**Project Management Plan**

**for Food Management Web-Service**

**Prepared by:**

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**Effort Estimation**

***A list of requirements:***

* *Stakeholder identification:* identifying stakeholder is the main requirement as there are many stakeholders involved in the project. So the stakeholders are categorized in two ways: Internal and External. The stakeholders identified for our project are as follows:

Internal Stakeholders:

* Project team
* Sponsor
* Stores

External Stakeholders:

* Customers
* Legislation and authorities
* NGO’s

Overview [10 marks]

* an overview of the scope of your project
* any assumptions and constraints which are relevant to the plan

DEMAND IN THE MARKET   
CUSTOMERS AVAILABILITY   
QUANTITY UPDATES

Process [15 marks]

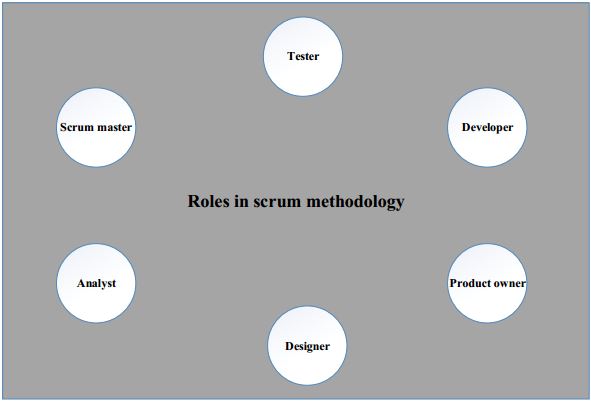
**Methodology**

The software can be developed through different methodologies. Selecting a suitable methodology is a key factor for success of project. The agile methodology is selected for this project. The reason behind selection of agile methodology is there is a lot of flexibility for change in requirements, less time need to be allocated for documentation as main concentration is on working software, cross functional roles for the team members. As our project is a start-up idea so the change in requirements are more, lack of standards in the company as the CMM level will be 1, so there need to be a design oriented development which consists of iterations. Also the skilled team members are there who can have group autonomy, and the project is divided into sub-tasks where these implemented in iterations so a feedback can be collected from customer or stakeholders and improve in next iteration. Also technology or latest changes in industry can be easily incorporated in agile development.

The reasons for not selecting traditional method are fault requirements may lead to failure of project, less quality in the product as it takes more time, documentation requires more time, modification in requirements and scope change in this methodology is not flexible as our project is not static so there are frequent changes as start-up idea this methodology is not selected.

**Roles and responsibilities of the members of the team:**

The given members for the project are eight and we have to utilize them for 170 hours each to complete the project. Among eight members we divided into product owner, scrum master and development team, where product owner and scrum master also acts as developers. The roles and responsibilities are assigned based on the skills of each individual. As each individual have previous experience with web development so training is not provided among team members. The eight members are divided into four pairs for pair programming and work is assigned to them.



|  |  |  |
| --- | --- | --- |
| **Pair ID** | **Resource ID** | **Names** |
| **P1** | **R1** | CHARLA, SHIVA BHAVANI REDDY |
| **R3** | MADALA, ANVITHA |
| **P2** | **R4** | MAGAPU, AKSHAY KUMAR |
| **R7** | VARANASI, PANCHAJANYA |
| **P3** | **R2** | CHILLA, KARTHEEK ARUN SAI RAM |
| **R6** | NEKKANTI, HARINI |
| **P4** | **R5** | MANDA, SAI NARAYANA SAMHITH |
| **R8** | YARLAGADDA, NIKHIL |

|  |  |  |
| --- | --- | --- |
| **Sprints** | **Phase** | **Roles of members** |
| Sprint 1 | Analysis | R5,R8 as analysts |
| Design | R2,R6 as designers |
| Development | R4,R7 as developers |
| Testing | R4,R7 as testers |
| Sprint 2 | Analysis | R5,R8 as analysts |
| Design | R2,R6 as designers |
| Development | R1,R2,R3,R6 as developers |
| Testing | R4,R7 as testers |
| Sprint 3 | Analysis | R5,R8 as analysts |
| Design | R2,R6 as designers |
| Development | R1,R3,R5,R8 as developers |
| Testing | R4,R7 as testers |

**Responsibilities of the team members**

As selected methodology is agile for development each member plays multiple roles in the project. So in our project six members are assigned as analysts, designers, developers and testers in three sprints and two members are scrum master and product owner who are also acts as developers.

* 1. Product owner: the product owner responsibility is to have an interaction with customers to get the user stories and also to prioritize the product backlog, plans the release. The product owner has to know the situation of market and what changes need to be done so that he/she can set goals to the sprint. The product owner in our team is R1.
  2. Scrum master: Scrum master is the one who facilitates the things needed by the team for development of the product. Scrum master acts as the communicator between product owner and the team. Scrum master monitors the progress of the sprint activity and also clears the obstacles for the team. The scrum master in our team is R3.
  3. Analysts: The analyst’s responsibility is to analyse the requirements from stakeholders and made a list of requirement which can done as selected list, which cannot be done as not- selected list and requirement specification. These three have to be specified in a requirement document (RD) for traceability. The analysts in our team R5, R8.
  4. Designers: The designer responsibility in our project is to design the database and interface for the web pages through using UML design tool Visio. The designers in our team are R2, R6.
  5. Developers: The developer’s responsibility in our project is to develop webpages, style these webpages, create database and retrieve the data in webpages. So each member in the team acts as developers in our project where not all are experts, so pair programming concept is used to improve the quality of coding. The pair programmers are selected based on the skills so that one with good skills and one with beginner skills are selected as a pair.
  6. Testers: The tester’s responsibility is to test the web application so that no functional bugs, accessibility level, usability level and security level in web application are tested to decrease the level of bugs and improve the quality of the application. The testers in our team are R4, R7.

