BhaagMotayBhaag

Software Engineering Course Project

Project Plan Document

****

Group 8

Rabee Sohail Malik 2014-10-0176

Ahmed Shahid 2014-10-0009

Dilawar Khan 2014-10-0203

Hassan Ishtiaq 2014-10-0066

Instructor

Dr. Hamid Abdul Basit

Session 2012-2013

Department of Computer Science

Lahore University of Management Sciences

# Project Plan Document

## Project Type

Android Fitness App

## Process Model

We will be using the Waterfall Model because the requirements are well defined with little or no chance of changing.

### Project Deliverables

1. Requirements document
2. Project plan
3. Project design document
4. Test reports
5. Final code
6. Software manuals e.g. user, installation

## Project Tasks

(Below is just an example. Write your own and then male a timeline chart out of them in MS Project)

Tasks to determine product statement

1. Identify needs and benefits
2. Identify needs and project constraints
3. Define project purpose and scope
4. Identify user characteristics
5. Milestone: Product statement defined

Tasks to determine functional specification

1. Define desired input/output
2. Input functions/output functions
3. Review with team members
4. **Milestone:** Functional specification defined

Tasks for scheduling

1. Group meetings schedule
2. Gantt charts
3. **Milestone:** scheduling accomplished

Tasks to determine estimation

1. Cost estimation
2. Software model specified
3. Project based estimation
4. FP calculations
5. s/w cost estimations
6. **Milestone**: estimations calculated

Tasks for designing phase

1. Data flow diagrams for the proposed system
2. Entity relationship diagrams
3. Rough design of tables
4. Class diagram
5. **Milestone**: final design

Tasks for coding/implementation

1. Designing the database in SQL
2. Connectivity handling
3. Coding of all modules
4. **Milestone:** coding accomplished

Tasks for testing

1. Devising test cases
2. Test cases run
3. User acceptance activity
4. **Milestone:** system tested

## Project Scheduling

The plan for the scheduling covers the entire life cycle of the project. It entails all the activities that must be performed before starting the development work. Scheduling estimation and staff requirement estimations are perhaps the most important activities after cost estimation. As there is a strong relationship between the project duration and the staff time (measured in staff -months) required for completing the project. Later this schedule can be used for monitoring the progress of the project.

### Timeline Chart

In MS Project. Insert a screenshot here. Use the task identified as activities.

## Team Structure

|  |  |  |
| --- | --- | --- |
| **Role** | **Responsibility** | **Person** |
| Server side developer | Design and implement the databases as well as the application level functionality on the server such as the chat room, user authentication etc. | Ahmed Shahid |
| Android Developer/Music player + Training regime | Responsible for designing and implementing the music player. Will also implement the training regime creator. | Hassan Ishtiaq |
| Android Developer/GPS | Responsible for implementing all functions related to the GPS such as the distance covered, speed etc. | Dilawar Khan |
| Android Developer/Connectivity | Responsible for connectivity with server and functions on the application such as upload and download of data and user authentication. | Rabee Sohail Malik |

## Task and Member Assignment Table

### Allocation of People to Activities

**(**Activities will be those identified earlier.**)**

|  |  |  |
| --- | --- | --- |
| ***No.*** | ***Activities*** | ***Members*** |
| ***1*** | ***Design and implementation of databases*** | ***Ahmed Shahid*** |
| ***2*** | ***Implementation of authentication logic on server*** | ***Ahmed Shahid*** |
| ***3*** | ***Implement chatroom functionality*** | ***Ahmed Shahid, Rabee Sohail*** |
| ***4*** | ***Design and implementation of GUI and user screens*** | ***Rabee Sohail Malik, Dilawar Khan, Hassan Ishtiaq*** |
| ***5*** | ***Upload and download of data*** | ***Rabee Sohail Malik*** |
| ***6*** | ***User login on application*** | ***Rabee Sohail Malik*** |
| ***7*** | ***Track distance run using GPS*** | ***Dilawar Khan*** |
| ***8*** | ***Calculate average speed using GPS*** | ***Dilawar Khan*** |
| ***9*** | ***Display past user statistics*** | ***Dilawar Khan*** |
| ***10*** | ***Allow creation of training regime*** | ***Hassan Ishtiaq*** |
| ***11*** | ***Notification of user as reminder of day’s schedule*** | ***Hassan Ishtiaq*** |
| ***12*** | ***Use music player of phone to play songs*** | ***Hassan Ishtiaq*** |
| ***13*** | ***Allow creation of playlists*** | ***Hassan Ishtiaq*** |

### Resource Allocation

Chart in MS Project. Derived from the Timeline chart created earlier. Insert a screenshot here.

### Front End Tools

Eclipse, Android SDK, Microsoft Word, Microsoft Excel

#### Reasons

Eclipse IDE will be the environment used to code in. Android SDK is needed to develop android apps. The android plugin for eclipse makes coding and creating user interfaces very easy. Microsof

#### Documentation Tools

Microsoft Word, Microsoft Excel, Visio

#### Reasons

Microsoft Word will be used for providing documentation. Excel will be used for creating timelines and Visio will be used to create certain diagrams.

### Project Management Tools:

Microsoft Project, Github

#### Reasons

Microsoft Project will be used basically to track the progress of our project to see how it is going according to schedule. It helps to visually track and manage the ongoing project. Github will be used as the repository on which the code of all versions will be stored.

### Back End Tools

SQL Server, PHP

#### Reasons

The project deals with a large amount of user data and statistics which needs to be stored in an online database. For this reasons, an SQL server is required. For connectivity and retrieval of user data from databases, PHP will be used.

**Timeline Cr**

In MS Project. Insert a screenshot here. Use the task identified as activities.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Planned Starting Date for a Task** | | **18th Feb** | | **28th**  **Feb** | | **8th March** | | **18th**  **March** | | **28th March** | | **8th April** | | **18th April** | | **28th April** | | **8th May** | |
| **Planned Duration for a task (Days)** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Tasks** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **SRS Document** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Use cases** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Project Plan Document** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Design and implementation of databases** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Implementation of authentication logic on server** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Upload and download of data** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **User login on application** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Track distance run using GPS** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Calculate average speed using GPS** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Allow creation of training regime** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Notification of user as reminder of day’s schedule** | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Design and implementation of GUI and user screens** |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Implement chatroom functionality** |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Display past user statistics** |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Use music player of phone to play songs** |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| **Allow creation of playlists** |  | |  | |  | |  | |  | |  | |  | |  | |  | |

**Functional Point analysis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Type |  | | | |
|  | Simple | Average | Complex | Total |
| External Inputs | 0 x 3 = 0 | 1 x 4 = 4 | 2 x 5 = 10 | 14 |
| External Outputs | 1 x 5 = 5 | 0 x 6 = 0 | 3 x 7 = 21 | 26 |
| External inquiries | 0 x 3 = 0 | 2 x 4 = 8 | 0 x 5 = 0 | 8 |
| Internal Logical Files | 1 x 10 = 10 | 2 x 13 = 26 | 2 x 15 = 30 | 66 |
| Interface Files | 0 x 7 = 0 | 1 x 10 = 10 | 1 x 13 = 13 | 23 |
| Total Number of Unadjusted Function Points | | | | 137 |
| Multiplied Value Adjustment Factor | | | | 0.92 |
| Total Adjusted Function Points | | | | 128.36 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Type | External  Inputs | External  Outputs | External  Inquiries | Internal  Logic  Files | Interface  Files |
| 1. | User(Avg) | Basic login interface(sim) | Track distance run(Avg) | Use music player to play songs(Sim) | user screen and login page(Avg) |
| 2. | Gps Input(comp) | ChatRoom(com) | Implementatation of databases(Avg) | User login(Avg) | Implementation of Gui(comp) |
| 3. | Server connectivity(comp) | Music player(com) |  | Notification of day,s schedule(Avg) |  |
| 4. |  | Past user stats(com) |  | Implementation of authen(comp) |  |
| 5. |  |  |  | Creationof training regime(Avg) |  |

**Value Adjustment Factor (VAF) = 0.65 + (Sum of all 14 GSCs/100) = 0.65 + (27/100) = 0.92**

**Use case point analysis**

Total Use cases from SRS document = 10.

**Project Estimation by Use Case Point Analysis**

* **Unadjusted Use-Case Weight (UUCW):**

|  |  |  |  |
| --- | --- | --- | --- |
| Use-Case Complexity | Weight | Number of Use Cases | Product |
| Simple | 5 | 5 | 25 |
| Average | 10 | 3 | 30 |
| Complex | 15 | 2 | 30 |
| TOTAL |  |  | 85 |

UUCW = 85

* **Unadjusted Actor Weight (UAW):**

|  |  |  |  |
| --- | --- | --- | --- |
| Actor Type | Weight | Number of Actors | Product |
| Simple | 1 | 0 | 0 |
| Average | 2 | 1 | 2 |
| Complex | 3 | 0 | 0 |
| TOTAL |  |  | 2 |

UAW = 1

* **Unadjusted Use-Case Points (UUCP):**

**UUCP = UUCW + UAW**

**UUCP = 85 + 2 = 87**

* **Technical Complexity Factor (TCF):**

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Weight | Assessment | Impact |
| Distributed System | 2 | 2 | 4 |
| Performance Objectives | 2 | 2 | 4 |
| End-User Efficiency | 1 | 2 | 2 |
| Complex Processing | 1 | 3 | 3 |
| Reusable Code | 1 | 3 | 3 |
| Easy to Install | 0.5 | 2 | 1 |
| Easy to Use | 0.5 | 3 | 1.5 |
| Portable | 2 | 4 | 8 |
| Easy to Change | 1 | 1 | 1 |
| Concurrent Use | 1 | 2 | 2 |
| Security | 1 | 4 | 4 |
| Access for third Parties | 1 | 5 | 5 |
| Training Needs | 1 | 0 | 0 |
| Total (T Factor) |  |  | 38.5 |

TFactor = 38.5

TCF = 0.6 + (0.01 \* TFactor)

TCF = 0.6 + (0.01 \* 38.5)

TCF = 0.985

* **Environment Factor (EF):**

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Weight | Assessment | Impact |
| Familiar with the Development Process | 1.5 | 4 | 6 |
| Application Experience | 0.5 | 5 | 2.5 |
| Object Oriented Experience | 1 | 3 | 3 |
| Lead Analyst Capability | 0.5 | 2 | 1 |
| Motivation | 1 | 1 | 1 |
| Stable Requirements | 2 | 2 | 4 |
| TOTAL (EFactor) |  |  | 17.5 |

**EFactor = 17.5**

**EF = 1.4 + (-0.03 x EFactor)**

**EF = 1.4 – (0.03 x 17.5)**

**EF = 0.875**

* **Use-Case Points (UCP):**

**UCP = UUCP x TCP x EF**

**UCP = 87 x 0.985 x 0.875**

**UCP = 74.98 Use Case Points**

**Number of Use case Points = 75**

**Minimum hours for each Use Case Point = 10**

**Range for our Use Case Points = 10\*75= 750 hours**

Since number of developers = 4, each developer will spend about **190 hrs.**