

INTERNATIONAL SCHOOL

*GreenBig 5*

Project Plan

### 

Project Code: GB5

Document Code: GB5-PPD– v2.4

Mentor:  Doctor. Habil. Binh, Nguyen Thanh

Group: C1SE.02

Chinh, Thai Huu

Chung, Hoang Bao

Hau, Phuc Bui

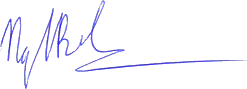
Loc, Nguyen Tien

### 

Da Nang, 8-Sept-2021

SIGNATURE PAGE

Name Signature Date

Binh, Thanh Nguyen \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_31 - Nov- 2021

|  |  |  |
| --- | --- | --- |
| AUTHOR: | Chinh, Thai Huu  Content Management | 8-Sept-2021 |
| REVIEWERS: | Chung, Bao Hoang  Back-end developer | 10-Sept-2021 |
|  | Hau, Phuc Bui  Application Developer | 10-Sept-2021 |
|  | Loc, Tien Nguyen  Database Developer | 10-Sept-2021 |
| MENTOR: | Binh, Thanh Nguyen  Stakeholder | 31-Nov-2021 |
|  |  |  |

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 login in the app |  |
| 2 | Create  chatbot  for  Application | D | Not fit to the project |  |
| 3 | Send question  based on the  scenario | A |  |  |
| 4 | Manage  content | A |  |  |
| 5 | Manage  indicator | A |  |  |
| 6 | Develop  register  by OTP code | D | Out of budget |  |
| 7 | Develop  register  interface | A | Change from OTP by traditional  register |  |
| 8 | Update  physical  database | A |  |  |
| 9 | Manage GB5  scenario | A |  |  |
| 10 | Update GB5  Scenario | M | Improve Scenario |  |
| 11 | Update GB5  Dashboard | M | Upgrade System |  |

TABLE OF CONTENTS

[PROJECT OVERVIEW](#_heading=h.icvyepivnysv) [6](#_heading=h.icvyepivnysv)

[Project Description](#_heading=h.3znysh7) [6](#_heading=h.3znysh7)

[Scope and Purpose](#_heading=h.tyjcwt) [6](#_heading=h.tyjcwt)

[Assumptions and Constraints](#_heading=h.1t3h5sf) [7](#_heading=h.1t3h5sf)

[Project Objectives](#_heading=h.2s8eyo1) [8](#_heading=h.2s8eyo1)

[Standard Objectives](#_heading=h.narg9hdiumfg) [8](#_heading=h.narg9hdiumfg)

[Specific Objectives](#_heading=h.piaps43u95ge) [9](#_heading=h.piaps43u95ge)

[Critical Dependencies](#_heading=h.2kes2xp9zxq) [9](#_heading=h.2kes2xp9zxq)

[Project Risk](#_heading=h.rrv0d8z8cu22) [9](#_heading=h.rrv0d8z8cu22)

[PROJECT DEVELOPMENT APPROACH](#_heading=h.z3y92ms2589x) [10](#_heading=h.z3y92ms2589x)

[Technical Process](#_heading=h.1ci93xb) [10](#_heading=h.1ci93xb)

[Reasons for selecting](#_heading=h.2bn6wsx) [10](#_heading=h.2bn6wsx)

[Agile Methodology [1]](#_heading=h.3as4poj) [11](#_heading=h.3as4poj)

[About Scrum:](#_heading=h.vgll3lahmak3) [11](#_heading=h.vgll3lahmak3)

[Quality Management](#_heading=h.671nzxpvl38z) [12](#_heading=h.671nzxpvl38z)

[Estimates of Defects to be detected](#_heading=h.fc2h64feysh1) [12](#_heading=h.fc2h64feysh1)

[Strategy for Meeting Quality Objectives](#_heading=h.74xjrfs4dzyw) [13](#_heading=h.74xjrfs4dzyw)

[Quality Control](#_heading=h.7dlt9meondik) [14](#_heading=h.7dlt9meondik)

[Measurements Program](#_heading=h.m3210ufadnu) [15](#_heading=h.m3210ufadnu)

[Unit Testing Strategy](#_heading=h.32hioqz) [16](#_heading=h.32hioqz)

[Integration Testing Strategy](#_heading=h.ccvgx5z4twq9) [17](#_heading=h.ccvgx5z4twq9)

[System Testing Strategy](#_heading=h.41ce1rwcl0iw) [17](#_heading=h.41ce1rwcl0iw)

