the third party

notify the user

if connected(user):

provide payment gateway

update database  
else

print(“Error”)

     
END

# COMPONENT SPECIFICATION: GOAL-4

|  |  |
| --- | --- |
| ***Component Name*** | **Communication Forum** |
| ***Audience*** | Society Member |
| ***Responsibilities*** | Provide Communication Facility |
| ***Processing*** | 1. Create Forum 2. Publish New Posts 3. Provide Efficient Communication Platform 4. Pin Administrator Notice 5. Allow Updation Of Posts 6. Allow Deletion Of Posts 7. Form Filling By End User 8. Validating Users Information 9. Warn User In Case Of Inappropriate Data 10. Upvote a Post or Complain |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 2 , Module |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | Get User Messages |

## Procedure Definition Language (Pseudo-code):

INTERFACE Communication Forum

DO

Recognize User Messages

Accept User Messages

Circulate Notices

Important Meetings/Discussions

Avoid Chaos

if(message())

Notify Users

Provide Suggestion Facility

END

# COMPONENT SPECIFICATION: GOAL-4 OBJECTIVE-1

|  |  |
| --- | --- |
| ***Component Name*** | **Accept User Messages** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | Get user messages |
| ***Processing*** | 1. Recognize User 2. Notify for a Message 3. Check User Type 4. Save All Messages With Timestamp 5. Filter Inappropriate Content 6. Delete Too Old Posts 7. Reply To a Post 8. Attach Media If Any 9. Private Message Administrator 10. Circulate Notices |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 2 , Module: 2 |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | Get User Messages and Filter Messages |

## Procedure Definition Language (Pseudo-code):

INTERFACE User Messages

DO

Recognize User

Check User Type

Check Message Contents

Post to Concerned Section

if(message(section))

Notify Concerned Person

if(message(all))

Notify All Members

Provide Attachment and Download Facility

Archive Old Notices

END

# COMPONENT SPECIFICATION: GOAL-4 OBJECTIVE-2

|  |  |
| --- | --- |
| ***Component Name*** | **Recognize User Messages** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | Categorize User Messages |
| ***Processing*** | 1. Categorize Issues 2. Decide Required Actions 3. Generate Bulk Notification 4. Recognize Frequent Issues 5. Provide different platforms 6. Recognize Non-member Messages 7. Provide Attachment Facility 8. Provide Facility to Mark Messages 9. Provide Suggestion Box 10. Provide Discussion Forum |
| ***Reference*** | User Messages |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 2 , Module: 2 |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | Check Messages and Notify Concerned People |

## Procedure Definition Language (Pseudo-code):

INTERFACE Allow Messages  
DO  
 Get Message Details

Get User Details

Find Concerned People  
BEGIN

if(message())

Check Message

Verify Message

Notify Concerned People

Get Status

Archive Messages/Notices

Avoid Unnecessary Messages

Provide Different Sections for Different Departments

END

# COMPONENT SPECIFICATION: GOAL-5

|  |  |
| --- | --- |
| ***Component Name*** | Demonstrate Visitor Statistics |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | Fetch input player id/player name |
| ***Processing*** | 1. Check Past History of Visitor 2. Ask For Owner Permissions 3. Display Information About Visitor 4. Accept Or Decline Visit By Visitor 5. Get Contact Details Of Visitor 6. Get Permission Of Owner 7. View Captured Images Of Visitor 8. Search For Past History Of Visitor 9. Notify The Visitor 10. Store Captured Images in Database |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 2 , Module: 2 |
| ***Resources*** | Player Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | None |

## Procedure Definition Language (Pseudo-code):

INTERFACE Demonstrate Visitors  
DO    
BEGIN  
  Get Visitor Details  
  Notify User  
  Update Database  
  Ask Permission  
  Display Daily Visitors’ Statistics  
    
END

# COMPONENT SPECIFICATION: GOAL-5 OBJECTIVE-1

|  |  |
| --- | --- |
| ***Component Name*** | **Recognize visitor** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | Get Visitor Details |
| ***Processing*** | 1. Store Captured Images in Database 2. Alert Watchman 3. Do Registration Of Visitor 4. Check for Data Correctness 5. Keep Track of Free Parking Space 6. Message Watchman Prior in Case of Known Visitor 7. Categorize Visitors 8. Notify Concerned Owners 9. Record Visit Purpose 10. Ask Owner |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 2 , Module: 2 |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | None |

## Procedure Definition Language (Pseudo-code):

INTERFACE Visitor Statistics  
DO  
 Load Database  
BEGIN  
  if(visitor())

Get Visitor Details

Update Database

Notify Owner

Get Permission  
END

# COMPONENT SPECIFICATION: GOAL-5 OBJECTIVE-2

|  |  |
| --- | --- |
| ***Component Name*** | **Grant Entry to the visitor** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | Allow Visitor |
| ***Processing*** | 1. Store visitor Details 2. Get Confirmation from Owner 3. Keep track of Visitor Entries 4. Generate Statistics 5. Generate Visitor Identification Number 6. Store Visit Details 7. Check Owner Availability 8. Check Vehicle Details 9. Store Exit Time 10. Find Frequent Visitors |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 2 , Module: 2 |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | None |

## Procedure Definition Language (Pseudo-code):

INTERFACE Visitor Entry  
DO  
  
BEGIN  
  Get Visitor Details

if(notpresent(DATABASE))

Insert in DATABASE

else

Update Visitor Entry Data

if(owner\_permission())

