**Name:**  Muhammad Bilal

**Father Name:** Haneef Qureshi

**Section:** A

**Teacher:** Dr. Shahab Ahmed Siddique

**Course:** CSSE - 313

**Program:** BSSE

**Department:** UBIT

**Lab Assignment**

**Q1.** Make a Project Plan of at least 50 activities for the following types of projects: [2.5 marks each]

**a. Applying Booch Method**

**b. Applying RUP**

**c. Applying Waterfall**

**d. Applying Spiral**

Choose your own system.

**A.** I have chosen **Bank Management System** for this.

Following are the **Projects Plan** for **Bank Management System.**

**(a)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Plan Activities**  **Grady Booch Method** | **August** | | | | **September** | | | | **October** | | | | **November**  **Start Date : August 1st, 2020**  **End Date : January 31st, 2021**  1 | | | | **December** | | | | **January** | | | |
| **MACRO PROCESS** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **CONCEPTUALIZATION** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Market Research |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyze Industrial Trends |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Research on Predefined Models |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyze Previous Data |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyze Previous Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Creating a New Model |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Passing Test Cases |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Calculation of Model Success |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Conceptualization Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **ANALYSIS** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Feasibility Study |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Requirement Gathering |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Specification |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Organizing Requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Negotiation and Discussion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Verification |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Validation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SRS Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Brainstorming |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyzing requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Requirements modeling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Security Requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **DESIGN** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Identify Design Goals |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System Decomposition |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Logical Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Physical Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Architectural Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Detailed Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Conceptual Data Modeling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Design Management |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data Flow Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data Structure Oriented Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Object-Oriented Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Designing Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CODING AND IMPLEMENTATION** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Modules Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Modules |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Front-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Front-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Back-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Back-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Database Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Database Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Creating Operating Procedures |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Deployment Preparations |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Deploying the Solution |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Stabilizing the Deployment |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Deployment Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MAINTENANCE** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Identification and Tracing |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Corrective Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Adaptive Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Perfective Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Preventive Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Maintenance Management |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Version Tracking |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Releasing Patches |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **MICRO PROCESS (ITERATIVE)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **IDENTIFICATION OF CLASSES AND OBJECTS** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Identify Classes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Identify Objects |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Classes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Objects |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Relation between Classes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Relation between Objects |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **IDENTIFICATION OF THEIR SEMANTICS** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Creation of Initial Design Classes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [Identify Persistent Classes](https://sceweb.uhcl.edu/helm/RationalUnifiedProcess/process/activity/ac_cldes.htm#Define%20Persistent%20Classes) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [Define Class Visibility](https://sceweb.uhcl.edu/helm/RationalUnifiedProcess/process/activity/ac_cldes.htm#Define%20Class%20Visibility) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Operations |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Methods |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define States |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Attributes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [Define Dependencies](https://sceweb.uhcl.edu/helm/RationalUnifiedProcess/process/activity/ac_cldes.htm#Define%20Dependencies) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [Define Associations](https://sceweb.uhcl.edu/helm/RationalUnifiedProcess/process/activity/ac_cldes.htm#Define%20Associations) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| [Define Generalizations](https://sceweb.uhcl.edu/helm/RationalUnifiedProcess/process/activity/ac_cldes.htm#Define%20Generalizations) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **IDENTIFICATION OF THEIR RELATIONSHIP** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Identify Inheritance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Single inheritance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Multi-level inheritance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Multiple inheritance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Multipath inheritance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hierarchical Inheritance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Hybrid Inheritance |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **IDENTIFICATION OF THEIR INTERFACES AND IMPLEMENTAION** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Identify Interface |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Identify Abstract Classes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Interface |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Define Abstract Classes |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**(b)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | |  |  | |  | |  |  |  | |
|  |  |  |  |  | |  |  | |  | |  |  |
|  |  |  |  |  | |  |  | |  | |  |  |
|  |  |  |  |  | |  |  | |  | |  |  |
|  |  |  |  |  | |  |  | |  | |  |  |
|  |  |  |  | **Start Date** | | | **February 6, 2021** | | | | |  |
|  |  |  | **Rational Unified Process** | **End Date** | | | **April 16, 2021** | | | | |  |
|  |  |  |  |  | |  |  | |  | |  |  |
|  |  |  |  |  |  | | |  | |
| **PLAN ACTIVITIES** | | **Week 1** | **Week 2** | **Week 3** | | **Week 4** | **Week 5** | | **Week 6** | | **Week 7** | **Week 8** | **Week 9** | **Week 10** |
| February | February | February | | February | March | | March | | March | March | April | April |
| 6 | 13 | 20 | | 27 | 3 | | 10 | | 17 | 24 | 7 | 16 |
| **INCEPTION** | Feasibility Study |  |  |  | |  |  | |  | |  |  |  |  |
| Requirement Gathering | v |  |  | |  |  | |  | |  |  |  |  |
| Software Requirement Specification |  |  |  | |  |  | |  | |  |  |  |  |
| Organizing Requirement |  |  |  | |  |  | |  | |  |  |  |  |
| Negotiation and Discussion |  |  |  | |  |  | |  | |  |  |  |  |
| Software Requirement Verification |  |  |  | |  |  | |  | |  |  |  |  |
| Software Requirement Validation |  |  |  | |  |  | |  | |  |  |  |  |
| SRS Documentation |  |  |  | |  |  | |  | |  |  |  |  |
| Brainstorming |  |  |  | |  |  | |  | |  |  |  |  |
| Analyzing requirements |  |  |  | |  |  | |  | |  |  |  |  |
| Requirements modeling |  |  |  | |  |  | |  | |  |  |  |  |
| Security Requirements |  |  |  | |  |  | |  | |  |  |  |  |
| **ELABORATION** | Define Baseline |  |  |  | |  |  | |  | |  |  |  |  |
| Define Architecture |  |  |  | |  |  | |  | |  |  |  |  |
| Identify Design Goals |  |  |  | |  |  | |  | |  |  |  |  |
| System Decomposition |  |  |  | |  |  | |  | |  |  |  |  |
| Logical Design |  |  |  | |  |  | |  | |  |  |  |  |
| Physical Design |  |  |  | |  |  | |  | |  |  |  |  |
| Architectural Design |  |  |  | |  |  | |  | |  |  |  |  |
| Detailed Design |  |  |  | |  |  | |  | |  |  |  |  |
| Conceptual Data Modeling |  |  |  | |  |  | |  | |  |  |  |  |
| Design Management |  |  |  | |  |  | |  | |  |  |  |  |
| Data Flow Design |  |  |  | |  |  | |  | |  |  |  |  |
| Data Structure Oriented Design |  |  |  | |  |  | |  | |  |  |  |  |
| Object-Oriented Design |  |  |  | |  |  | |  | |  |  |  |  |
| Designing Documentation |  |  |  | |  |  | |  | |  |  |  |  |
| **CONSTRUCTION** | Build Component 1 |  |  |  | |  |  | |  | |  |  |  |  |
| Unit Testing of Component 1 |  |  |  | |  |  | |  | |  |  |  |  |
| Build Component 2 |  |  |  | |  |  | |  | |  |  |  |  |
| Unit Testing of Component 2 |  |  |  | |  |  | |  | |  |  |  |  |
| Build Component 3 |  |  |  | |  |  | |  | |  |  |  |  |
| Unit Testing of Component 3 |  |  |  | |  |  | |  | |  |  |  |  |
| Modules Coding |  |  |  | |  |  | |  | |  |  |  |  |
| Front-end Coding |  |  |  | |  |  | |  | |  |  |  |  |
| Back-end Coding |  |  |  | |  |  | |  | |  |  |  |  |
| Database Coding |  |  |  | |  |  | |  | |  |  |  |  |
| Database Coding |  |  |  | |  |  | |  | |  |  |  |  |
| Unit Testing of Database Coding |  |  |  | |  |  | |  | |  |  |  |  |
| Coding Documentation |  |  |  | |  |  | |  | |  |  |  |  |
| **TRANSITION** | Identification and Tracing |  |  |  | |  |  | |  | |  |  |  |  |
| Corrective Maintenance |  |  |  | |  |  | |  | |  |  |  |  |
| Adaptive Maintenance |  |  |  | |  |  | |  | |  |  |  |  |
| Perfective Maintenance |  |  |  | |  |  | |  | |  |  |  |  |
| Preventive Maintenance |  |  |  | |  |  | |  | |  |  |  |  |
| Installation and Activation |  |  |  | |  |  | |  | |  |  |  |  |
| Implement enhancements |  |  |  | |  |  | |  | |  |  |  |  |
| Interface with other systems. |  |  |  | |  |  | |  | |  |  |  |  |
| Maintenance Management |  |  |  | |  |  | |  | |  |  |  |  |
| Version Tracking |  |  |  | |  |  | |  | |  |  |  |  |
| Releasing Patches |  |  |  | |  |  | |  | |  |  |  |  |
| Retirement of Old Version. |  |  |  | |  |  | |  | |  |  |  |  |

