

**INTERNATIONAL SCHOOL**

***GreenBig5***

Project Plan

# Project Code: GB5 Document Code: GB5-PPD– v2.4

**Mentor:** Doctor. Habil. Binh, Nguyen Thanh

# Group: C2SE.32

* Loc, Nguyen Tien
* Chung, Hoang Bao
* Vinh, Do Quang
* Kha, Ngo Van

# Da Nang, 20-Feb-2022

**SIGNATURE PAGE**

**Name Signature Date**

**Binh, Thanh Nguyen 15/05 /2022**

|  |  |
| --- | --- |
| **AUTHOR:** | Chung, Hoang Bao Content Management  AI developer |
| **REVIEWERS:** | Loc, Nguyen Tien API developer  Application developer |
| Kha, Ngo Van Application Developer  UI designer |
| Vinh, Do Quang Full-stack Developer |
| **MENTOR:** | Binh, Thanh Nguyen Stakeholder |

**RECORD OF CHANGE**

**\*A - Added M - Modified D – Deleted**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Effective**  **Date** | **Changed Item** | **A,M, D** | **Reason for Change** | **Revision Number** |
| **1** | **UI for Application** | **M** | **Improve UI for register in the app** |  |
| **2** | **Send question to all user** | **A** |  |  |
| **3** | **Manage content** | **A** |  |  |
| **4** | **Manage indicator** | **A** |  |  |
| **5** | **Update physical database** | **A** |  |  |
| **6** | **Manage GB5 scenario** | **A** |  |  |
| **7** | **Update GB5 Scenario** | **M** | **Improve Scenario** |  |
| **8** | **Update GB5 Question** | **M** | **Upgrade System** |  |

# TABLE OF CONTENTS

[PROJECT OVERVIEW](#_bookmark0) [6](#_bookmark0)

[Project Description](#_bookmark1) [6](#_bookmark1)

[Scope and Purpose](#_bookmark2) [6](#_bookmark2)

[Assumptions and Constraints](#_bookmark3) [7](#_bookmark3)

[Project Objectives](#_bookmark4) [8](#_bookmark4)

[Standard Objectives](#_bookmark5) [8](#_bookmark5)

[Specific Objectives](#_bookmark6) [9](#_bookmark6)

[Critical Dependencies](#_bookmark7) [9](#_bookmark7)

[Project Risk](#_bookmark8) [9](#_bookmark8)

[PROJECT DEVELOPMENT APPROACH](#_bookmark9) [10](#_bookmark9)

[Technical Process](#_bookmark10) [10](#_bookmark10)

[Reasons for selecting](#_bookmark11) [10](#_bookmark11)

[Agile Methodology [1]](#_bookmark12) [11](#_bookmark12)

About Scrum: 11

[Quality Management](#_bookmark13) [12](#_bookmark13)

[Estimates of Defects to be detected](#_bookmark14) [12](#_bookmark14)

[Strategy for Meeting Quality Objectives](#_bookmark15) [13](#_bookmark15)

[Quality Control](#_bookmark16) [14](#_bookmark16)

[Measurements Program](#_bookmark17) [15](#_bookmark17)

[Unit Testing Strategy](#_bookmark18) [16](#_bookmark18)

[Integration Testing Strategy](#_bookmark19) [17](#_bookmark19)

[System Testing Strategy](#_bookmark20) [17](#_bookmark20)

[ESTIMATION](#_bookmark21) [18](#_bookmark21)

[Size](#_bookmark22) [18](#_bookmark22)

[Effort](#_bookmark23) [20](#_bookmark23)

[Schedule](#_bookmark24) [21](#_bookmark24)

[Project Milestone & Deliverables](#_bookmark25) [21](#_bookmark25)

[Resource](#_bookmark26) [27](#_bookmark26)

[Infrastructure](#_bookmark27) [27](#_bookmark27)

[Training Plan](#_bookmark28) [29](#_bookmark28)

[Finance](#_bookmark29) [30](#_bookmark29)

[PROJECT ORGANIZATION](#_bookmark30) [31](#_bookmark30)

[Organization Structure](#_bookmark31) [31](#_bookmark31)

[Project Team](#_bookmark32) [32](#_bookmark32)

[COMMUNICATION & REPORTING](#_bookmark33) [33](#_bookmark33)

[CONFIGURATION MANAGEMENT](#_bookmark34) [37](#_bookmark34)

[SECURITY ASPECTS](#_bookmark35) [37](#_bookmark35)

[REFERENCES](#_bookmark36) [37](#_bookmark36)

[DEFINITIONS AND ACRONYMS](#_bookmark37) 37

1. **PROJECT OVERVIEW**

### Project Description

|  |  |  |  |
| --- | --- | --- | --- |
| **Project code** | GB5 | **Contract type** | Internal Project |
| **Customer** |  | **End-User** |  |
| **Project Type** | Internal | **Project Manager/ Scrum master** | Loc, Nguyen Tien |
| **Project Category** | Development | **Business domain** |  |

* 1. ***Scope and Purpose***
     1. ***Project Propose***

The aim of this project is to build a GreenBig 5 information system (GB5), i.e., GB5 App, database and GB5 Dashboard:

* GB5 Dashboard: Support for create question packages which used to direct the user follow the environment theme. With each question, users can be distributed by Indicator (2). Finally, by using a prediction method to predict the user's personality traits (3) and predicts linkings between big5 traits and environmental impacts.