Allow

else

Disallow  
END

# COMPONENT SPECIFICATION: GOAL-6

|  |  |
| --- | --- |
| ***Component Name*** | **Manage Facilities Per User** |
| ***Audience*** | Society Members |
| ***Responsibilities*** | Fair Use of Common Facilities |
| ***Processing*** | 1. Request Access For Facility 2. Notify Administrator 3. Grant/ Decline Access For Facility 4. Assignment Of Facility 5. Ensure Availability Of Facility 6. Display All Permissions Per Facility 7. Process Provide facility 8. Notify User 9. Warn User Before Expiration Of Facility 10. Revoke Grant Of Facility |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 3 , Module: 1 |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | None |

## Procedure Definition Language (Pseudo-code):

INTERFACE: - Facility Manager

DO

Get Facilities’ Details

BEGIN

if(CONNECT(DATABASE))

Display All Facilities

Get User Requests

Process User Request

else

Show ERROR

END

# COMPONENT SPECIFICATION: GOAL-6 OBJECTIVE-1

|  |  |
| --- | --- |
| ***Component Name*** | **Understand Facility Requested** |
| ***Audience*** | Stakeholders |
| ***Responsibilities*** | Fetch Facilities’ Details |
| ***Processing*** | 1. Ensure Overlapping Facility Timings 2. Forward User Request to Administrator 3. Cancel Requested Facility 4. Gain Control Over Facility 5. Store Each Data With Timestamp 6. Ensure No Starvation of User 7. Provide Common Gateway 8. Create Visitor Entry 9. Generate Visitor Statistics 10. Store Facilities’ Details |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Environment Issues |
| ***Composition*** | Sub-system: 3 , Module: 1 |
| ***Resources*** | Society Database |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | None |

## Procedure Definition Language (Pseudo-code):

INTERFACE: - Display and Process Facility Requests

DO

Find requests for facilities

Keep track of available facilities

BEGIN

if(request())

if(available())

Accept Request

Change Status

else

Reject Request

END

# COMPONENT SPECIFICATION: GOAL-6 OBJECTIVE-2

|  |  |
| --- | --- |
| ***Component Name*** | **Bill Management** |
| ***Audience*** | Society Members |
| ***Responsibilities*** | Manage Facilities’ related bills |
| ***Processing*** | 1. Check User Availability 2. Fetch Bill Details 3. Fetch Due Dates 4. Get Responsive Feedback 5. Generate Statistics 6. Launch Payment Page 7. Store Payment History 8. Notify Due Dates 9. Get Required User Details 10. Update Payment Details |
| ***Reference*** | Procedure Name |
| ***Constraints*** | Can’t access user accounts |
| ***Composition*** | Sub-system: 3 , Module: 1 |
| ***Resources*** | Third Party Websites |
| ***Interactions*** | Components: 1 to 18 |
| ***Interface/Tasks*** | None |

## Procedure Definition Language (Pseudo-code):

INTERFACE: - Payment Page

DO

Get Payment Details

Get Required User Information

Get Due Dates

Launch Payment Page

BEGIN

Notify User

If(billpay())

Provide Payment Links

Update Payment Details

Update Payment History

END

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

**T.Y. B. Tech.**

**CS 3001: Software Engineering Laboratory**

Assignment No:9

**Society Management System**

**System Review and Acceptance**

***28-11-2017***

!!br0ken!! ***Version 1.0***



|  |  |  |  |
| --- | --- | --- | --- |
| Project Group Information | | | |
| Roll. No. | **Gr. No.** | **Name** | **Roles** |
| 02 | **161374** | **Prerona Chaudhuri** | **Python** |
| 03 | **161288** | **Ameya Ekbote** | **DB, PHP** |
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**Approved By: Dr M. R. Dube**

**Academic Year: 2018-19 Semester: I**

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# INTRODUCTION

*At the time of the scheduled peer review, ensure proper representation and preparation by the reviewers. Provide clarifications on the work products. Present comments and listen to the comments of the other reviewers. Comments can be presented either by page or by reviewer. Keep the comment discussions short with a focus on detection, not correction. Editorial comments are provided separately and are not discussed at the scheduled review.*

*Participate in categorizing comments. The comments will be categorized and documented as errors, defects, and action items. Refer to the definitions for the categorization rules, which are summarized as follows:*

* *Errors (i.e., problems in the material currently under peer review).*

*Optionally, errors are subcategorized as major (affects functionality and/or performance) and minor (does not affect functional- ity and/or performance).*

* *Defects (i.e., problems in materials previously peer reviewed).*

*Optionally, defects are also subcategorized as major and minor.*

*Note: Defects will further be categorized as delivered or undelivered in the program’s change request system.*

* *Action items (i.e., unresolved comments requiring further investigation)*
* *A comment can remain categorized as a comment if the reviewers and presenters agree that there is no error, defect, or action item required.*

*To complete the peer review you must identify errors, defects, and action items to be resolved and documented. If needed, follow the program’s or project’s defined decision-making processes to elevate and reconcile any issues encountered in resolving peer review errors, defects, or action items with appropriate stakeholders. To ensure completion, per- form the following:*

* *Correct all errors and update the peer review information to indicate that the error is resolved.*
* *Submit change request paperwork for all defects. The status and tracking of the defect corrections are then handled through the change request system. The defects associated with the peer review should indicate this transfer and are categorized as resolved, allowing the peer review to be closed.*
* *Resolve and complete all action items. If any action items cannot be completed within the two-week period, these action items should be moved to the program- or project-level action item tracking system. The action items associated with the peer review should indicate this transfer and are categorized as resolved, allowing the peer review to be closed.*

# REVIEW TYPES

*Design and code reviews promise to improve software quality, ensure compliance with standards, and serve as a valuable teaching tool for developers. As with most practices, there are subtle nuances surrounding how they're performed that can dramatically affect their value. In some organizations, reviews are a valuable aspect of the software lifecycle. In others, they are a necessary evil tainted with political bureaucracy and big egos. Suboptimal reviews conducted late in the lifecycle are often misguided due to few objective guidelines that help guide the review process. When used throughout the development lifecycle, code and design quality metrics are valuable inputs to the review process.*