**Work Breakdown Structure**

Work breakdown structure is used to breakdown the tasks into sub-tasks so that a hierarchy structure forms to get a simple idea about the overall project process. The work breakdown structure is presented in figure ##x.## As the work breakdown structure is in a graphical representation, to understand more clearly a WBS dictionary is provided.

**Effort Estimation**

The effort for this project is estimated by using COCOMO-II model. Other models are not considered because the present project is a start-up idea so no previous data regarding this project is available, for this reason human-expert based models are not considered as these models requires some previous experience to predict the estimates.

So our team consists of two experienced web developers who can estimate the source lines of code(SLOC) for a webpage, so based on them we collected the SLOC data for each feature and make an average SLOC as two are not experts so we used average of their estimates. The COCOMO-II consists of scale drivers and cost drivers in which we have taken all attributes of scale drivers and some attributes of cost drivers which are suitable for our project are selected. The effort is estimated based on these values, clear representation of these values and calculation of effort is given below,

Effort = a x (KLOC) sf x Π ΕΜ i

sf is scale factors which is, sf = b + 0.01 x (sum of estimated scale drivers value)

there are two constant values which are, a is 2.94, b is 0.91.

Based on the formula effort is calculated as,

Effort = 2.94 x (3.36)1.0793 x (0.92 x 0.73 x 1 x 0.71 x 0.88 x 1 x 1 x 1 x 0.9 x 1)

= 4.106 PM.

~ 113 Person hours.

Effort Estimation [25 marks]

* a list of requirements (at a suitable level of detail to enable you to identify tasks and estimate effort)
* a work breakdown structure or other suitable list of tasks that you will do to complete the project (use a format that is consistent with your chosen project development methodology)
* an estimate of the effort required to complete these work tasks, including details of how you made this estimate (it is important that you demonstrate that you will effectively utilise the resources available to you as a team)

**Initial work plan**

**List of major deliverables**

This part consists of list of major deliverables for our project:

1. Project plan document

This document consists of overall plan of the project. That is scope of the project, team member roles and selected methodology for the project, effort estimation, work breakdown structure, quality and risk management plan. This document is provided to sponsor on November 17th.

1. Project plan presentation

The presentation is given by all team members to the sponsor of the project and explain the plan. The presentation is given in the form of PowerPoint presentation on November 24th.

1. Project status presentation

The presentation is given to the sponsor, basically it explains the status of presentation and how much work is done and issues in the project so that sponsor can give feedback and solve any obstacles. This presentation is also given in the form of PowerPoint presentation on December 15th.

1. Food service module

In this the application developed until second sprint is released into market and collect feedback from the customers to improve the quality in the next sprint. This will be released on December 16th.

1. Food service web application

This is the final product of the project with improved quality and it is basically the website developed by the team and it will be released on January 8th.

1. Project final presentation

The final presentation is given to explain the product details and how to use the product and collect certain feedback. This presentation will be on January 11th.

1. Individual report

A report is provided by each individual in the team about how the project went on and what are lessons learned in the project. This will be submitted on January 11th.

**Tracking work and measure the progress**

The plan consists of estimated duration of each task and their sub-tasks. So there is a need of tracking the work, to track the work a burndown chart is used so that how much work is finished and how much work is left can be known. So that daily estimated work is compared with daily completed work and remaining effort is calculated. For this project, the initial burndown chart is given in figure X.

Scrum master measures the progress of all the team members and the project. There are several properties in a project to measure. The key indicators in our project are measuring stakeholder satisfaction, measuring the defects or bugs in our project, measuring the issues arise during requirements or coding phases, measuring the planned deliverables. This way we can know whether the project is going in a planned way or is there extra overhead in the project in terms of budget, effort and time.

* Stakeholder satisfaction measure: The important measure is to know the level of stakeholder satisfaction, as stakeholder are key persons in the project these need to be satisfied by delivering a quality product. So to perform it we need to validate the developed product with given requirements so it directly reflects whether stakeholder satisfies or not.
* Defects measure: In this the number of defects are measured so that the effort and time required by the team can be known and also it reflects the quality of the code. A benchmark is set for minimum number of defects, by measuring the actual defects and comparing it with benchmark data we can know the progress.
* Issues measure: In this the time taken for solving or closing the issues arisen in the project are measured so that time used for non-development activities can be known.
* Planned deliverables measure: In this the deliverables which are planned are measured with number of deliverables actually delivered so that remaining deliverables work can be calculated. Also the tasks days are also measured to know how many tasks are completed on date and how many are lagged behind to complete. These can be performed by using Gantt chart as it contains each sub-task finish date so by comparing actual progress with estimated Gantt-chart progress leads to know the remaining effort data.

These measures help us to know the progress of the project and by having good measures it can ensure the project success.

Plan and Control [25 marks]

* an initial work plan which identifies when tasks will be done and by whom (presented in a manner and level of detail consistent with your chosen project development methodology)
* a list of major deliverables and when you plan they will be ready
* a description of how you will track the work done and measure progress against your plan

Risk Management Plan [15 marks]

* a list of relevant risks to the successful execution your project
* details of any mitigating actions you have or will take to reduce the impact of these risks

Quality Plan [10 marks]

* a discussion of the actions you will take to ensure the quality of the software product you are developing