Implemented through 3 steps:

1. Expert models: expert users use the dashboard to specify the linkings between big traits -facets and environmental keywords structured in tree formats.
2. Questions are defined and generated based on the expert model (1).
3. Predict and verify expert model by using answer results of (2), Based on that. we can verify if the expert model is apllied for which group(s) of users.

* GB5 App (Update): GB5 Application receives user activity data by listening to the event, the state, of the system emitted through Intent so that the system can find out the user’s location based.

As a result, government authorities, enterprises, as well as users would have an overview of the environment and have a better solution to change user behaviour and to reduce and prevent it from the bad effect.

* + 1. ***Project Scope***

In this project scope, we implement these features about user data, Big5 data, Big5 indicators, Big5 question

* For the Application (GB5 Application):
  + Login/logout.
  + Sign In.
  + View question.
  + Answer question.
* For the Database (GB5 Database):
  + Storage user’s information.
  + Storage user’s personality traits.
  + Storage, Big5 Question
* For the Dashboard:
  + Visualize the user's Big5 personality traits.
  + Visualize data into a chart....
  + Create question from keywords connect big5 indicator trait
  + See the direct the user follows the environtment theme
  + Send a question to the whole user to see the flow.

Language:

* English

Duration:

* 12 weeks

### Assumptions and Constraints

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | | **Description** | **Note** |
| **Assumptions** | | | |
| 1 | The personality traits to environment concern would not be done in this phase | | Scope |
| 2 | User’s personality will be predicted in this phase | | Propose |
| 3 | Customer reviewers will get seven days to approve a milestone document. If no comments are received within this time period, it will be considered as approved. | | External Interfaces |
| 4 | The project support for Android and IOS operated system | | Scope |
| **Constraints** | | | |
| 1 | Module A must be completed and delivered to customer before 09-Sep because customer must demo to its end user by 11-Sep | | Schedule |
| 2 | The project shall conform to security requirements specified by the customer in the NDA | | Security |
| 3 | The product operated in high performance and have a page load of no more 10 seconds | | Quality |
| 4 | The financial estimation for the project is at a budget limit of $4234 | | Budget |
| 5 | The project will be implemented by a team including 4 members | | Resources |

* 1. ***Project Objectives***
     1. **Standard Objectives**

|  |  |  |  |
| --- | --- | --- | --- |
| **Metrics** | **Unit** | **Committed** | **Note** |
| **Start Date** | dd-mmm-yy | 01-March-22 |  |
| **End Date** | dd-mmm-yy | 16-May-22 |  |
| **Duration** | days | 75 days |  |
| **Team Size** | 4 Person (s) | 4 Person (s) |  |
| **Billable Effort /** | Person-day | 220 |  |
| **Number of work hours per day for one engineer** | Person-hour | 2.5 |  |

**Table 1-1.4.1: *Resources***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Metric** | | **Unit** | | **Target SLS** | | | | | **Basic for Setting goal** | |
| **SLS** | **Average** | | **USL** | |  | |
| **Quality** | | | | | | | | | | |
| Customer  Satisfaction | | Point | | 8 | 9 | | 9.5 | | Refer to Gx Target in the year 2020, 10% higher than previous project (A project) | |
| Leakage | | Wdef/UCP | |  |  | |  | |  | |
| Process  Compliance | | NC/Ob | |  |  | |  | |  | |
| **Cost** | | | | | | | | | | |
| Effort Efficiency | | % | | 80 | 75 | | 90 | |  | |
| Correction Cost | | % | | 65 | 60 | | 75 | |  | |
| **Delivery** | | | | | | | | | | |
| Timeliness | % | | 90 | | | 95 | | 75 | |  |
| Requirement  Completeness | % | | 80 | | | 70 | | 70 | |  |

**Table 2-1.4.1: *Resources***

* + 1. **Specific Objectives**
       - Based on the human resources with allowable time and cost, we will build a system to predict user’s personality
       - This information system operated with high performance and safety for the user. User security data is encrypted and stored carefully, avoiding data loss.
       - The deployment system minimizes defects and good control of risks by the project team.
       - Strengthen brand promotion activities and bring products to users.
       - Deploying applications will be operated quarterly for quick delivery to customer.