* 1. *Reviews Increase Agility Continuous Integration.*

*Agile practices are abundant, and for many teams interested in increasing their agility, valuable energy and resources have been devoted to improving these practices. Because of this, many teams have abandoned reviews while emphasizing other aspects of agility. But, reviews are an important tool in the agile toolkit.*

*A driving principle of the Agile Manifesto is continuous attention to technical excellence. Another is embracing and harnessing change as an opportunity to increase customer advantage. For developers, change often begins and ends with modifications to the source code. A poorly designed application with smelly code is a breeding ground for risk that makes change incredibly difficult, and is the greatest technical inhibitor to increased agility. Effective reviews that emphasize design quality and code cleanliness are an important aspect of increased agility. Reviews done right help ensure continuous attention to technical excellence. Unfortunately, not all reviews are done right.*

*1.2 Review Worst Practices*

*Some development teams find reviews a healthy and valuable asset to developers and the project team. Other teams realize little value from their review process. There are numerous causes for painful and ineffective reviews. Some symptoms of ineffective reviews include:*

* *Witch hunt reviews - Many reviews degrade quickly into attack and defend mode. This often occurs because the developer who wrote the code feels attacked and threatened when reviewers make direct and opinionated statements about the code. Nothing could be less productive.*
* *Curly brace reviews - Some reviews emphasize formatting and comments instead of more serious problems. Is placement of curly braces and misspelled comments really that important? Curly brace reviews are feeding ground for the anal retentive, and provide no real value.*
* *Blind reviews - Often times, reviewers walk into the review meeting having never laid eyes on the code they are about to review. Most of the review time is spent trying to figure out what the code does. Spending time in the review meeting attempting to understand the code instead of reviewing it for more serious ailments is a waste of time.*
* *Exclusionary reviews - Many times, the code provided for the review is only a sampling of the code written. For example, unit tests might be excluded from the review. In an unhealthy review environment, providing impartial and incomplete code listings will leave the reviewers wondering how the code actually works.*
* *Tree killer review - If you can't baffle them by providing half of what they need to understand the code, then maybe overwhelming them by providing thousands of lines of code might work. Waiting until codebase is incredibly large to host the first review is entirely ineffective. Not only is it to difficult to provide effective feedback on a large codebase, these reviews are often held late in the lifecycle and do not allow the developer to improve her code based on the feedback received.*
* *Token review - It's not uncommon for management to dictate that reviews be held. Token reviews are typically held for political reasons. Management wants to ensure that all code is reviewed for auditing purposes. Unfortunately, developers realize very little value surrounding these reviews. Any problems found are not fixed unless they are absolutely critical. Since the primary motivation is an audit trail for management, the team has little motivation to improve the code.*
* *World review- The reviews conducted with great number of people in attendance. This can be incredibly intimidating for the developers whose code is being reviewed, and it is not sure what value it provides to invite so many people. A few developers, up to five, should serve all the needs required of the review process. If more people want to provide input, there are better ways.*

*The Design checklist is as follows:*

* *Deficiencies and conflicts in requirements, architecture, or program/project plans will be reported.*
* *Design decisions and the decision rationales will be recorded according to plans and defined processes.*
* *Top-level software components of the software end item will be identified and described.*
* *Static relationships between top-level software components will be defined.*
* *Dynamic relationships between top-level software components will be defined.*
* *The concepts of execution of the software end item and its components will be defined.*
* *External interfaces of the software end item and its components will be identified and described.*
* *Top-level software components will be decomposed into lower-level software units.*
* *Internal interfaces between software units will be identified and described according to the standards identified by the project.*
* *Design traceability data will be documented according to plans, processes, and product standards.*
* *Design definitions will be documented according to plans, defined processes, and standards.*
* *Measurement and estimated data will be collected.*
* *Applicable work products will be submitted for peer reviews in accordance with project plans.*
* *Applicable work products will be submitted for control in accordance with program or project plans.*

# VERIFICATION SUMMARY

*Note: The verification summary is required to be written for all the objectives and processes as they were detailed as User Stories. Replicate the standard template for objectives and process for the goals.*

# VERIFICATION STEPS: GOAL-1

|  |  |
| --- | --- |
| **Objective-1** | **Process User Registration** |
| **Purpose** | The purpose is to acquire User data to enable the system to create User Profile. |
| **Target Audience** | Committee Member |
| **Status** | Completed |
| **Role:** | **As a** Committee Member |
| **Task Description** | 1 Verify Request user data |
|  | 2. Verify Verify Find User Data Sources |
|  | 3.Verify Create a preliminary database |
|  | 4.Verify Create a user Data Spyder |
|  | 5.Verify Formulate database structure |
|  | 6.Verify Populate User Database |
|  | 7.Verify Generate a backup |
|  | 8.Verify Share backup with Project Team |
|  | 9.Verify Assign database privileges |
|  | 10. Verify Launch User Profile Page |
|  | 11.Verify Update Database structure |
|  | 12.Verify Create log file |
|  | 13.Verify Check if data has been already used |
|  | 14.Verify Notify committee about the changes |
|  | 15.Verify Validate user profile |
|  | 16.Verify registered contact details |

|  |  |
| --- | --- |
| Process-1 | Load User Registration Form |
| Purpose | Create User Registration form for gathering user information |
| Target Audience | Society Committee |
| Status | Completed |
| Role: | **As a**Committee Member |
| Task Description | 1.Verify Create platform for accepting user data |
|  | 2.Verify Research user credentials |
|  | 3.Verify Set credentials fields in database |
|  | 4.Verify Accept User Profile inputs |
|  | 5.Verify Register User Profiles into database |
|  | 6.Verify Set basic credential requirements. |
|  | 7.Verify Populate user credentials |
|  | 8.Verify Decide appropriate fields in database |

|  |  |
| --- | --- |
| Process-2 | Acquire User Registration Information |
| Purpose | Collect user credentials for creating user profile which is used to identify the user. |
| Target Audience | Society Members |
| Status | Completed |
| Role: | **As a**Committee Member |
| Task Description | 1.Verify Accept data entered by user |
|  | 2.Verify Decide input format |
|  | 3.Verify Encapsulate the data |
|  | 4.Verify Search for invalid data |
|  | 5.Verify Investigate searched abnormality |
|  | 6.Verify Ask user for valid credentials |
|  | 7.Verify Correct the found abnormality |
|  | 8.Verify Commit changes on database |

|  |  |
| --- | --- |
| Objective-2 | Release Member Information |
| Purpose | To decide the type of user in order to provide access rights |
| Target Audience | Society Committee |
| Status | Completed |
| Role: | **As a**society committee member |
| Task Description | 1.Verify Organise database attributes |
|  | 2.Verify Design patterns for attributes |
|  | 3.Verify Conceptualise parameters of particular type |
|  | 4.Verify Prioritise the important parameters |
|  | 5.Verify Draw venn diagram for shortlisted attributes |
|  | 6.Verify Organise the parameters |
|  | 7.Verify Record formulated observations |
|  | 8.Verify Correspond with Analysis team |
|  | 9.Verify Consolidate outline of categorising process |
|  | 10.Verify Construct final categorising methodology |
|  | 11.Verify Display user’s current responsibility |
|  | 12.Verify Collect anonymous feedback of user |
|  | 13.Verify Run background checks |
|  | 14.Verify Know the data sources |
|  | 15.Verify Manage user privileges |
|  | 16.Verify Correspond with Analysis team |

|  |  |
| --- | --- |
| Process-1 | Examine Member Registration Profile |
| Purpose | The purpose is to get accurate,detailed, relevant data about user which is filtered and curated. |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a**society committee member |
| Task Description | 1.Verify Find a certain user |
|  | 2.Verify Attain type of the user |
|  | 3.Verify Get a curated list of users |
|  | 4.Verify Find similar users |
|  | 5.Verify Prioritize users by types |
|  | 6.Verify Consider all users with comparable importance |
|  | 7.Verify Filter profiles indicating appropriate users |
|  | 8.Filter profiles indicating appropriate characteristics |

|  |  |
| --- | --- |
| Process-2 | Launch User Profile |
| Purpose | To create user friendly user profile page |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a** society committee member |
| Task Description | 1.Verify To decide the template of page |
|  | 2.Verify Research templates |
|  | 3.Verify Design GUI |
|  | 4.Verify Use sufficient User Data |
|  | 5.Verify Use unique template for different type of users |
|  | 6.Verify Display sufficient information about user |
|  | 7.Verify Keep data updated |
|  | 8.Verify Delete irrelevant user profiles |

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# VERIFICATION STEPS: GOAL-2

# 

|  |  |
| --- | --- |
| Objective-1 | Acquire Resource information |
| Purpose | To gather accurate, enough information about resources available in society |
| Target Audience | External Stakeholders |
| Status | Completed |
| Role: | **As a**society committee member |
| Task Description | 1.Verify Create platform to gather information |
|  | 2.Verify Maintain all resources in database |
|  | 3.Verify Extract resource information |
|  | 4.Verify Find information of people associated with resource . |
|  | 5.Verify Identify the limitations of resources. |
|  | 6.Verify Analyse use of resource |
|  | 7.Verify Survey market values |
|  | 8.Verify Gather information periodically |
|  | 9.Verify Establish resource background |
|  | 10.Verify Administer information extraction |
|  | 11.Verify Update Database structure |
|  | 12.Verify Process registration form |
|  | 13.Verify Provide contact details of responsible person. |
|  | 14.Verify Scrutinize Resources |
|  | 15.Verify Take resource photographs |
|  | 16.Verify Search for inadequate data |

|  |  |
| --- | --- |
| Process-1 | Load Resource Registration Form |
| Purpose | Create Resource Registration form for gathering resource information |
| Target Audience | External Stakeholders |
| Status | Completed |
| Role: | **As a**society committee member |
| Task Description | 1. Verify Create platform for accepting resource data |
|  | 2. Verify Find interdependent resources |
|  | 3. Verify Set specification fields in database |
|  | 4. Verify Check similar users |
|  | 5.Verify Accept Resource attribute inputs |
|  | 6.Verify Register Resource into database |
|  | 7.Verify Create log file |
|  | 8. Verify Decide appropriate fields in database |

|  |  |
| --- | --- |
| Process-2 | Examine the Resources |
| Purpose | It will help for optimal management. |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a**society member |
| Task Description | 1. Verify Collect specifications of resources |
|  | 2. Verify Find limitations of resources |
|  | 3.Verify Extract resource information |
|  | 4.Verify survey resource form |
|  | 5.Verify Schedule the resources |
|  | 6.Verify Analyse maintenance requirements |
|  | 7.Verify Schedule maintenance plan |
|  | 8.Verify Keep database updated |

