

Project Scheduling

1.1 Process Model

The best and suitable method for the development of our software is the **Agile** method. Agile is a category and it is the ability to create and respond to change in order to profit in a turbulent business environment. Agile works under iterative methods. Each iterative method has time and scope. Time determines the relevant time needed to complete the iterations and scope determines the amount of work needed to be done in each iteration. Each of the iterations must be completed within 30 days at most.

Now the arguments based on our analysis about why we selected Agile method is the best choice among all other methods to develop your proposed software is explained below:

Agile is a dynamic category where changes can happen anytime regarding the environment of the project and requirements. By choosing this method the chance of delaying the project is reduced as it works under iteration method and each of the iteration does not exceed 30 days. There are different types of agile methods. We have basically focused on the Scrum method. It is performed under 3 phases. 1. Pre-Game 2. Development (Game-phase) 3. Post-Game

Different types meetings are being held in scrum method. They are:

Sprint planning Meeting, Daily Scrum Meeting, Sprint Review Meeting.

1.2 Project Roll Identification and Responsibilities

As described above, the method we will be using during the software development phase will be an agile method named SCRUM. In SCRUM method, each of the project member will be performing different iteration task with in a specific time period and scope. Where each of the project member of the iterations will get 3-4 weeks (30 days) to perform an iteration.

- **Scrum Master** is responsible for ensuring that the project is carried through according to the practices, values, and rules of Scrum and that it progresses as planned.
- **Product Owner** is officially responsible for the project, managing, controlling, and making visible the Product Backlog list. He is selected by the Scrum Master, the customer, and the management, he makes the final decisions of the tasks related to product Backlog.
- **Scrum Team** is the project team that has the authority to decide on the necessary actions and to organize itself in order to achieve the goals of each Sprint.
- **Management** oversees final decision making, along with the agreements, standards, and conventions to be followed in the project.

1.3 Project Estimation:

The Constructive Cost Model (COCOMO) is an algorithmic software cost estimation model. The software project type that we will be using is **Embedded**. It is a software project that must be developed within a strongly coupled to hardware environment.

- **Effort = PM (person-months needed for project (labor working hours))**

$$= \text{Coefficient}_{\text{Effort Factor}} * (\text{SLOC}/1000)^P$$

$$= 2.4 * (10000/1000)^{1.05} \text{ [here SLOC = 10000, Embedded co-efficient effort factor is 2.4 and P(project complexity which is 1.05)]}$$

$$= 26.928 \text{ labor working hours}$$
- **Development Time, DM = 2.50*(PM)^T**

$$= 2.50 * (26.928)^{0.38} \text{ [here T for embedded is 0.38]} = 8.73 \text{ months}$$
- **Required Number of People, ST (average staffing necessary)**

$$= \text{PM}/\text{DM}$$

$$= 26.928/8.73 = 3.084$$