### Critical Dependencies

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Dependency** | **Expected delivery date** | **Note** |
| **1** | **GB5 Application** | 25- April-2022 |  |
| **2** | **GB5 Database** | 27-March-2022 |  |
| **4** | **GB5 Dashboard** | 10-May-2022 |  |

* 1. ***Project Risk***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk** | **Description** | **Probability** | **Impact** | **Mitigation Strategy** |
| Incorrect requireme nts | Developing the product which does not accord with the requirements | 3 | 5 | Discuss and communicate frequently with Stakeholders |
| Estimate working time | Actual working time is not enough to finish a task compared to the estimated previous time | 1 | 3 | Review old tasks and evaluations to estimate for the new task. Replan for each sprint. |
| People | Team member who is ill, has health problems, or busy | 3 | 4 | -Notify the scrum master (or ask a colleague to help)  -Complete the assigned tasks when possible |
| Lack of technical experiences | Managing harmful content in the question is a difficult technique that all members need to research and develop. | 4 | 5 | Spend a lot of time learning and training as well creating a new standard. |
| Team Communication | Team members can conflict with each other while discussing | 4 | 4 | Conduct a meeting to share knowledge, experience and learning methods |

1. **PROJECT DEVELOPMENT APPROACH**
   1. ***Technical Process***
      1. **Reasons for selecting**

To follow with today’s technology evolution, we want a flexible and easy model to adapt with the change. Also, our project will update new features in the near future. So, our product would become more interactive and intelligent.

Because our team has a modest number of members as well as little experience development. Therefore, we can’t avoid problems that arise in the software development stages and requirements can change to be more suitable. For the traditional process require a lot of experience, skills and high accuracy

* + 1. **Agile Methodology [1]**

Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.

Agile software development is more than frameworks such as Scrum, Extreme Programming, or Feature-Driven Development (FDD).

Agile software development is more than practices such as pair programming, test- driven development, stand-ups, planning sessions, and sprints.

Agile software development is an umbrella term for a set of frameworks and practices based on the values and principles expressed in the Manifesto for Agile Software Development and the 12 Principles behind it. When you approach software development in a particular manner, it’s generally good to live by these values and principles and use them to help figure out the right things to do given your context.

### Scrum Process

**Figure 1-1.2.1.a: *Scrum process***

### About Scrum:

Scrum is a subset of Agile. It is a lightweight process framework for agile development, and the most widely-used one [1].

Scrum is most often used to manage complex software and product development, using iterative and incremental practices. Scrum significantly increases productivity and reduces time to benefits relative to classic “waterfall” processes. Scrum processes enable organizations to adjust smoothly to rapidly-changing requirements and produce a product that meets evolving business goals.

An agile Scrum process benefits the organization by helping it to

+ Increase the quality of the deliverables

+ Cope better with change (and expect the changes)

+ Provide better estimates while spending less time creating them

+ Be more in control of the project schedule and state.

### Quality Management

* + 1. **Estimates of Defects to be detected**

**Pre-release review defects**

|  |  |  |
| --- | --- | --- |
| **Process** | **Planned found by review** | **Actual found by review** |
| **Requirement** | 90 |  |
| **<Work product>** |  |  |
| **Design** | 80 |  |
| **<Work product>** |  |  |
| **Coding** | 100 |  |
| **<Work product>** |  |  |
| **Other** | 45 |  |
| **<Work product>** |  |  |
| **Total** | **315** |  |

**Table 1-2.1.1: *Pre-release review defects***

**Pre-release test defects**

|  |  |  |
| --- | --- | --- |
| **Process** | **Planned found by review** | **Actual found by testing** |
| **Requirement** | 40 |  |
| **<Work product>** |  |  |
| **Design** | 35 |  |
| **<Work product>** |  |  |
| **Coding** | 150 |  |
| **<Work product>** |  |  |
| **Other** | 15 |  |
| **<Work product>** |  |  |
| **Total** | **240** |  |

**Table 1-2.1.1: *Pre-release test defect***

## Strategy for Meeting Quality Objectives

|  |  |
| --- | --- |
| **Strategy** | **Expected Benefits** |
| Do defect prevention using the standarddefect prevention guidelines and process; use standards developed in Flutter/ Python for coding. | 10–20% reduction in defect injection rate and about 2% improvement in productivity |
| Group review of program specs for first few/logically complex use cases.  Group review of design docs/first time-generated code by project | Improvement in quality as overall defect removal efficiency will improve; some benefits in productivity as defects will be detected early |
| leader, developer, and one consultant. |  |
| Introduction of RUP methodology and implementing the project in iterations. Milestone analysis and defect prevention exercise will be done after each Iteration. | Approximately 5% reduction in defect injection rate and 1% improvement in overall productivity |

* + 1. **Quality Control**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Review Item** | | | | **Type of**  **Review** | **Reviewer** | | **When** |
| Proposal | | | | Group review | Binh, Thanh Nguyen | Initial | |
| Project plan Project schedule CM Plan | | | | Group review | Binh, Thanh Nguyen Loc, Tien Nguyen Chung, Bao Hoang  Kha, Ngo Van  Vinh,Do Quang | End of Initiation stage | |
| Business analysis and requirements specification document, Use Case catalog | | | | Group review | Loc, Nguyen Tien Chung, Hoang Bao Kha, Ngo Van  Vinh, Do Quang | End of 70% requirement | |
| Design document, object model | | | | Group review | Loc, Tien Nguyen Chung, Bao Hoang Kha, Ngo Van  Vinh, Do Quang | End of 90% design | |
| Stage plans | | | | One-person  review | Binh, Thanh Nguyen | Beginning of each stage | |
| Complex/ first specsinl. diagrams | time test | Generatedcases | progam interactive | Group review | Binh, Thang Nguyen  Kha, Ngo Van  Chung, Hoang Bao  Loc, Tien Nguyen  Vinh, Do Quang | End of detailed design | |
| Code | | | | Group review | Kha, Ngo Van  Chung, Hoang Bao  Loc, Tien Nguyen  Vinh, Do Quang | After coding for first few programs | |

* + 1. **Measurements Program**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data to be collected** | **Purpose** | **Responsible** | **When** |
| Size: No. of KLOC// FP | Early estimate project cost | PM/SM | At the end of stages |
| Effort: No. person-day | Calculate project effort for scheduling | Team members | Daily |
| Quality: No. defects detected | Early Evaluate Product quality and  the feasibility of the project | Reviewer, Tester | Right after the review/test |
| Schedule | Divide work and allocate resources properly, ensure the project is complete on time and on budget | PM/SM | Weekly and at the end of stages |

### Unit Testing Strategy

* + - * + ***Grey Box:***

It is a combination of a Black Box and White Box testing. It is the type of testing in which the tester is aware of the internal functionality of a method or unit but not in a deeper level like white box testing. In this, the user is partially aware of the internal functionality of a system.

Write test cases before fixing the defect and independent of each other.

Write cases to verify behavior, also write test cases to ensure the performance of the code

Execute test cases continuously and frequently.

Using tool: Install and run Jest for writing unit test in NodeJS

* + - * + Isolation of a code – Isolate function to test it more rigorously. Isolate code to do Automated Unit Testing in a better way. Isolating functions/code helps to do testing in a good way. It helps to reveal dependencies between functions of code.

### Integration Testing Strategy

* + - * + *Bottom-up Strategy:*

The components below are first written and these are integrated first. The integration happens from bottom to top. If the calling component is yet to be developed, it is replaced by a specially written component called a Drive

When we finish each product backlog, we test it out before we finish.

* + - * + *Bigbang Strategy:*

All components are put together at the same time, there is no order, except all are integrated at the same time.

Towards the end of the project, we started to apply this tactic to test the entire application.

### System Testing Strategy

* + - * + *Automation strategy:*

Automation Testing or Test Automation is a software testing technique that performs using special automated testing software tools to execute a test case suite.

The automation testing software can also enter test data into the System Under Test, compare expected and actual results and generate detailed test reports. Software Test Automation demands considerable investments of money and resources.

Testing tools: Katalon Studio, Appium.

* + - * + *Customer testing (Beta testing) strategy:*

Beta testing is a type of user acceptance testing where the product team gives a nearly finished product to a group of target users to evaluate product performance in the real world.

We are rolling out a beta app on the Google Store early on for testing. After that, we gathered all the feedback and improved our system.

## ESTIMATION

### Size

**Total number of FP: 68**

|  |  |
| --- | --- |
| **Software Scale Drivers** | |
| **Precedentedness** | ***Nominal*** |
| **Development Flexibility** | ***Nominal*** |
| **Architecture / Risk Resolution** | ***Nominal*** |
| **Team Cohesion** | ***Very High*** |
| **Process Maturity** | ***Nominal*** |

**The Size estimation is documented in Page 18-19**

|  |  |  |  |
| --- | --- | --- | --- |
| **Software Cost Drivers** | | | |
| **Product** | | **Personnel** | |
| **Required Software Reliability** | ***Nominal*** | **Analyst Capability** | ***High*** |
| **Database Size** | ***Nominal*** | **Programmer Capability** | ***High*** |
| **Product Complexity** | ***Nominal*** | **Personnel Continuity** | ***Nominal*** |
| **Developed for Reusability** | ***High*** | **Application Experience** | ***High*** |
| **Documentation Match to Lifecycle Needs** | ***Nominal*** | **Platform Experience** | ***High*** |
|  | | **Language and Toolset Experience** | ***High*** |
| **Project** | | **Platform** | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Use of Software Tools** | ***High*** | **Time Constraint** | ***Nominal*** |
| **Development** | ***Nominal*** | **Storage Constraint** | ***Nominal*** |
| **Required Development Schedule** | ***Nominal*** | **Platform Volatility** | ***Nominal*** |