|  |  |
| --- | --- |
| Objective-2 | Demonstrate Facilities per user |
| Purpose | To provide facility to every user. |
| Target Audience | Society Members |
| Status | Completed |
| Role: | **As a**Society Member |
| Task Description | 1.Verify Gather user requirements |
|  | 2.Verify Examine resource requirements per user |
|  | 3.Verify Examine resource utilization. |
|  | 4.Verify Identify shortage of resources |
|  | 5.Verify Keep track of resource utilization |
|  | 6.Verify Provide details of responsible person |
|  | 7.Verify Perform resource maintenance |
|  | 8.Verify Update database |
|  | 9.Verify Avoid monopolization of resource |
|  | 10.Verify Record resource usage |
|  | 11.Verify Create facility groups according to attribute |
|  | 12.Verify Demonstrate facility groups |
|  | 13.Verify Update database |
|  | 14.Verify Allocate facilities |
|  | 15.Verify Provide the rule book regarding resources |
|  | 16.Verify Provide precise information |

|  |  |
| --- | --- |
| Process-1 | Acquire various Facilities |
| Purpose | Accrete details of various facilities |
| Target Audience | Society Members |
| Status | Completed |
| Role: | **As a**Society Member |
| Task Description | 1.Verify Gather facility guidelines |
|  | 2.Verify Identify resource attributes |
|  | 3.Verify Verify Examine attribute-wise data |
|  | 4.Verify Extract attributes for grouping |
|  | 5.Verify List out all facilities. |
|  | 7.Verify List out available facilities |
|  | 8.Verify Inspect facilities periodically. |

|  |  |
| --- | --- |
| Process-2 | Examine the Resources |
| Purpose | It will help for optimal management. |
| Target Audience | Customers |
| Status | On-going |
| Role: | **As a**society member |
| Task Description | 1. Verify Collect specifications of resources |
|  | 2. Verify Find limitations of resources |
|  | 3. Verify Extract resource information |
|  | 4. Verify survey resource form |
|  | 5. Verify Schedule the resources |
|  | 6. Verify Analyse maintenance requirements |
|  | 7. Verify Schedule maintenance plan |
|  | 8. Verify Keep database updated |

blob:https://web.whatsapp.com/a704c37b-16c4-4c7c-b05d-73dd37244ec0

# VERIFICATION STEPS: GOAL-3

# 

|  |  |
| --- | --- |
| Objective-1 | Intimate Maintenance Information |
| Purpose | Process available accounting information for further use. |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a**Committee Member |
| Task Description | 1.Verify Classify flats by type |
|  | 2.Verify Get maintenance charges for each flat type |
|  | 3.Verify Keep record of common facilities usage |
|  | 4.Verify Classify users as owner or tenant |
|  | 5.Verify Maintain report of maintenance charges |
|  | 6.Verify Keep record of parking space per flat |
|  | 7.Verify Distinguish charges in different types of fees |
|  | 8.Verify Keep record of due dates |
|  | 9.Verify Keep previous payment records |
|  | 10.Verify Find the saving amount for society |
|  | 11.Verify Generate receipts for each flat |
|  | 12.Verify Store the details in database |
|  | 13.Verify Keep track of expenditure for different events |
|  | 14.Verify Record staff salary details |
|  | 15.Verify Compare with previous financial years |
|  | 16.Verify Find average cost per house |

|  |  |
| --- | --- |
| Process-1 | Devise Maintenance Schedule |
| Purpose | To keep track of accounting information. |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a** *society member* |
| Task Description | 1.Verify Generate maintenance bills |
|  | 2.Verify Keep track of overall expenditure |
|  | 3.Verify Decide due dates |
|  | 4.Verify Distinguish users |
|  | 5.Verify Estimate total maintenance charges |
|  | 6.Verify Generate payment history |
|  | 7.Verify Notify user for payment |
|  | 8.Verify Check income for each flat |

|  |  |
| --- | --- |
| Process-2 | Apply Maintenance Charges |
| Purpose | To divide total expenditure. |
| Target Audience | External Stakeholders |
| Status | Completed |
| Role: | **As a**society committee member |
| Task Description | 1.Verify Collect user data |
|  | 2.Verify Categorize houses |
|  | 3.Verify Categorize user |
|  | 4.Verify Keep track of resource utilization |
|  | 5.Verify Maintain financial history |
|  | 6.Verify Keep track of damages |
|  | 7.Verify Store details of previous tenants |
|  | 8.Verify Keep track of deadlines |

|  |  |
| --- | --- |
| Objective-2 | Workout Payments |
| Purpose | To complete all the transactions throughout the financial year. |
| Target Audience | Customers |
| Status | On-going |
| Role: | **As a** *Committee Member* |
| Task Description | 1.Verify Keep track of all the bills |
|  | 2.Verify Provide payment pages links |
|  | 3.Verify Keep track of all transactions |
|  | 4.Verify Explicitly record offline payments |
|  | 5.Verify Use mobile pay/internet banking |
|  | 6.Verify Create bank account for society |
|  | 7.Verify Send reminders |
|  | 8.Verify Generate notifications |
|  | 9.Verify Generate receipts |
|  | 10.Verify Maintain status of payments(paid,has to pay) |
|  | 11.Verify Calculate and store overall expenditure |
|  | 12.Verify Provide an interface |
|  | 13.Verify Keep track of expenditure for different events |
|  | 14.Verify Record staff salary details |
|  | 15.Verify Record payment details |
|  | 16.Verify List payments has to be done |

|  |  |
| --- | --- |
| Process-1 | Estimate Maintenance |
| Purpose | To apply maintenance charges. |
| Target Audience | External Stakeholders |
| Status | Completed |
| Role: | **As a** *Committee Member* |
| Task Description | 1.Verify Estimate tentative expenditure |
|  | 2.Verify Provide payment link |
|  | 3.Verify Categorize houses |
|  | 4.Verify Analyze previous expenditure |
|  | 5.Verify Keep track on expenditure on resources |
|  | 6.Verify Keep count of houses on rent |
|  | 7.Verify Keep record of extra expenses |
|  | 8.Verify Keep track of dates of payments |

|  |  |
| --- | --- |
| Process-2 | Apply Maintenance Charges |
| Purpose | To manage overall expenditure of the financial year. |
| Target Audience | External Stakeholders |
| Status | Completed |
| Role: | **As a** *society member* |
| Task Description | 1.Verify Collect user data |
|  | 2.Verify Categorize houses |
|  | 3.Verify Categorize user |
|  | 4.Verify Keep track of resource utilization |
|  | 5.Verify Maintain financial history |
|  | 6.Verify Keep track of damages |
|  | 7.Verify Store details of previous tenants |
|  | 8.Verify Keep track of deadlines |

# VERIFICATION STEPS: GOAL-4

|  |  |
| --- | --- |
| Objective-1 | Accept User Messages |
| Purpose | To solve the issues. |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a** *society member* |
| Verification Steps | 1. Verify user messages are accepted. |
|  | 2. Verify user details. |
|  | 3. Validate synchronization of messages. |
|  | 4. Verify complaints are accepted. |
|  | 5. Validate database messages. |
|  | 6. Verify types of messages. |
|  | 7. Validate notifications |
|  | 8. Validate processing of messages. |
|  | 9. Verify NLP techniques. |
|  | 10. Validate different platforms. |
|  | 11. Verify classification of owners and tenants. |
|  | 12. Verify specific notifications. |
|  | 13. Verify acquisition of profiles. |
|  | 14. Verify non members. |
|  | 15. Verify user recognition. |
|  | 16. Verify service provider messages. |

|  |  |
| --- | --- |
| Process-1 | Acquire User Profiles and Society Catalogue |
| Purpose | To categorize discussions and issues. |
| Target Audience | External Stakeholders |
| Status | Completed |
| Role: | **As a**Committee Member |
| Verification Steps | 1. Verify acquisition of user information |
|  | 2. Verify acquisition society information |
|  | 3. Verify categories of users |
|  | 4. Verify categories of resources |
|  | 5. Verify categories of houses |
|  | 6. Verify parking space details |
|  | 7. Verify required resources |
|  | 8. Verify accounting statistics |

|  |  |
| --- | --- |
| Process-2 | Categorize Users |
| Purpose | To provide access to different sections of communication forum. |
| Target Audience | External Stakeholders - Society Members |
| Status | Completed |
| Role: | **As a**society committee member |
| Verification Steps | 1.Verify recognition of owners |
|  | 2. Verify identification of tenants |
|  | 3.Verify recognition of brokers |
|  | 4.Validate recognition of committee members |
|  | 5.Validate Identification of staff members |
|  | 6.Verify Identification of more than one roles |
|  | 7.Verify platform is open to all |
|  | 8.Verify list of similar users |

|  |  |
| --- | --- |
| Objective-2 | Recognize User Messages |
| Purpose | Analyses a particular message and transfers it to the appropriate users for faster actions over the request raised |
| Target Audience | Stakeholders |
| Status | Completed |
| Role: | **As a**society committee member |
| Verification Steps | 1.Verify categorization issues |
|  | 2.Verify severity of issue |
|  | 3.Verify required actions |
|  | 4.Verify categorization of messages |
|  | 5.Validate facility to mark the message |
|  | 6.Verify Identification of the user / department |
|  | 7.Verify assignment of member/department to solve issue |
|  | 8.Verify recognition messages of conclusion of discussion |
|  | 9.Verify status for each complaint |
|  | 10.Verify recognition of frequently occurring issues |
|  | 11.Verify categorize of users |
|  | 12.Verify generation of bulk notifications |
|  | 13.Verify facility to archive discussions |
|  | 14.Verify access to all users for common issues |
|  | 15.Verify messages from service providers |
|  | 16.Verify recognize of non-member messages |

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| --- | --- |
| Process-1 | Load Relevant Platform for Raising Issue |
| Purpose | Provides a range of appropriate options from which the user can choose and raise the issue |
| Target Audience | Internal Stakeholders |
| Status | On-going |
| Role: | As a *society member* |
| Verification Steps | 1. Verify distinguish different sections |
|  | 2. Verify different platforms for different issues |
|  | 3.Verify notification on relevant platform |
|  | 4.Verify attachment facility |
|  | 5.Verify categorize the issue |
|  | 6.Verify Provide suggestion box |
|  | 7.Verify Maintain each department database |
|  | 8.Verify Provide discussion forum |

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| --- | --- |
| Process-2 | Transfer Request to Concerned User |
| Purpose | Create a dialog between between the user who has raised the issue and the user who is supposed to or can attend the request |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a** *Committee Member* |
| Task Description | 1.Verify Find section associated with given request |
|  | 2.Verify Find complaint type |
|  | 3.Verify Generate notifications |
|  | 4.Verify Send notification to user |
|  | 5.Verify Circulate notices |
|  | 6.Verify Form different departments |
|  | 7.Verify Assign different positions to department members |
|  | 8.Verify Keep a record of complaints with their status |