**(c)**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Waterfall Project Plan** |  |  |  |  |  |  |  |  |  |  | |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | **Start Date** | | **January 6, 2020** | | |  |
|  |  |  |  | **End Date** | | **March 16, 2020** | | |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| **PLAN ACTIVITIES** | | **Week 1** | **Week 2** | **Week 3** | **Week 4** | **Week 5** | **Week 6** | **Week 7** | **Week 8** | **Week 9** | **Week 10** |
| January | January | January | January | February | February | February | February | March | March |
| 6 | 13 | 20 | 27 | 3 | 10 | 17 | 24 | 7 | 16 |
| **REQUIREMENT GATHERING**  **& ANALYSIS** | Feasibility Study |  |  |  |  |  |  |  |  |  |  |
| Requirement Gathering |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Specification |  |  |  |  |  |  |  |  |  |  |
| Organizing Requirement |  |  |  |  |  |  |  |  |  |  |
| Negotiation and Discussion |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Verification |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Validation |  |  |  |  |  |  |  |  |  |  |
| SRS Documentation |  |  |  |  |  |  |  |  |  |  |
| **SYSTEM DESIGN** | Identify Design Goals |  |  |  |  |  |  |  |  |  |  |
| System Decomposition |  |  |  |  |  |  |  |  |  |  |
| Logical Design |  |  |  |  |  |  |  |  |  |  |
| Physical Design |  |  |  |  |  |  |  |  |  |  |
| Architectural Design |  |  |  |  |  |  |  |  |  |  |
| Detailed Design |  |  |  |  |  |  |  |  |  |  |
| Conceptual Data Modeling |  |  |  |  |  |  |  |  |  |  |
| Design Management |  |  |  |  |  |  |  |  |  |  |
| **IMPLEMENTATION** | Build Component 1 |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Component 1 |  |  |  |  |  |  |  |  |  |  |
| Build Component 2 |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Component 2 |  |  |  |  |  |  |  |  |  |  |
| Modules Coding |  |  |  |  |  |  |  |  |  |  |
| Front-end Coding |  |  |  |  |  |  |  |  |  |  |
| Back-end Coding |  |  |  |  |  |  |  |  |  |  |
| Database Coding |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Each Component |  |  |  |  |  |  |  |  |  |  |
| **INTEGRATION & TSETING** | Integration of Components |  |  |  |  |  |  |  |  |  |  |
| Integration of Modules |  |  |  |  |  |  |  |  |  |  |
| Integration Testing |  |  |  |  |  |  |  |  |  |  |
| System Testing |  |  |  |  |  |  |  |  |  |  |
| Bottom-up Integration Testing |  |  |  |  |  |  |  |  |  |  |
| Incremental Testing |  |  |  |  |  |  |  |  |  |  |
| Big Bang Testing |  |  |  |  |  |  |  |  |  |  |
| Acceptance Testing |  |  |  |  |  |  |  |  |  |  |
| **DEPLOYMENT OF SYSTEM** | Creating Operation Procedures |  |  |  |  |  |  |  |  |  |  |
| Deployment Preparations |  |  |  |  |  |  |  |  |  |  |
| Deploying the Solution |  |  |  |  |  |  |  |  |  |  |
| Core Technology Deployment |  |  |  |  |  |  |  |  |  |  |
| Site Deployments |  |  |  |  |  |  |  |  |  |  |
| Stabilizing the Deployment |  |  |  |  |  |  |  |  |  |  |
| Transferring Ownership to Operations Team |  |  |  |  |  |  |  |  |  |  |
| Closing the Deploying Phase |  |  |  |  |  |  |  |  |  |  |
| **MAINTENANCE** | Identification and Tracing |  |  |  |  |  |  |  |  |  |  |
| Corrective Maintenance |  |  |  |  |  |  |  |  |  |  |
| Adaptive Maintenance |  |  |  |  |  |  |  |  |  |  |
| Perfective Maintenance |  |  |  |  |  |  |  |  |  |  |
| Preventive Maintenance |  |  |  |  |  |  |  |  |  |  |
| Installation and Activation |  |  |  |  |  |  |  |  |  |  |
| Maintenance Management |  |  |  |  |  |  |  |  |  |  |
| Version Tracking |  |  |  |  |  |  |  |  |  |  |
| Releasing Patches |  |  |  |  |  |  |  |  |  |  |