**Software Development (Elaboration and Construction)**

Effort = 9.6 Person-months Schedule = 7.7 Months Cost = $2873

Total Equivalent Size = 5440 SLOC Effort Adjustment Factor (EAF) = 0.52

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Acquisition Phase Distribution** | | | | | |  |
|  | **Phase** | **Effort (Person- months)** | **Schedule**  **(Months)** | **Average Staff** | **Cost**  **(Dollars)** |  |
|  | **Inception** | 0.6 | 1.0 | 0.6 | $172 |  |
|  | **Elaboration** | 2.3 | 2.9 | 0.8 | $690 |  |
|  | **Construction** | 7.3 | 4.8 | 1.5 | $2184 |  |
|  | **Transition** | 1.1 | 1.0 | 1.2 | $345 |  |
|  |  |  |  |  |  |  |

* 1. ***Effort***

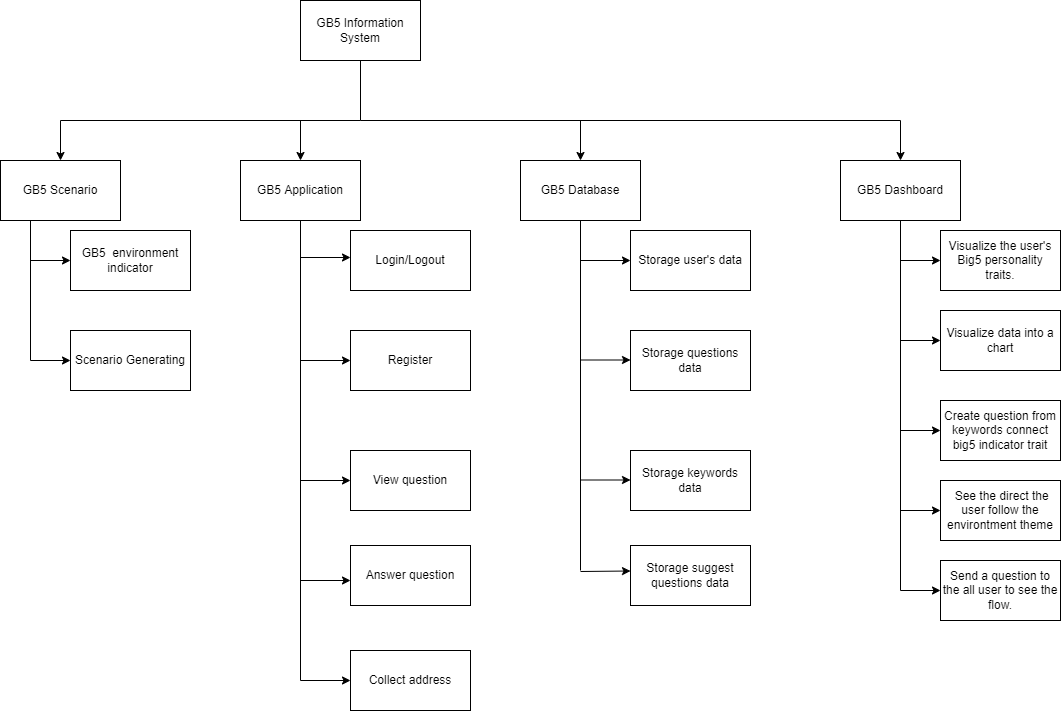
## The Effort estimation is documented in page 19-20

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Activity/Process** | **Total budgeted Effort Usage (pd)** | **Total % budgeted Effort Usage (%)** | **<Stage 1/ Sprint 1>** | | **<Stage 2/ Sprint 2>** | | **<Stage 3 / sprint 3>** | | **<Stage 4/ sprint 4>** | |
| **No** | **%** | **No** | **%** | **No** | **%** | **No** | **%** |
| Requirement | 25 | 10.5 | 8 | 21 | 4 | 10 | 3 | 7 | 2 | 5.9 |
| Design | 11 | 5 | 3 | 7.9 | 2 | 5.3 | 2 | 5 | 2 | 5.9 |
| Coding | 100 | 40 | 10 | 26 | 1 | 36 | 1 | 45 | 1 | 47.1 |
| Unit testing | 11 | 5 | 0 | 0 | 2 | 5.3 | 3 | 7 | 2 | 5.9 |
| Testing | 22 | 10 | 3 | 7.9 | 4 | 10 | 4 | 10 | 4 | 11.8 |
| Deployment | 11 | 5 | 0 | 0 | 2 | 5.3 | 2 | 5 | 2 | 5.9 |
| Support for Acceptance Test | 10 | 4.1 | 0 | 0 | 2 | 5.3 | 1 | 2 | 1 | 2.9 |
| Project Planning | 9 | 4.1 | 4 | 10 | 1 | 2.6 | 1 | 2 | 1 | 2.9 |
| Project monitoring | 14 | 6.4 | 3 | 7.9 | 2 | 5.3 | 3 | 7 | 2 | 5.9 |
| Quality Assurance | 14 | 6.4 | 2 | 5.3 | 2 | 5.3 | 3 | 7 | 2 | 5.9 |
| Trainning | 8 | 3.6 | 5 | 13 | 3 | 7.9 | 0 | 0 | 0 | 0 |
| **Total** | **235** | **100.1** | **38** | **99** | **23** | **98.3** | **23** | **97** | **19** | **100.1** |

### Schedule

* + 1. ***Project Milestone & Deliverables***
       1. Deployment GB5 Scenario
       2. Deployment Application
       3. Deployment Database
       4. Deployment Dashboard

## Work Breakdown Structure



**Table 3.3.2:** *WBS*

* + 1. **Detailed Schedule**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **WBS** | **Task** | **Duration(s)** | | | **Start** | **End** | | **Assign to** | |
| **1** | **Initial** | **7** | | | **15Aug 2022** | **22 Aug**  **2022** | | **Team, Mentor** | |
| **1.1** | Project’s Kick-off Meeting | **1** | | | **18 Feb**  **2022** | **19 Feb**  **2022** | | **Team, Mentor** | |
| **1.2** | Collect and analyse requirements | **4** | | | **19 Feb**  **2022** | **23 Feb**  **2022** | | **Team, Mentor** | |
| **1.3** | Setup Development Environment | **1** | | | **24 Feb**  **2022** | **24 Feb**  **2022** | | **Team, Mentor** | |
| **2** | **Develop** | **75** | | | **1 March**  **2022** | **16 May**  **2022** | | **Team** | |
| **2.1** | **Sprint 1** | **33** | | | **1 March**  **2022** | **4 April**  **2022** | | **Team** | |
| **1** | Research big5 model |  | | |  |  | | **Team** | |
| **2** | Research technical, source code,doc of project |  | | |  |  | | **Team** | |
| **3** | Research create question from keywords |  | | |  |  | | **Team** | |
| **4** | Research model use for AI |  | | |  |  | | **Team** | |
| **2.2** | **Sprint 2** | | **19** | **4 April**  **2022** | | | **23 April**  **2022** | | **Team** |
| **1** | Create model AI for create question and predict big5 trait | |  |  | | |  | | **Team** |
| **2** | Update register page in app | |  |  | | |  | | **Team** |
| **3** | Collect address of user. | |  |  | | |  | | **Team** |
| **2.3** | **Sprint 3** | | **13** | **23 April**  **2022** | | | **6 May**  **2022** | | **Team** |
| **1** | Create API for function python | |  |  | | |  | | **Team** |
| **2** | Connect keywords and big5 indicator trait become a tree | |  |  | | |  | | **Team** |
| **2.4** | **Sprint 4** | | **10** | **6 May**  **2022** | | | **16 May**  **2022** | | **Team** |
| **1** | Create question from keywords connect big5 indicator trait | |  |  | | |  | | **Team** |
| **2** | Save or send question | |  |  | | |  | | **Team** |
| **3** | Notification flow of model AI and the staus of question | |  |  | | |  | | **Team** |

* + 1. **Project Schedule**

**The detailed project schedule is available here The Project Schedule is weekly updated by the Project Manager.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No.** | **Activity** | **Start date** | **Responsible** | **Note** |
| **Defect Prevention** | | | | |
|  | **Task 1** |  |  |  |
|  | **Task 2** |  |  |  |
| **Quality Control** | | | | |
|  | **Review: Work App** | **5-March-2022** | **All Member** |  |
|  | **Review: Work App** | **23-April-2022** | **All Member** |  |
|  | **Review: Work Dashboard** | **6-May-2022** | **All Member** |  |
| **Project Tracking** | | | | |
|  | **< GB5 Scenario> milestone review meeting** | **4-March-2022** | **All Member** |  |
|  | **<GB5 Application> milestone review meeting** | **24-April-2022** | **All Member** |  |
|  | **<GB5 Dashboard> milestone review meeting** | **03-May-2022** | **All Member** |  |

### Infrastructure

|  |  |  |  |
| --- | --- | --- | --- |
| **Work/Product** | **Purpose** | **Expected Availability by** | ***Note*** |
| **Development Environment** | | | |
| NT Server | Operating System | Initiation stage |  |
| IOS | Operating System |  |  |
| Android | Operating System | Initiation stage |  |
| Database | MongoDB | Initiation stage |  |
| Flutter | Development language for Application | Initiation stage |  |
| Python | Development language for AI model | Initiation stage |  |
| NodeJS | Development Environment | Initiation stage |  |
| **Hardware & Software** | | | |
| 1GB space on server | Installation package | Initiation stage |  |
| Pycharm | Development | Initiation stage |  |
| Android Studio | Development | Initiation stage |  |
| MongoDB | Database | Initiation stage |  |
| Rational Rose | Design | Initiation stage |  |
| **Other Tools** | | | |
| CVS | Source version control | Definition stage |  |
| Nunit | Unit Test | Construction stage |  |
| DMS | Defect logging and tracking | Definition stage |  |
| Timesheet | Effort logging | Initiation stage |  |
| FI | Project management tool | Initiation stage |  |
| MS Project | Task tracking | Initiation stage |  |

* 1. ***Training Plan***

|  |  |  |  |
| --- | --- | --- | --- |
| **Training Area** | **Participants** | **When, Duration** | **Waiver Criteria** |
| **Technical** | | | |
| Python Language |  | 17 days | If already trained |
| Flutter Framework |  | 8 days | If already trained |
| **Process** | | | |
| Quality system |  | 3 hrs | Mandatory |
| Configuration management |  | 2 hrs | If already trained for  CC. For others, on-the- job training |
| Group review |  | 4 hrs | If already trained |
| Defect prevention |  | 4.5 hrs | Mandatory |
| SPC tool |  | 4.5 hrs | If already trained |
| RUP methodology |  | 2 hrs | Mandatory |

1. **PROJECT ORGANIZATION**
   1. ***Organization Structure***

|  |  |  |  |
| --- | --- | --- | --- |
| **Scrum Master** | | * Communicate the value of Scrum * Teach the organization on Scrum to maximize business value * Preserve the integrity and spirit of the Scrum framework * Serve as a coach and mentor to members of the Team * Respectfully hold the Team, Product Owner and Stakeholders accountable for their commitments * Continually work with the Team and business to find and implement improvements * As a timekeeper * Helping the team agree on what they can achieve during each development sprint (or other period of time). * Facilitating the daily standup (sometimes called the daily scrum) and helping the team reach consensus on each of the three questions. * Helping the team continuously make progress on the project by making sure each person is working on the right tasks, helping to remove any obstacles to the team members’ progress, and protecting the team from distractions. | Loc, Nguyen Tien |
| **Product Owner** | * A spokesperson for the customer and needs to represent them * Gathers, manages, and prioritizes the product backlog. * Has technical product knowledge or specific domain expertise. * Tracks progress towards the release of a product. | | Loc, Nguyen Tien |
| **Developer** | * Responsible for quality * Responsible for delivering the potentially shippable product of the Application each sprint * Report progress based on the remaining time * Self-organized * Owns the Sprint backlog | | All members |
| **Mentor** | * Guide on the process. * Monitoring all activities of the Team. * Help with anything. * Reviews project documents * Reviews product | | Binh, Nguyen Thanh |

* 1. ***Project Team***

|  |  |
| --- | --- |
| **Full Name** | **Position** |
| Binh, Nguyen Thanh | Mentor |
| Loc, Nguyen Tien | Scrum Master, Dev-team |
| Chung, Hoang Bao | Product Owner, Dev-team |
| Do, Quang Vinh | Dev-team |
| Kha, Ngo Van | Dev-team |

1. **COMMUNICATION & REPORTING**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Communication Type** | **Method**  **/ Tool** | **When** | **Information** | **Particiants / Responsible** |
| **Project Task Tracking** | | | | |
| **Task scheduling** | MS Project Trello | At the beginning of every stage, and weekly. Refinement and rescheduling as necessary |  | Project Mgr(s) |
| **Task assignment** | In Excel file and via project weekly meeting | Weekly |  | Poject leader technical |  |
| **Project Meeting** | | | | |  |
| **Kick-off Meeting** | Face to face Googe meet Slack | Initiation stage | Project introduction;  Project plan review;  Risk identification;  Obtainment of commitent  Of relavant stakeholders | Project Mgr(s), Project Senior Manager, Project Team Members, QA |  |
| **Project Progress Review Meetings** | Face to face Googe meet Slack | Weekly | Communicate project status  Communicate and resolve any open issue, risks, and changes  Discuss any suggested  improvement | Project Mgr(s), Project  Team Members |  |
| **Milestone Meetings** | Face to face Googe meet Slack | Before milestones | Projectobjective review,evaluate project performance (quality, schedule,effort),Causal  analysis,update project plan for next stage | Project Mgr(s), Project Senior Manager, Project Team Members, QA |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Communication Type** | **Method**  **/ Tool** | | | **When** | | | | **Information** | | | **Participants/ Responsible** | |
| **Project Post- mortem Meeting** | Face to face Google meet Slack | | | Termination stage | | | | Wrap-up Evaluate project performance; Team performance; share experiences | | | Project Mgr(s), Project Senior Manager, Project Team Members, QA | |
| **Transfer/Sharing of project documentation/i nformation** | Google Drive Google meet | | | When available | | | | All project documentation and information | | | Project,Mgr(s) Project,Team Members, QA | |
| **Customer Communication and Reporting:** | | | | | | | | | | | | |
| **Project Report** | Agreed standard format between company and customer | | | <5pm Monday, Weekly> | | | | Project status report, Issue requiring clarifications, escalation, if any | | | Project  Manager Sub-Project Managers | |
| **Project Meetings with customer** | Teleco nference /TV Meeting | | | <2pm  Tuesday, Weekly> | | | | As above | | | Project Manager | |
| **Requiremet gathering/c larification** | | | Face to face Meeting Google meet | | During requirement analysis phase | | As in Q&A list | | | Project Manager Business Analyst | | | |
| **Communication with Senior Management** | | | | | | | | | | | | | |
| **Review Project Plan & Project schedule** | | | Slack | | Significant changes to WO, PP  and Project schedule (scope, objectives Organizatio n,HR,  major milestone, deliverables  ) | |  | | | Project Mgr | | | |
| **Project Progress Review** | | | Slack | | Weekly | | Project status report, Issue requiring clarifications, escalation, if any | | | Project Mgr | | | |
| **Project Milestone Review** | | | Google meet Slack | | End of every stage | | Project objective review, evaluate project performance (quality, schedule,effort),Causal  analysis,update project plan for next stage | | | Project Mgr | | | |
| **Other Communication and Reporting:** | | | | | | | | | | | | | |
| **Raise issue or request service/support of BA groups (IT,Admin,QAHR,Training, Recruitment,etc)** | | Calllog.  phone; Slack; | | | | Upon request | | | Request content,expected completion date | | | Project Manager | |