# VERIFICATION STEPS: GOAL-5

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| --- | --- |
| Objective-1 | Recognize visitor |
| Purpose | To identify the visitor in order to notify the concerned user and allow/disallow the visitor |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a** *society member* |
| Verification Steps | 1. Verify .collect details about the visitor |
|  | 2. Verify fetch details of the concerned user |
|  | 3. Verify record the purpose of visit |
|  | 4. Verify create an entry about the visit |
|  | 5. Verify assign a visitor number |
|  | 6. Verify record entry and exit time of daily help |
|  | 7. Verify notify the customers about daily help |
|  | 8. Verify launch a form to rate the daily help |
|  | 9. Verify group the visitors |
|  | 10.Verify collect the responses and feedback |
|  | 11.Verify update the services provided by the visitor |
|  | 12.Verify fetch service feedback |
|  | 13.Verify fetch all the past services |
|  | 14.Verify visualize the services |
|  | 15.Verify find out appropriate technique |
|  | 16.Verify fetch all the responses |

|  |  |
| --- | --- |
| Process-1 | Acquire the visitor profile and purpose |
| Purpose | To know about the visitor and categorize them. |
| Target Audience | Stakeholders |
| Status | Completed |
| Role: | **As a** *society member* |
| Verification Steps | 1.Verify collect the details of the visitor |
|  | 2.Verify acquire the information about the purpose of visit |
|  | 3. Verify collect the unique visitor number |
|  | 4.Verify group all the past responses against the visitor |
|  | 5.Verify make a new entry against the visit |
|  | 6.Verify update the skills of the daily help |
|  | 7.Verify generate a unique visitor number |
|  | 8.Verify group the visitors |

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| --- | --- |
| Process-2 | Record the visitor against the purpose |
| Purpose | To analyze and notify the user about the visitor with suggestions |
| Target Audience | Stakeholders |
| Status | Completed |
| Role: | **As a**society committee member |
| Verification Steps | 1.Verify fetch the details about the purpose of visit |
|  | 2.Verify fetch the past responses about the visitor |
|  | 3.Verify obtain the details of the consumer who is concerned |
|  | 4.Verify record the entry and exit time |
|  | 5.Verify match the purpose with a category |
|  | 6.Verify fetch the similar visitors |
|  | 7.Verify launch a form to record the visit for the purpose |
|  | 8.Verify launch a form to record the purpose |

|  |  |
| --- | --- |
| Objective-2 | Grant Entry to the visitor |
| Purpose | Perform a calculative process to allow / disallow the visitor |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a** *society member* |
| Verification Steps | 1.Verify notify the user |
|  | 2.Verify collect the visitor details |
|  | 3.Verify collect the purpose |
|  | 4.Verify make a Satisfiability chart |
|  | 5.Verify recognize the type of service |
|  | 6.Verify check the status of the consumer |
|  | 7.Verify show ratings |
|  | 8.Verify demonstrate the skill set possessed by the service provider |
|  | 9.Verify fetch the details of the consumer |
|  | 10.Verify record the response by the user |
|  | 11. Verify fetch the entry time and exit time |
|  | 12.Verify fetch the profile of the visitor |
|  | 13. Verify develop a facility to choose the services |
|  | 14. Verify display visitor profiles |
|  | 15.Verify fetch the details of the visit |
|  | 16.Verify collect the response of the user |

|  |  |
| --- | --- |
| Process-1 | Notify the concerned user |
| Purpose | Choose an appropriate communication medium to notify the user about the visit |
| Target Audience | Stakeholders |
| Status | Completed |
| Role: | **As a**society committee member |
| Verification Steps | 1. Verify fetch the details of the user |
|  | 2. Verify check the availability of the user |
|  | 3. Verify Identify the type of service |
|  | 4. Verify check the status of the user |
|  | 5. Verify establish connection with the third party services |
|  | 6. Verify fetch the details of the visit |
|  | 7. Verify generate the content to be delivered as the notification |
|  | 8. Verify accept the unique visitor number |

|  |  |
| --- | --- |
| Process-2 | Record response against the visitor |
| Purpose | To record the the response whether the user accepted /rejected the visitor. |
| Target Audience | Stakeholders |
| Status | Completed |
| Role: | **As a**society committee member |
| Verification Steps | 1. Verify design a form |
|  | 2. Verify design the UI of the form |
|  | 3. Verify fetch the response |
|  | 4. Verify fetch the visit details |
|  | 5. Verify design a feedback form |
|  | 6. Verify insert a new entry against the visitor in database |
|  | 7. Verify categorize the responses |
|  | 8. Verify display the various services |

# 6 VERIFICATION STEPS: GOAL-6

|  |  |
| --- | --- |
| Objective-1 | Understand the facility requested |
| Purpose | Collect all the information in order to understand the facility. |
| Target Audience | Stakeholders and Customers |
| Status | Completed |
| Role: | **As a**society committee member |
| Verification Steps | 1.Verify fetch details of the facility |
|  | 2.Verify fetch the user details |
|  | 3.Verify develop the form |
|  | 4.Verify check for the availability of the facility |
|  | 5.Verify transfer the request to other users concerned |
|  | 6.Verify fetch the database concerned |
|  | 7.Verify create an entry for the facility |
|  | 8.Verify fetch the history of facilities requested |
|  | 9.Verify contact the third party providers |
|  | 10.Verify fetch the entry for the facility |
|  | 11.Verify use communication forum |
|  | 12.Verify generate the demand graph |
|  | 13.Verify categorize the facility |
|  | 14.Verify generate request result statistics |
|  | 15.Verify calculate the validity of the facility |
|  | 16.Verify fetch the penalty rules |

|  |  |
| --- | --- |
| Process-1 | Check for the availability of the facility |
| Purpose | Gathers the required information to analyze whether the facility can be provided |
| Target Audience | Stakeholders and Customers |
| Status | On-going |
| Role: | **As a** *society member* |
| Verification Steps | 1.Verify generate from to accept the request |
|  | 2.Verify design a UI to categorize facility |
|  | 3.Verify get details of the user |
|  | 4.Verify Identify other users |
|  | 5.Verify contact the third party |
|  | 6.Verify fetch the databases of the facilities and resources |
|  | 7.Verify transfer the request to other users |
|  | 8.Verify categorize the facility |

|  |  |
| --- | --- |
| Process-2 | Record the result against the user |
| Purpose | Track the status and result of the request in a transparent and impartial fashion |
| Target Audience | Stakeholders and Customers |
| Status | Completed |
| Role: | **As a**society committee member |
| Task Description | 1.Verify obtain the details of the facility |
|  | 2.Verify check for the status of the process |
|  | 3.Verify fetch the databases of the rules ,resources |
|  | 4.Verify generate a message about the results |
|  | 5.Verify calculate charges for the facility |
|  | 6.Verify launch a feedback form |
|  | 7.Verify fetch the details of the facility along with results |
|  | 8.Verify make an entry in the database |

|  |  |
| --- | --- |
| Objective-2 | Bill Management |
| Purpose | Manage the various bills of the user and also notify the user so that the former pays dues before time |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a** *society member* |
| Verification Steps | 1.Verify fetch details about the user |
|  | 2.Verify fetch the details of a particular bill |
|  | 3.Verify Identify the category of the bill |
|  | 4.Verify check availability of the user |
|  | 5.Verify establish connection with third party services |
|  | 6.Verify fetch the due date of the bill |
|  | 7.Verify launch bill payment form |
|  | 8.Verify launch feedback form |
|  | 9.Verify generate statistics of the feedback |
|  | 10.Verify create entry for the transaction |
|  | 11.Verify calculate the time period for bill payment |
|  | 12.Verify graph all the transaction history |
|  | 13.Verify see a responsive feedback form |
|  | 14.Verify see graphical representation of the responses |
|  | 15.Verify calculate the frequency period of notification |
|  | 16.Verify fetch the maintenance charges details |

|  |  |
| --- | --- |
| Process-1 | Estimate the bills due per user |
| Purpose | Gather Information from the user about the bills to paid and notify the user for the same. |
| Target Audience | Internal Stakeholders |
| Status | Completed |
| Role: | **As a** *society member* |
| Verification Steps | 1.Verify fetch a user profile |
|  | 2.Verify launch a form asking for acquiring types of bills |
|  | 3.Verify acquire the details of each bill |
|  | 4.Verify Infer the third party service |
|  | 5.Verify find out the due date of the bill |
|  | 6.Verify check the availability of the user |
|  | 7.Verify launch a page for payment |
|  | 8.Verify create an entry for the transaction |

|  |  |
| --- | --- |
| Process-2 | Provide gateway to clear the dues |
| Purpose | Develop a simple to use graphical user interface which serves the purpose of payment gateway for all types of bills for each user |
| Target Audience | Customers |
| Status | Completed |
| Role: | **As a**society committee member |
| Verification Steps | 1.Verify see impressive and simple to use GUI |
|  | 2.Verify see personalized list of bills |
|  | 3.Verify be notified periodically |
|  | 4.Verify receive precise and meaningful notifications |
|  | 5.Verify see only one gateway |
|  | 6.Verify have all the dues correctly calculated |
|  | 7.Verify see a responsive and secured form accepting the details about several bills |
|  | 8.Verify see a system that does not mix details of several bills |

# VERIFICATION MATRIX

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| User Story | Step-1 | Step-2 | Step-3 | Step-4 | Step-5 | Step-6 | Step-7 | Step-8 | Step-9 | Step-10 |
| G1:O1 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G1:P1 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G1:P2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | x |
| G1:O2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G1:P1 | √ | √ | √ | x | √ | x | √ | √ | √ | √ |
| G1:P2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G2:O1 | √ | x | √ | √ | √ | √ | x | √ | √ | √ |
| G2:P1 | √ | √ | x | x | x | √ | √ | √ | √ | √ |
| G2:P2 | √ | √ | √ | √ | √ | √ | √ | x | √ | √ |
| G2:O2 | x | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G2:P1 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G2:P2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G3:O1 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G3:P1 | √ | √ | √ | √ | √ | √ | √ | √ | √ | x |
| G3:P2 | √ | √ | √ | √ | √ | x | √ | √ | √ | √ |
| G3:O2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G3:P1 | √ | √ | √ | √ | √ | √ | √ | √ | x | √ |
| G3:P2 | √ | √ | √ | √ | √ | √ | √ | x | x | √ |
| G4:O1 | √ | √ | √ | x | √ | √ | √ | √ | √ | √ |
| G4:P1 | √ | √ | √ | √ | √ | x | √ | √ | √ | √ |
| G4:P2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G4:O2 | √ | √ | √ | x | √ | x | √ | √ | √ | √ |
| G4:P1 | √ | √ | √ | √ | √ | √ | √ | x | √ | √ |
| G4:P2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G5:O1 | x | x | √ | √ | √ | √ | √ | √ | √ | √ |
| G5:P1 | √ | √ | x | x | x | √ | √ | √ | √ | x |
| G5:P2 | √ | √ | √ | √ | x | x | x | x | x | x |
| G5:O2 | x | √ | √ | x | x | √ | x | x | √ | √ |
| G5:P1 | √ | √ | √ | √ | √ | √ | √ | √ | x | x |
| G5:P2 | √ | √ | √ | √ | √ | √ | x | √ | √ | √ |
| G6:O1 | √ | √ | x | √ | √ | √ | √ | √ | √ | √ |
| G6:P1 | √ | √ | √ | √ | √ | √ | x | x | √ | √ |
| G6:P2 | √ | √ | √ | x | √ | √ | √ | √ | √ | √ |
| G6:O2 | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| G6:P1 | √ | √ | √ | √ | √ | x | √ | √ | √ | √ |
| G6:P2 | √ | √ | √ | x | √ | √ | √ | x | x | X |