[ESTIMATION](#_heading=h.vx1227) [18](#_heading=h.vx1227)

[Size](#_heading=h.4f1mdlm) [18](#_heading=h.4f1mdlm)

[Effort](#_heading=h.19c6y18) [20](#_heading=h.19c6y18)

[Schedule](#_heading=h.28h4qwu) [21](#_heading=h.28h4qwu)

[Project Milestone & Deliverables](#_heading=h.z7m9a5i74crl) [21](#_heading=h.z7m9a5i74crl)

[Resource](#_heading=h.46r0co2) [27](#_heading=h.46r0co2)

[Infrastructure](#_heading=h.cy7j7zmiexo9) [27](#_heading=h.cy7j7zmiexo9)

[Training Plan](#_heading=h.111kx3o) [29](#_heading=h.111kx3o)

[Finance](#_heading=h.nal532revpyn) [30](#_heading=h.nal532revpyn)

[PROJECT ORGANIZATION](#_heading=h.1egqt2p) [31](#_heading=h.1egqt2p)

[Organization Structure](#_heading=h.pt9bb26qezdv) [31](#_heading=h.pt9bb26qezdv)

[Project Team](#_heading=h.3cqmetx) [32](#_heading=h.3cqmetx)

[COMMUNICATION & REPORTING](#_heading=h.1pvj7g1ksiu) [33](#_heading=h.1pvj7g1ksiu)

[CONFIGURATION MANAGEMENT](#_heading=h.3q5sasy) [37](#_heading=h.3q5sasy)

[SECURITY ASPECTS](#_heading=h.h8n7vt4kpk8z) [37](#_heading=h.h8n7vt4kpk8z)

[REFERENCES](#_heading=h.erienahgjvpl) [37](#_heading=h.erienahgjvpl)

[DEFINITIONS AND ACRONYMS](#_heading=h.skxqpo2as4we) 36

# PROJECT OVERVIEW

## Project Description

|  |  |  |  |
| --- | --- | --- | --- |
| Project code | GB5 | Contract type | Internal Project |
| End-User | Nominal user | | |
| Project Type | Internal | Project Manager/ Scrum master | Chinh, Huu Thai |
| Project Category | Development | | |
| Application type | Information System | | |

## Scope and Purpose

*1.2.a Project Propose*

The aim of this project is to build a GreenBig5 information system (GB5), i.e. GB5 App, database and

GB5 Dashboard. By using GB5 App, user activity data can be collected and used to predict her/his

Personality based on Big5 traits. Afterwards, the user's personality can be seen as one of main key factors,

which have linking to environmental concerns/impacts. 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.

In this phase, we focus on collecting user’s personality data so that the GB5 AI model can predict user’s

personality traits. This would help us in finding the connection between personality and environmental

concern and be prepared for the next phase.

*1.2.b 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.*
  + *View the ranking.*
* *For the Database (GB5 Database):*
  + *Storage user’s information.*
  + *Storage user’s personality traits.*
  + *Storage Big5 Indicator, Big5 Question.*
  + *Send the Big5 Questions to the Application based on the scenario.*
* *For the Dashboard:*
  + *Visualize the user's Big5 personality traits.*
  + *Visualize data into a chart, ...*
  + *Send a question to the user to continue to predict user personality.*

Language:

* Vietnamese
* English

Duration:

* 17 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 has to 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 |

## Project Objectives

### Standard Objectives

|  |  |  |  |
| --- | --- | --- | --- |
| Metrics | Unit | Committed | Note |
| Start Date | dd-mmm-yy | 23-Aug-21 |  |
| End Date | dd-mmm-yy | 12-Dec-21 |  |
| Duration | days | 77 days |  |
| Team Size | 4 Person(s) | 4 Persons |  |
| Billable Effort / | Person-day | 220 |  |
| Number of work hours per day for one engineer | Person-hour | 4.5 |  |

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*

### 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 | 20- Otc-2021 |  |
| 2 | GB5 Database | 21-Otc-2021 |  |
| 3 | GB5 Dashboard | 15-Nov-2021 |  |

## Project Risk

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Risk | Description | Probability | Impact | Mitigation Strategy |
| Incorrect  requirements | 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. |