1. **CONFIGURATION MANAGEMENT**

<Refer to the CM plan or insert here the contents of the CM plan as appropriated>

## SECURITY ASPECTS

* The credential data is carefully secured by multi-layer encryption and data integrity is ensured. Regularly backup system data.
* Research on network attack prevention solutions to ensure data security, avoid being exploited and stolen data by hackers.
* Deploy project architecture with a high priority in security. Optimized architectural solutions enable the deployment of data security with 99% reliability.
* Social media, sharing and use of data must be approved by the end user and verified by the organization's management.

**REFERENCES**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Reference**  **item** | **Issued Date** | **Source** | **Note** |
| **1** | **Agile Scrum** | **1-March-2022** | [**https://www.atlassian.com/agile**](https://www.atlassian.com/agile) |  |
| [**https://www.cprime.com/res**](https://www.cprime.com/res)[**ources/what-is-agile-what-is-scrum/**](https://www.cprime.com/resources/what-is-agile-what-is-scrum/) |
| [**https://www.agilealliance.or**](https://www.agilealliance.org/agile101/)[**g/agile101/**](https://www.agilealliance.org/agile101/) |
| **The Scrum Framework by International Scrum Institute** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **2** | **COCOMO II** | **1-March- 2022** | **https://www.rose-**[**hulman.edu/class/csse/cs**](https://www.rose-hulman.edu/class/csse/csse372/201410/SlidePDFs/session12.pdf)[**se372/201410/SlidePDFs/**](https://www.rose-hulman.edu/class/csse/csse372/201410/SlidePDFs/session12.pdf)[**session12.pdf**](https://www.rose-hulman.edu/class/csse/csse372/201410/SlidePDFs/session12.pdf) |  |
| **3** | **Software**  **Standards** | **4-April- 2022** | [**https://www.nws.noaa.gov/o**](https://www.nws.noaa.gov/oh/hrl/developers_docs/General_Software_Standards.pdf)[**h/hrl/developers\_docs/G**](https://www.nws.noaa.gov/oh/hrl/developers_docs/General_Software_Standards.pdf)[**eneral\_Software\_Standards.pdf**](https://www.nws.noaa.gov/oh/hrl/developers_docs/General_Software_Standards.pdf) |  |
| [**https://standards.ieee.org/st**](https://standards.ieee.org/standard/12208-2017.html)[**andard/12208-2017.html**](https://standards.ieee.org/standard/12208-2017.html) |  |
| [**https://sw-eng.larc.nasa.gov/**](https://sw-eng.larc.nasa.gov/) |  |

**DEFINITIONS AND ACRONYMS**

|  |  |
| --- | --- |
| **Aconym** | **Definition** |
| **PM** | **Project Manager** |
| **PTL** | **Project Technical Leader** |
| **QA** | **Quality Assurance Officer** |
| **CC** | **Infrastructure Configuration Controller** |
| **DV** | **Developer** |
| **URD** | **User Requirement Document** |
| **SRS** | **Software Requirement Specification** |
| **ADD** | **Architecture Design Document** |
| **DDD** | **Detail Design Document** |
| **TP** | **Test Plan** |
| **TC** | **Test Case** |
| **SC** | **Source Code** |
| **CM** | **Configuration Management** |
| **CSCI** | **Computer Software Configuration Items** |
| **CI** | **Configuration Item** |
| **CCB** | **Change Control Board** |
| **GB5** | **Green Big5** |