Pashto Izdakrra

Software Engineering Course Project

Project Plan Document

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# Project Plan Document

## Project Type

Educational android application.

## Process Model

We are using waterfall model because our requirements are clear and well defined. Our project is short and also less complicated. Any changes at a later stage are less likely.

### Project Deliverables

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

## Project Tasks

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

**Milestone: Product statement defined**

Tasks to determine functional specification

1. Define desired input/output
2. Input functions/output functions
3. Review with Madam Shamsa and course instructor, Hamid Abdul Basit.
4. Review with team members

**Milestone: Functional specification defined**

Tasks for scheduling

1. Group meetings schedule with Madam Shamsa.
2. Group meetings among group members.
3. Gantt Chart

**Milestone: scheduling accomplished**

Tasks to determine estimation

1. Cost estimation
2. Software model specified
3. Project based estimation
4. Estimating with use case points.
5. Use of empirical cost model COCOMO used
6. H/w and s/w cost estimations

**Milestone: estimations calculated**

Tasks for designing phase

1. Data flow diagrams for the proposed system
2. Entity relationship diagrams
3. Normalization of tables
4. Rough design of tables
5. Data dictionary

**Milestone: final design**

Tasks for coding/implementation

1. Designing the database in SQLite manager.
2. Designing user interface in Android.
3. Connectivity handling between Android SDK and SQLite Manager
4. Coding of all modules searching, circulation
5. **Milestone: coding accomplished**

Tasks for testing

1. Devising test cases
2. Test cases run
3. User acceptance activity

**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.

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Planned Starting Date for a Task | 26th March | 29th March | 1st April | 5th April | 8th April | 11th April | 15th April | 20th April | 23rd April | 25th April | 30th April |
| Tasks |  |  |  |  |  |  |  |  |  |  |  |
| Developing algorithms for the game “Blinking Colors” (Quratulain) |  |  |  |  |  |  |  |  |  |  |  |
| Implementation of the respective game (Quratulain) |  |  |  |  |  |  |  |  |  |  |  |
| Developing algorithms for the games  ”Catch the word”, “Number Game”,  “Pashtoon-91”  (Aakif, Danish) |  |  |  |  |  |  |  |  |  |  |  |
| Implementation of the three mentioned games (Aakif,Danish) |  |  |  |  |  |  |  |  |  |  |  |
| Collecting data (Zarmina) |  |  |  |  |  |  |  |  |  |  |  |
| Developing algorithms to design a database (Zarmina) |  |  |  |  |  |  |  |  |  |  |  |
| Creating classes and tables (Zarmina) |  |  |  |  |  |  |  |  |  |  |  |
| Loading data (Zarmina) |  |  |  |  |  |  |  |  |  |  |  |
| Connecting database with android SDK (Zarmina) |  |  |  |  |  |  |  |  |  |  |  |
| User Interface (Zarmina) |  |  |  |  |  |  |  |  |  |  |  |
| Inserting games (Zarmina) |  |  |  |  |  |  |  |  |  |  |  |

## Team Structure

|  |  |  |
| --- | --- | --- |
| **Role** | **Responsibility** | **Person** |
| Game Developer | Responsible for coding and developing games. | **Quratulain Zahid** |
| Game Developer | Responsible for coding and developing games. | **Aakif Sultan** |
| Game Developer | Responsible for coding and developing games. | **Danish Jalil** |
| System(Database)  Designer | Responsible for designing a database where all the data is stored, and for accessing and connecting that data to the interface. | **Zarmina Khan** |

## Task and Member Assignment Table

### Allocation of People to Activities

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

|  |  |  |
| --- | --- | --- |
| ***No.*** | ***Activities*** | ***Members*** |
| ***1*** | ***Developing algorithms for the game “Blinking Colors”*** | ***Quratulain Zahid*** |
| ***2*** | ***Implementation of the respective game*** | ***Quratulain Zahid*** |
| ***3*** | ***Developing algorithms for the games***  ***”Catch the word”, “Number Game”,***  ***“Pashtoon-91”*** | ***Danish Jalil***  ***Aakif Sultan*** |
| ***4*** | ***Implementation of the three mentioned games*** | ***Danish Jalil***  ***Aakif Sultan*** |
| ***5*** | ***Collecting data*** | ***Zarmina Khan*** |
| ***6*** | ***Developing algorithms to design a database*** | ***Zarmina Khan*** |
| ***7*** | ***Creating classes and tables and loading data into respective tables*** | ***Zarmina Khan*** |
| ***8*** | ***Connecting database with android SDK*** | ***Zarmina Khan*** |
| ***9*** | ***Creating User Interface*** | ***Zarmina Khan*** |

### Resource Allocation

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

## Project/Product Estimates

Total Use cases from SRS document = 7.

### Project Estimation by Use Case Point Analysis

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

|  |  |  |  |
| --- | --- | --- | --- |
| Use-Case Complexity | Weight | Number of Use Cases | Product |
| Simple | 5 | 2 | 10 |
| Average | 10 | 1 | 10 |
| Complex | 15 | 4 | 60 |
| TOTAL |  |  | 80 |

UUCW = 80

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

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

UAW = 1

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

UUCP = UUCW + UAW

UUCP = 80 + 1 = 81

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

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Weight | Assessment | Impact |
| Distributed System | 2 | 2 | 4 |
| Performance Objectives | 2 | 3 | 6 |
| End-User Efficiency | 1 | 4 | 4 |
| Complex Processing | 1 | 1 | 1 |
| Reusable Code | 1 | 1 | 1 |
| Easy to Install | 0.5 | 5 | 2.5 |
| Easy to Use | 0.5 | 5 | 2.5 |
| Portable | 2 | 4 | 8 |
| Easy to Change | 1 | 2 | 2 |
| Concurrent Use | 1 | 3 | 3 |
| Security | 1 | 2 | 2 |
| Access for third Parties | 1 | 0 | 0 |
| Training Needs | 1 | 1 | 1 |
| Total (T Factor) |  |  | 37 |

TFactor = 37

TCF = 0.6 + (0.01 \* TFactor)

TCF = 0.6 + (0.01 \* 37)

TCF = 0.97

* **Environment Factor (EF):**

|  |  |  |  |
| --- | --- | --- | --- |
| Factor | Weight | Assessment | Impact |
| Familiar with the Development Process | 1.5 | 3 | 4.5 |
| Application Experience | 0.5 | 1 | 0.5 |
| Object Oriented Experience | 1 | 1 | 1 |
| Lead Analyst Capability | 0.5 | 2 | 1 |
| Motivation | 1 | 4 | 4 |
| Stable Requirements | 2 | 4 | 8 |
| Part-time Staff | -1 | 0 | 0 |
| Difficult Programming Language | -1 | 3 | -3 |
| TOTAL (EFactor) |  |  | 16 |

EFactor = 16

EF = 1.4 + (-0.03 x EFactor)

EF = 1.4 – (0.03 x 16)

EF = 0.92

* + Use-Case Points (UCP):

UCP = UUCP x TCP x EF

UCP = 81 x 0.97 x 0.92

UCP = 72.3 Use Case Points

Number of Use case Points = 72

Minimum hours for each Use Case Point = 20

Minimum hours for each Use Case Point = 28

Range for our Use Case Points = 72\*20 to 28\*72 **= 1440 to 2016 hours**

Since number of developers = 4, each developer will spend about **360 to 504 hrs.**

## Tools and Technology with reasoning

(Below is just an example. Write your own.)

### Front End Tools

Android SDK

#### Reason

Since the project is an Android Application, it requires Android SDK.

### Documentation Tools

Microsoft Word.

#### Reasons

Microsoft Word will be used for documentation and technical writing and compilation purposes.

### Back End Tools

SQLite Manager

#### Reasons

Android Manager requires an SQLite Manager to form a database and then connect with it. It will store all the data which will be accessed with help pf SDK.