# PROJECT DEVELOPMENT APPROACH

## Technical Process

### 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 of 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

### Agile Methodology [1]

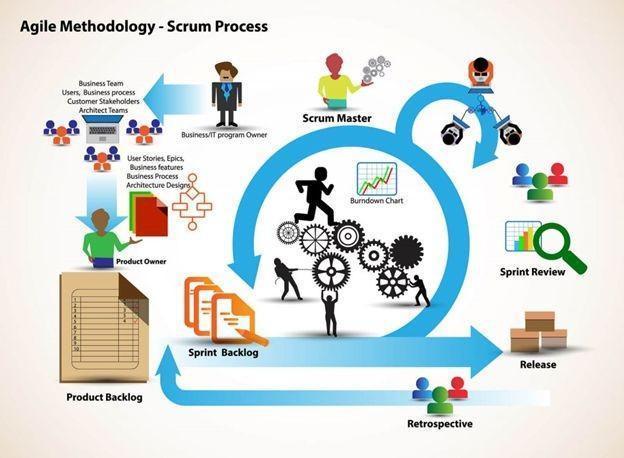
Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.

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 particular context.

*2.1.2.a. 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

### 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 standard defect 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 leader, developer, and one consultant. | Improvement in quality as overall defect removal efficiency will improve; some benefits in productivity as defects will be detected early |
| 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 |

### 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  Hau, Phuc Bui  Chinh, Huu Thai | | End of Initiation stage | | |
| Business analysis and requirements specification document, Use Case catalog | | | | Group  review | Loc, Tien Nguyen  Chung, Bao Hoang  Hau, Phuc Bui  Chinh, Huu Thai | | End of 70% requirement |  |  |
| Design document, object model | | | | Group  review | Loc, Tien Nguyen  Chung, Bao Hoang  Hau, Phuc Bui  Chinh, Huu Thai | | End of 90% design | | |
| Stage plans | | | | One-person review | Binh, Thanh Nguyen | | Beginning of each stage | | |
| Complex/first specs incl. diagrams | Time test | Generated cases, | Program interactive | Group review | Binh, Thang Nguyen  Chinh, Huu Thai  Chung, Hoang Bao  Loc, Tien Nguyen  Hau, Phuc Bui | | End of detailed design | | |
| Code | | | | Group review | Chinh, Huu Thai  Chung, Hoang Bao  Loc, Tien Nguyen  Hau, Phuc Bui | | After coding for first few programs | | |
|  | | | |  |  | |  | | |

### 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 completed 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

* *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 16-17

|  |  |  |  |
| --- | --- | --- | --- |
| 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 | |

## Effort

The Effort estimation is documented in page 18-19

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Activity/Process | Total budgeted Effort Usage (pd) | Total % budgeted Effort Usage (%) | Sprint  1 | | Sprint  2 | | Sprint 3 | | Sprint  4 | |
| No | % | No | % | No | % | No | % |
| Requirement | 25 | 10.5 | 8 | 21.1 | 4 | 10.5 | 3 | 7.5 | 2 | 5.9 |
| Design | 11 | 5.0 | 3 | 7.9 | 2 | 5.3 | 2 | 5 | 2 | 5.9 |
| Coding | 100 | 40.0 | 10 | 26.3 | 14 | 36.8 | 18 | 45 | 16 | 47.1 |
| Unit Testing | 11 | 5.0 | 0 | 0.0 | 2 | 5.3 | 3 | 7.5 | 2 | 5.9 |
| Testing | 22 | 10.0 | 3 | 7.9 | 4 | 10.5 | 4 | 10 | 4 | 11.8 |
| Deployment | 11 | 5.0 | 0 | 0.0 | 2 | 5.3 | 2 | 5 | 2 | 5.9 |
| Support  for Acceptance Test | 10 | 4.1 | 0 | 0.0 | 2 | 5.3 | 1 | 2.5 | 1 | 2.9 |
| Project Planning | 9 | 4.1 | 4 | 10.5 | 1 | 2.6 | 1 | 2.5 | 1 | 2.9 |
| Project monitoring | 14 | 6.4 | 3 | 7.9 | 2 | 5.3 | 3 | 7.5 | 2 | 5.9 |
| Quality Assurance | 14 | 6.4 | 2 | 5.3 | 2 | 5.3 | 3 | 7.5 | 2 | 5.9 |
| Training | 8 | 3.6 | 5 | 13.2 | 3 | 7.9 | 0 | 0 | 0 | 0 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Total | 235 | 100 | 38 | 100 | 38 | 100 | 40 | 100 | 34 | 100 | 36 | 100 | 34 | 100 |

## Schedule

### 

## Project Milestone & Deliverables

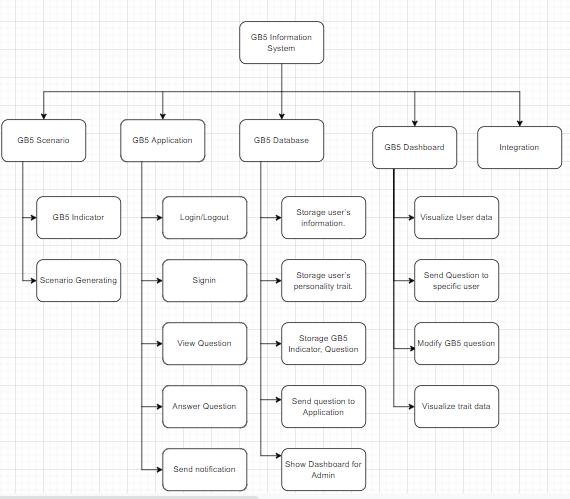
* 1. Deployment GB5 Scenario
  2. Deployment Application
  3. Deployment Database
  4. Deployment Dashboard
     1. Work Breakdown Structure

Table 3.3.2: *WBS*

* + 1. Detailed Schedule

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| WBS | Task | Duration(s) | Start | End | Assign to |
| 1 | Initial | 7 | 15Aug  2021 | 22 Aug  2021 | Team,  Mentor |
| 1.1 | Project’s Kick-off Meeting | 1 | 15 Aug  2021 | 16 Aug  2021 | Team,  Mentor |
| 1.2 | Collect and analyse requirements | 4 | 16 Aug  2021 | 20 Aug  2021 | Team,  Mentor |
| 1.3 | Setup Development Environment | 1 | 20 Aug  2021 | 21 Aug  2021 | Team,  Mentor |
| 1.4 | Research Technical | 1 | 21 Aug  2021 | 22 Aug  2021 | Team,  Mentor |
| 2 | Develop | 105 | 23 Aug  2021 | 15 Dec  2021 | Team |
| 2.1 | Sprint 1 | 28 | 23 Aug  2021 | 20 Sep  2021 | Team |
| 1 | Collect, reconstruct Big-five indicators[\*] and manage content for Big-five questions. |  |  |  | Team |
| 2 | Documentation about GB5 Application functional. |  |  |  | Team |
| 3 | Documentation about GB5 database. |  |  |  | Team |
| 4 | Design GB5 Database |  |  |  | Team |
| 5 | Build GB5 Application UI. |  |  |  | Team |
| 6 | Testing. |  |  |  | Team |
| 2.1 | Sprint 2 | 28 | 22 Sep  2021 | 20 Oct  2021 | Team |
| 1 | Continue collect Big-five indicator |  |  |  | Team |
| 2 | Develop GB5 Application. |  |  |  | Team |
| 3 | Inspect GB5 question data. |  |  |  | Team |
| 4 | Develop GB5 Application. |  |  |  | Team |
| 5 | Develop GB5 database. |  |  |  | Team |
| 6 | Design GB5 Dashboard |  |  |  | Team |
| 2.3 | Sprint 3 | 28 | 23 Oct  2021 | 21 Nov  2021 | Team |
| 1 | Develop GB5 Application |  |  |  | Team |
| 2 | Design GB5 Dashboard UI. |  |  |  | Team |
| 3 | Develop GB5 Dashboard |  |  |  | Team |
| 4 | Testing |  |  |  | Team |
| 2.4 | Sprint 4 | 21 | 24 Nov  2021 | 15 Dec  2021 | Team |
| 1 | Develop GB5 Dashboard |  |  |  | Team |
| 2 | Visualize user data. |  |  |  | Team |
| 3 | Analyze personality data. |  |  |  | Team |
| 4 | Documentation about user’s personality data. |  |  |  | Team |
| 5 | Analyze personality data and correlation to pro-environmental behavior. |  |  |  | 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 Product 1 |  |  |  |
|  | Review: Work Product 2 |  |  |  |
|  | Review: Work Product 3 |  |  |  |
| Project Tracking | | | | |
|  | <Stage name> milestone review meeting |  |  |  |
|  | <Stage name> milestone review meeting |  |  |  |
| Configuration Management | | | | |
|  | <Baseline Name> |  |  |  |
|  | <Baseline Name> |  |  |  |
| QA | | | | |
|  | Final Inspection: Deliverable 1 |  |  |  |
|  | Final Inspection: Deliverable 2 |  |  |  |
|  | Baseline audit: Startup |  |  |  |
|  | Baseline audit: Wrap-up |  |  |  |

## Resource

Specified as in the section [*Project Team*](#_heading=h.3cqmetx)

## Infrastructure

|  |  |  |  |
| --- | --- | --- | --- |
| Work/Product | Purpose | Expected  Availability by | Note |
| Development Environment | | | |
| NT Server | Operating System | Initiation stage |  |
| IOS | Operating System |  |  |
| Android | Operating System |  |  |
| Database | MongoDB |  |  |
| Flutter | Development language for Application |  |  |
| Python | Development language for AI model |  |  |
| NodeJS | Development Environment |  |  |
| Hardware & Software | | | |
| 1GB space on server |  |  |  |
| Pycharm | Development |  |  |
| Android Studio | Development |  |  |
| MongoDB | Database |  |  |
| Rational Rose | Design |  |  |
| 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 |  |

## Training Plan

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

## Finance

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Item | Total Budget | %  Budget | Budget in Period | | | | | | | | | | | Note |
| W1  -  Se p | W2  -  Se p | W3  -  Se p | W4  -  Se p | W1  -  Oct | W2  -  Oct | W3  -  Oct | W4  -  Oct | W1  -  No v | W2  -  No v | W3  -  No v |
| Purchases (COTS) | 150 | 15.6 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 |
| Team  building | 200 | 20.8 | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 30 | 0 | 0 |
| Tools | 100 | 10.4 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Travel  costs | 130 | 13.5 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Training | 80 | 8.3 | 30 | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Review  activities | 250 | 26.0 | 15 | 20 | 15 | 20 | 15 | 20 | 15 | 20 | 15 | 20 | 15 | 20 |
| Other | 50 | 5.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 960 | 100 | 135 | 110 | 25 | 85 | 25 | 60 | 25 | 85 | 25 | 60 | 25 | 30 |

# PROJECT ORGANIZATION

## 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. | Chinh, Thai Huu |
| 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. | Chung, Hoang Bao |
| 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 |

## Project Team

|  |  |
| --- | --- |
| Full Name | Position |
| Binh, Nguyen Thanh | Mentor |
| Chinh, Thai Huu | Scrum Master, Dev-team |
| Chung, Hoang Bao | Product Owner, Dev-team |
| Loc, Nguyen Tien | Dev-team |
| Hau, Bui Phuc | Dev-team |

# COMMUNICATION & REPORTING

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Communication Type | Method / Tool | When | Information | Participants / 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 | Trello | Weekly |  | Project leader | Technical |
| Project Meeting | | | | | |
| Kick-off Meeting | Face to face  Google meet  Slack | Initiation stage | Project introduction; Project plan review; Risk identification; Obtainment of commitment of relevant stakeholders | Project Mgr(s),  Project Senior Manager, Project Team Members, QA | |
| Project Progress Review Meetings | Face to face  Google meet  Slack | Weekly event  and  on | 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  Google meet  Slack | Before milestones | Project objective 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/information | 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 | Teleconference /TV Meeting | 2pm  Tuesday, Weekly | As above | Project Manager |
| Requirement gathering/clarification | 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 Organization,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, QA, HR, Training,  Recruitment,etc) | Call log;  phone;  Slack | Upon request | Request content, expected completion date | Project Manager |

# 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 | 15-Aug-2021 | <https://www.atlassian.com/agile> |  |
| <https://www.cprime.com/resources/what-is-agile-what-is-scrum/> |  |
| <https://www.agilealliance.org/agile101/> |  |
| The Scrum Framework by International Scrum Institute |  |
| 2 | COCOMO II | 15-Aug  2021 | <https://www.rose-hulman.edu/class/csse/csse372/201410/SlidePDFs/session12.pdf> |  |
| 3 | Software  Standards | 20-Aug  2021 | [https://www.nws.noaa.gov/oh/hrl/developers\_docs/General\_So](https://www.nws.noaa.gov/oh/hrl/developers_docs/General_Software_Standards.pdf) [ftware\_Standards.pdf](https://www.nws.noaa.gov/oh/hrl/developers_docs/General_Software_Standards.pdf) |  |
| <https://standards.ieee.org/standard/12208-2017.html> |  |
| <https://sw-eng.larc.nasa.gov/> |  |

# DEFINITIONS AND ACRONYMS

|  |  |  |
| --- | --- | --- |
| Acronym | Definition | Note |
| 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 Big 5 |  |