**(d)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Plan Activities**  **Spiral Model**(ITERATIVE) | **January** | | | | **February** | | | | **March** | | | | **April**  **Start Date : January 1st, 2020**  **End Date : July 31st, 2020** | | | | **June** | | | | **July** | | | |
| **IDENsfTIFICATION** | | | | | | | | | | | | | | | | | | | | | | | | |
| Feasibility Study |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Requirement Gathering |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Specification |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Organizing Requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Negotiation and Discussion |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Verification |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Software Requirement Validation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SRS Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Brainstorming |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyzing requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Requirements modeling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Security Requirements |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **SYSTEM DESIGN** | | | | | | | | | | | | | | | | | | | | | | | | |
| Identify Design Goals |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| System Decomposition |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Logical Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Physical Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Architectural Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Detailed Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Conceptual Data Modeling |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Design Management |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data Flow Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Data Structure Oriented Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Object-Oriented Design |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Designing Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **CODING** | | | | | | | | | | | | | | | | | | | | | | | | |
| Build Component 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Component 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Build Component 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Component 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Build Component 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Component 3 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Modules Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Modules |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Front-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Front-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Back-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Back-end Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Database Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Unit Testing of Database Coding |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Coding Documentation |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **RISK ANALYIS AND EVOLUATION** | | | | | | | | | | | | | | | | | | | | | | | | |
| Identify Risk |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Sources |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Category |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Analyze Risk |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prioritize Risk |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Probability of Risk Occurrence |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Impact |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Exposure |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Occurrence Timeframe |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Triggers |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Response Plan |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Risk Audit |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |