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**CAPSTONE PROJECT II**

CMU-SE 451

**PROJECT PLAN**

Version 1.2

Date: May 11th, 2021

**FACIAL IDENTIFICATION MATCHING**

**Submitted by**

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| **PROJECT INFORMATION** | | | |
| **Project acronym** | FIM System | | |
| **Project title** | Facial Identification Matching web application | | |
| **Start date** | March 1st, 2021 | **End Date** | Jun 2th, 2021 |
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1. **Project Overview**
   1. **Project Description**

|  |  |  |  |
| --- | --- | --- | --- |
| **Project Code** | C2SE.02 | **Contact Type** | Internal Project |
| **Customer** | Trang, Nguyen Thi Bao M. Sc | **End-User** | Police officer |
| **Project Type** | Internal | **Scrum Master** | Tran, Tran Thi Thuy |
| **Project Category** | Development | **Business Domain** | Crime identifies |
| **Application Type** | Web Application |  |  |

* 1. **Scope and Purpose**
     1. **Scope**
* Over the past years, the crime situation in terms of social order is still complicated. According to statistics in February 2020, for social order, there is an increase of 139 (+3.96%), an increase of 63 cases of discovery (+2.12%), a decrease of 194 the number of arrested and handled subjects. (2.69%). Reduced discovery rates; increase 01 gangs, the group is destroyed. Drug-related crimes: there were 1,952 cases nationwide, which increased by 495 cases over February 2020 (+33.97%). With the wanted work: the whole country has arrested, mobilized surrender, eliminated 433 wanted objects, 98 dangerous and particularly dangerous objects; in which many cases are very cruel, brutal, losing all humanity such as killing many people to steal property, murder, then cutting the body, burning body…
* The above data clearly reflects not only the increasing number of criminals but also shows the increasingly sophisticated tricks to avoid and evade the criminals that make the arrest of criminals. Crime is getting more and more difficult. So, our project was launched and aims to make it easier for law enforcement sectors such as the criminal police to catch criminals, especially those with time long-run away.
  + 1. **Purpose**
* This document provides an overview of how the project will be developed. It includes an overview of the product, an overview of the process, and an overview of the project team.
* In addition, this project is under monitoring by the college campus environment, so, this is a non-profit project and done with cost and time is limited. So, the goal for this project is to be released with 50% of the whole function.
* Through-out the project, the conflicts between team members, the problem occurring during the developing phase, will be a big contribution for all members in learning and developing the technician-skills such as code, test, design… and soft-skills such as teamwork, presentation, solving problems…
  1. **Assumption and Constraints**

|  |  |  |
| --- | --- | --- |
| **No** | **Description** | **Note** |
| **Assumption** | | |
| **1** | Customer reviewers will get a day to approve a milestone document. If no comments are received within this time period, it will be considered as approved. | External Interfaces |
| **Constraints** | | |
| **1** | Module A (Sprint 1) must be completed and delivered to the customer before 25-Mar because the customer has to demo to its end-user by 26-Mar | Schedule |
| **2** | Module B (Sprint 2)must be completed and delivered to the customer before 19-April because the customer has to demo to its end-user by 20-April | Schedule |
| **3** | Module C (Sprint 3) must be completed and delivered to the customer before 13-May because the customer has to demo to its end-user by 14-May | Schedule |
| **4** | Module D (Sprint 4) must be completed and delivered to the customer before 29-May because the customer has to demo to its end-user by 31-May | Schedule |
| **5** | The project shall conform to security requirements specified by the customer in the NDA | Security |

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Metrics** | **Unit** | **Committed** | **Note** |
| Start Date | Dd/mm/yy | 01/03/21 |  |
| End Date | Dd/mm/yy | 02/06/21 |  |
| Duration | Elapsed days | 81 days |  |
| Maximum Team Size | Person | 5 |  |
| Billable Effort | Person-day | 4 |  |
| Calendar effort | Person-day | 4 |  |
| Effort Usage | Person-day | 4 | Efficiently 100% |

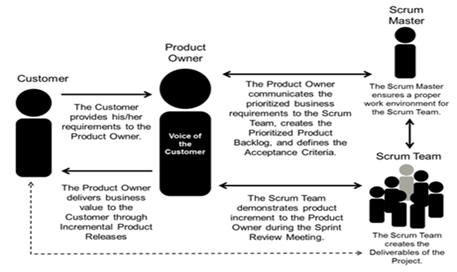
* + 1. **Specific Objectives**

The application will quickly help the officer see and evaluate the suitability of faces extracted from images or cameras (webcam) with the criminals they are looking for. With the Facial Identification Matching web application, the system will supply the officer with the automation processing-net to define the most exact comparison result from the existing images or real-time video (webcam). Moreover, the Facial Identification Matching web application shows the name, gender, age of the objective (person) along with pointing the different traits with the highest similarity rate result. The officer can use the Facial Identification Matching web application anywhere and anytime (or limited only allow use through the network). And the admin officer can manage the criminal cases in the system.

* 1. **Project Risk**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Identify Risk** | **Descriptions** | **Probability** | **Impact** | **Mitigations** |
| Scope definition | Scope changes may arise during the project. The redundant scope may be discovered. | 3 | 4 | Analysis and evaluation scope. |
| Requirement definition | Internal inconsistencies may exist within requirements that may be missing from formal requirement specification. | 2 | 4 | Unifying requirements before proceeding with the analysis. |
| Resources | Key resources may be unavailable when required. Specific skills may not be available when required. | 2 | 2 | Training |
| Communication | The mentor’s requirement may be misunderstood. Project reporting needs may change during the project. | 2 | 3 | Having analyzed the requirement, the mentor should review to ensure that requirements are not misunderstood. |
| Health | Health may change during the project. An accident or incident may occur delaying the project. | 2 | 3 | The project plan has backup time to ensure that if there are any health risks, they will not interrupt the project. |
| Time | The project may not be finished on time. | 5 | 5 | Overtime to finish. |
| Estimate | The size estimate may be below. | 5 | 5 |  |

1. **Project development approach**
   1. **Agile Methodology**



The SCRUM methodology involves the following three main players:

* *Product owner*: In most projects, the product owner is the leader of the client's project team. He is the one who will define and prioritize the product features and choose the date and content of each sprint based on values (workloads) that the team communicates to him
* *Scrum Master*: He is a genuine facilitator on the project as he makes sure that everyone works at their full potential by eliminating impediments and protecting the team from exterior interference. Moreover, he pays particular attention to the respect of the different SCRUM phases.
* *Team:* a team is typically made up of 4-10 people and groups together all the IT specialists who are necessary on a project, i.e., an architect, a designer, a developer, a tester etc. The team is self-organizing and remains unchanged during an entire sprint.
  1. **Scrum Process**

Scrum differs from other development methods through its advantages which turn it into a pragmatic response to product owners' current needs:

* Iterative and incremental method: this allows avoiding the "tunnel effect", i.e., the fact of seeing the result only at the final delivery, and nothing or almost nothing during the entire development phase, which is so frequent with V-cycle developments.
* Maximum adaptability for product and application development: the sequential composition of the sprint content allows adding a modification or a feature that was not initially planned. This is precisely what renders this method "agile".
* Participatory method: every team member is asked to express his opinions and can contribute to all the decisions taken on the project. He is therefore more involved and motivated.
* Enhancing communication: by working in the same development room or being connected through different communication means, the team can easily communicate and exchange opinions on the impediments in order to eliminate them as early as possible.
* Maximizing cooperation: daily communication between the client and the team enables them to collaborate more closely.
* Increasing productivity: as it removes certain "constraints" of the classical methods, such as documentation or exaggerated formalization, SCRUM allows increasing team productivity. By adding to this the qualification of each module which allows determining estimation, everyone can compare their performance to the average team productivity.
  1. **Quality Management**
     1. **Estimates of Defects to be detected**

**Pre-release review defects**

|  |  |  |
| --- | --- | --- |
| **Process** | **Planned found by review** | **Actually, found by review** |
| **Requirement** | **10** | **12** |
| **Design** | **124** | **125** |
| The Product Experience page | 10 | 10 |
| Using camera | 5 | 5 |
| Showing extracted face from the image | 3 | 3 |
| Showing picture’s person name after processing | 5 | 3 |
| Welcome Page | 10 | 10 |
| Show age after the process | 7 | 7 |
| Show gender after processing | 5 | 5 |
| Show picture’s person name after processing | 7 | 5 |
| Show similarity faces using the slideshow | 5 | 5 |
| Show the percentage similarity | 15 | 15 |
| Point out the difference traits | 12 | 15 |
| Login page | 15 | 15 |
| CRUD for admin | 30 | 32 |
| **Coding** | **234** | **229** |
| Choose an image from a computer | 7 | 7 |
| Show uploaded image | 8 | 8 |
| Create API to send the image into the server | 10 | 10 |
| Create API to return the processed result | 10 | 8 |
| Auto extract image from video (webcam) | 7 | 7 |
| Show captured image from video (webcam) | 12 | 12 |
| Extract face from the image | 10 | 10 |
| Determine face landmark | 15 | 15 |
| Analyze data between faces | 20 | 21 |
| Compare data of these faces | 20 | 20 |
| Determine a person's age | 10 | 7 |
| Determine the person's gender | 7 | 7 |
| Determine person’s name | 10 | 10 |
| Calculate the analyzed data between faces | 15 | 15 |
| Analyze landmark in-person’s faces | 13 | 13 |
| Find point out the difference in the face | 10 | 10 |
| Login | 17 | 16 |
| Logout | 3 | 3 |
| CRUD for admin | 35 | 35 |
| **Total** | **373** | **371** |

* + 1. **Strategy for Meeting Quality Objective**

|  |  |
| --- | --- |
| **Strategy** | **Expected Benefits** |
| Do defect prevention using the standard defect prevention guidelines and process; use standards developed in ABC 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 Agile 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** |
| Business analysis and   requirements specification document, Use Case catalog | Group review | Product Owner, Scrum Master | End of 90% requirements |
| Design document, object model | Group review | Product Owner, Scrum Master | End of 90% design |
| Stage plans | One-person review | Scrum Master | Beginning of each stage |
| Complex/first specs incl. diagrams time test generated cases, program interactive | Group review | Scrum Master, Team member | End of detailed design |
| Code | Group review | Scrum Master, Team member | After coding for first few programs |

* + 1. **Measurement Program**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data to be collected** | **Purpose** | **Responsible** | **When** |
| Size: No. of KLOC// FP | Calculate the money of the project | Scrum Master | At the end of stages |
| Effort: No. person-day | Predicting the most realistic amount of effort required to develop or maintain software based on incomplete, uncertain and noisy input | Team members | Daily |
| Quality: No. defects detected | Identify the root causes of defects and improve the process to avoid introducing defects, which help to improve the quality of the software product | Tester | Right after the review/test |
| Schedule | Achieve the goals and priorities in the time that have available | Scrum Master | Weekly and at the end of stages |

* 1. **Unit Testing Strategy**

The system is tested using Unit Testing, a testing technique that uses individual modules tested to determine if there are any problems caused by the developer himself. It is concerned with the functional correctness of the independent modules. And the project will be tested by the white box technique of unit testing:

* White Box Testing - used to test each one of those functions’ behaviors is tested

**Completion criteria:**

* All functions in the program are tested.
* All modules in the system are tested.
* All code in the source code must be tested.
  1. **Integration Testing Strategy**

Integration Testing is a level of software testing where individual units are combined and tested to verify if they are working as they intend to when integrated. The main aim here is to test the interface between the modules.

* Test strategy is Big Bang used to test interfaces between modules.
  1. **System Testing Strategy**

System Testing (ST) is a black-box testing technique performed to evaluate the complete system's compliance against specified requirements. System Testing is usually carried out by a team that is independent of the development team in order to measure the quality of the system unbiased. It includes both functional and Non-Functional testing.

**Completion criteria:**

* 95% of the test cases must be executed
* Can release when only 5% of test cases remain without affecting the project

1. **Estimate**
   1. **Size**

The Size estimation is documented in 

* 1. **Effort**

|  |  |  |
| --- | --- | --- |
| 1 | Effort | $ 3,240.00 |
| 2 | Hardware | $ 5,000.00 |
| 3 | Software | $ 320.00 |
| 4 | Networks | $ 120.00 |
| 5 | On-going support | $ 300.00 |
| 6 | Admin costs not in overhead | $ 300.00 |
| 7 | **Sub Total** | **$ 9,280.00** |
| 8 | Risk | $ 100.00 |
| 9 | Change | $ 100.00 |
|  | **Total (includes Risk & Change)** | **$ 9,480.00** |

* 1. **Schedule**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No** | **Task name** | **Responsibility person** | **Status** | **Duration (day(s))** | **Start** | **Finish** |
| **1** | **Facial Identification Matching Application** | **All members** |  | **81** | **1/3/21** | **2/6/21** |
| **1.1** | **Initial** | **All members** |  | **9** | **1/3/21** | **10/3/21** |
| 1.1.1 | Project kick off meeting | All member | Done | 1 | 1/3/21 | 1/3/21 |
| 1.1.2 | Discuss about project ideal | All member | Done | 2 | 2/3/21 | 3/3/21 |
| 1.1.3 | Create Proposal document | All member | Done | 1 | 4/3/21 | 4/3/21 |
| 1.1.4 | Create Product Backlog document | All member | Done | 1 | 5/3/21 | 5/3/21 |
| 1.1.5 | Create User Story document | All member | Done | 1 | 5/3/21 | 5/3/21 |
| 1.1.6 | Create Project Plan document | All member | Done | 1 | 6/3/21 | 6/3/21 |
| 1.1.7 | Create User Interface document | Kieu, Vi | Done | 1 | 8/3/21 | 8/3/21 |
| 1.1.8 | Create Database document | Tran, Han, Trang | Done | 1 | 8/3/21 | 8/3/21 |
| 1.1.9 | Create Architecture document | All member | Done | 1 | 9/3/21 | 9/3/21 |
| 1.1.10 | Pre-study | All member | Done | 1 | 10/3/21 | 10/3/21 |
| **1.2** | **Development** | **All members** |  | **70** | **11/3/21** | **31/5/21** |
| **1.2.1** | **Sprint 1** | **All members** |  | **14** | **11/3/21** | **26/3/21** |
| 1.2.1.1 | Sprint planning meeting | All member | Done | 1 | 11/3/21 | 11/3/21 |
| 1.2.1.2 | Create Sprint Backlog for Sprint 1 | Tran, Han, Trang | Done | 1 | 11/3/21 | 11/3/21 |
| 1.2.1.3 | Create Test Plan document for Sprint 1 | Kieu, Vi | Done | 1 | 11/3/21 | 11/3/21 |
| 1.2.1.4 | Design UI | Han, Trang | Done | 1 | 12/3/21 | 12/3/21 |
| 1.2.1.5 | Design Test case | Tran, Kieu, Vi | Done | 2 | 12/3/21 | 13/3/21 |
| 1.2.1.6 | [Backend] Create Database Schemas for Project | Tran | Done | 1 | 15/3/21 | 15/3/21 |
| 1.2.1.7 | [Backend] Choose an image from a computer | Han | Done | 3 | 13/3/21 | 16/3/21 |
| 1.2.1.8 | [Backend] Show uploaded image | Trang | Done | 3 | 13/3/21 | 16/3/21 |
| 1.2.1.9 | [Backend] Assemble person image for training (<1000 images) | Tran | Done | 2 | 16/3/21 | 17/3/21 |
| 1.2.1.10 | [Backend] Training image | Tran | Done | 3 | 18/3/21 | 20/3/21 |
| 1.2.1.11 | [Backend] Create API to send the image into the server | Han | Done | 4 | 17/3/21 | 20/3/21 |
| 1.2.1.12 | [Backend] Create API to return the processed result | Trang | Done | 4 | 17/3/21 | 20/3/21 |
| 1.2.1.13 | [Frontend] Setup general layout for the PE page | Vi | Done | 3 | 15/3/21 | 17/3/21 |
| 1.2.1.14 | [Frontend] Create content for the PE page | Vi | Done | 2 | 18/3/21 | 19/3/21 |
| 1.2.1.15 | [Frontend] UI for show uploaded image | Kieu | Done | 5 | 15/3/21 | 19/3/21 |
| 1.2.1.16 | Testing | Kieu, Vi | Done | 3 | 20/3/21 | 23/3/21 |
| 1.2.1.17 | Fix bug | Tran, Han, Trang | Done | 3 | 22/3/21 | 24/3/21 |
| 1.2.1.18 | Re-testing | Kieu, Vi | Done | 1 | 25/3/21 | 25/3/21 |
| 1.2.1.19 | Release Sprint 1 | All members | Done | 1 | 26/3/21 | 26/3/21 |
| **1.2.2** | **Sprint 2** | **All members** |  | **21** | **27/3/21** | **20/4/21** |
| 1.2.2.1 | Sprint planning meeting | All member | Done | 1 | 27/3/21 | 3/27/2021 |
| 1.2.2.2 | Create Sprint Backlog for Sprint 2 | Tran, Trang, Kieu | Done | 1 | 27/3/21 | 3/27/2021 |
| 1.2.2.3 | Create Test Plan document for Sprint 2 | Han, Vi | Done | 1 | 27/3/21 | 3/27/2021 |
| 1.2.2.4 | Design UI | Kieu, Trang | Done | 1 | 29/3/21 | 29/3/21 |
| 1.2.2.5 | Design Test case | Tran, Han, Vi | Done | 2 | 29/3/21 | 30/3/21 |
| 1.2.2.6 | [Backend] Auto extract image from video (webcam) | Han | Done | 5 | 31/3/21 | 5/4/21 |
| 1.2.2.7 | [Backend] Show captured image from video (webcam) | Tran | Done | 5 | 31/3/21 | 5/4/21 |
| 1.2.2.8 | [Backend] Extract face from the image | Trang | Done | 6 | 30/3/21 | 5/4/21 |
| 1.2.2.9 | [Backend] Determine face landmark | Trang | Done | 9 | 6/4/21 | 15/4/21 |
| 1.2.2.10 | [Backend] Analyze data between faces | Tran | Done | 9 | 6/4/21 | 15/4/21 |
| 1.2.2.11 | [Backend] Compare data of these faces | Han | Done | 9 | 6/4/21 | 15/4/21 |
| 1.2.2.12 | [Frontend] UI for the PE page’s menu bar | Kieu | Done | 1 | 30/3/21 | 30/3/21 |
| 1.2.2.13 | [Frontend] UI for the PE page’s footer | Kieu | Done | 1 | 31/3/21 | 31/3/21 |
| 1.2.2.14 | [Frontend] UI for open camera (webcam) | Kieu | Done | 2 | 1/4/21 | 2/4/21 |
| 1.2.2.15 | [Frontend] UI for showing extracted face from the image | Vi | Done | 2 | 31/3/21 | 1/4/21 |
| 1.2.2.16 | [Frontend] UI for showing picture’s person name after processing | Vi | Done | 2 | 2/4/21 | 3/4/21 |
| 1.2.2.17 | Testing | Kieu, Vi | Done | 3 | 14/4/21 | 16/4/21 |
| 1.2.2.18 | Fix bug | Tran, Han, Trang | Done | 3 | 15/4/21 | 17/4/21 |
| 1.2.2.19 | Re-testing | Kieu, Vi | Done | 1 | 19/4/21 | 19/4/21 |
| 1.2.2.20 | Release Sprint 2 | All members | Done | 1 | 20/4/21 | 20/4/21 |
| **1.2.3** | **Sprint 3** | **All members** |  | **21** | **21/4/21** | **14/5/21** |
| 1.2.3.1 | Sprint planning meeting | All member | Done | 1 | 21/4/21 | 21/4/21 |
| 1.2.3.2 | Create Sprint Backlog for Sprint 3 | Tran, Trang, Kieu | Done | 1 | 21/4/21 | 21/4/21 |
| 1.2.3.3 | Create Test Plan document for Sprint 3 | Han, Vi | Done | 1 | 21/4/21 | 4/21/2021 |
| 1.2.3.4 | Design UI | Kieu, Vi | Done | 1 | 22/4/21 | 4/22/2021 |
| 1.2.3.5 | Design Test case | Tran, Han, Trang | Done | 2 | 22/4/21 | 23/4/21 |
| 1.2.3.6 | [Backend] Determine a person's age | Tran | Done | 3 | 24/4/21 | 27/4/21 |
| 1.2.3.7 | [Backend] Determine the person's gender | Trang | Done | 3 | 24/4/21 | 27/4/21 |
| 1.2.3.8 | [Backend] Determine person’s name | Han | Done | 3 | 24/4/21 | 27/4/21 |
| 1.2.3.9 | [Backend] Calculate the analyzed data between faces | Tran | Done | 11 | 28/4/21 | 10/5/21 |
| 1.2.3.10 | [Backend] Analyze landmark in-person’s faces | Han | Done | 11 | 28/4/21 | 10/5/21 |
| 1.2.3.11 | [Backend] Find point out the difference in the face | Trang | Move to sprint 4 | 11 | 28/4/21 | 10/5/21 |
| 1.2.3.12 | [Frontend] Setup general layout for the welcome page | Vi | Done | 2 | 24/4/21 | 26/4/21 |
| 1.2.3.13 | [Frontend] Create menu bar for the welcome page | Vi | Done | 1 | 27/4/21 | 27/4/21 |
| 1.2.3.14 | [Frontend] Create a footer for the welcome page | Vi | Done | 1 | 28/4/21 | 28/4/21 |
| 1.2.3.15 | [Frontend] Create Application information for the welcome page UI | Vi | Done | 2 | 29/4/21 | 30/4/21 |
| 1.2.3.16 | [Frontend] UI for Show age after the process | Vi | Done | 1 | 1/5/21 | 1/5/21 |
| 1.2.3.17 | [Frontend] UI for Show gender after processing | Kieu | Done | 2 | 24/4/21 | 26/4/21 |
| 1.2.3.18 | [Frontend] UI for Show similarity faces using the slideshow | Kieu | Done | 1 | 27/4/21 | 27/4/21 |
| 1.2.3.19 | [Frontend] UI for Show the percentage similarity | Kieu | Done | 2 | 28/4/21 | 29/4/21 |
| 1.2.3.20 | [Frontend] UI for Point out the similarity traits | Kieu | Done | 2 | 30/4/21 | 1/5/21 |
| 1.2.3.21 | Testing | Kieu, Vi | Done | 3 | 8/5/21 | 11/5/21 |
| 1.2.3.22 | Fix bug | Tran, Han, Trang | Done | 3 | 10/5/21 | 12/5/21 |
| 1.2.3.23 | Re-testing | Kieu, Vi | Done | 1 | 13/5/21 | 13/5/21 |
| 1.2.3.24 | Release Sprint 3 | All members | Done | 1 | 14/5/21 | 14/5/21 |
| **1.2.4** | **Sprint 4** | **All members** |  | **14** | **15/5/21** | **31/5/21** |
| 1.2.4.1 | Sprint planning meeting | All member | Done | 1 | 15/5/21 | 15/5/21 |
| 1.2.4.2 | Create Sprint Backlog for Sprint 4 | Tran, Trang, Kieu | Done | 1 | 15/5/21 | 15/5/21 |
| 1.2.4.3 | Create Test Plan document for Sprint 4 | Han, Vi | Done | 1 | 15/5/21 | 15/5/21 |
| 1.2.4.4 | Design UI | Tran, Trang | Done | 1 | 17/5/21 | 17/5/21 |
| 1.2.4.5 | Design Test case | Han, Kieu, Vi | Done | 2 | 17/5/21 | 18/5/21 |
| 1.2.4.6 | [Server/Backend] Login | Tran | Done | 4 | 18/5/21 | 21/5/21 |
| 1.2.4.7 | [Server/Backend] Logout | Tran | Done | 1 | 22/5/21 | 22/5/21 |
| 1.2.4.8 | [Server/Backend] Add criminal record | Han | Done | 6 | 19/5/21 | 25/5/21 |
| 1.2.4.9 | [Server/Backend] Update criminal | Trang | Done | 3 | 18/5/21 | 20/5/21 |
| 1.2.4.10 | [Server/Backend] Delete criminal record | Tran | Done | 3 | 23/5/21 | 25/5/21 |
| 1.2.4.11 | [Server/Backend] Find point out the difference in the face | Trang | Unfinished | 4 | 21/5/21 | 25/5/21 |
| 1.2.4.12 | [Frontend] UI for Login | Kieu | Done | 2 | 19/5/21 | 20/5/21 |
| 1.2.4.13 | [Frontend] UI for Logout | Kieu | Done | 1 | 21/5/21 | 21/5/21 |
| 1.2.4.14 | [Frontend] UI for Add criminal record | Vi | Done | 3 | 19/5/21 | 21/5/21 |
| 1.2.4.15 | [Frontend] UI for Update criminal record | Vi | Done | 2 | 22/5/21 | 24/5/21 |
| 1.2.4.16 | [Frontend] UI for Delete criminal record | Kieu | Done | 2 | 22/5/21 | 24/5/21 |
| 1.2.4.17 | Testing | Kieu, Vi | Done | 3 | 25/5/21 | 27/5/21 |
| 1.2.4.18 | Fix bug | Tran, Han, Trang | Done | 3 | 26/5/21 | 28/5/21 |
| 1.2.4.19 | Re-testing | Kieu, Vi | Done | 1 | 29/5/21 | 29/5/21 |
| 1.2.4.20 | Release Sprint 4 | All members | Done | 1 | 31/5/21 | 31/5/21 |
| **1.3** | **Project ‘s meeting** | **All members** | **Done** | **1** | **1/6/21** | **1/6/21** |
| **1.4** | **Final Release** | **All members** | **Done** | **1** | **2/6/21** | **2/6/21** |

* 1. **Resource**

|  |  |  |
| --- | --- | --- |
| **Full name** | **Role** | **Salary Rate (USD/hour)** |
| Tran, Tran Thi Thuy | Scrum Master | 2 |
| Trang, Tran Thi Huyen | Team member | 2 |
| Han, Hoang Gia Bao | Team member | 2 |
| Kieu, Dinh Thi Van | Team member | 2 |
| Vi, Pham Ha | Team member | 2 |

* 1. **Infrastructure**

|  |  |  |  |
| --- | --- | --- | --- |
| **Work/Product** | **Purpose** | **Expected Availability by** | **Note** |
| **Development Environment** | | | |
| Firebase Server | Cloud server | Initiation stage |  |
| Window 10 | Operating System | Initiation stage |  |
| Firebase | DBMS | Construction stage |  |
| JavaScript | Development language for Web interface and Backend functions | Construction stage |  |
| **Other Tools** | | | |
| Github | Source version control | Definition stage |  |
| Timesheet | Defect logging and tracking | Definition stage |  |
| Timesheet | Effort logging | Initiation stage |  |
| Clickup | Project management tool | Initiation stage |  |
| Trello | Task tracking | Initiation stage |  |

* 1. **Training Plan**

|  |  |  |  |
| --- | --- | --- | --- |
| **Training Area** | **Participants** | **When, Duration** | **Waiver Criteria** |
| **Technical** | | | |
| JavaScript Language | All members | 2 hrs. | Mandatory |
| **Process** | | | |
| Quality system | All members | 1 hr. | If already trained |
| Configuration management | All members | 1 hr. | If already trained |
| Group review | All members | 1 day | Mandatory |
| Defect prevention | All members | 1 hr. | Mandatory |
| RUP methodology | All members | 1 hr. | Mandatory |

* 1. **Finance**

|  |  |  |
| --- | --- | --- |
| **Category** | **Detailed** | **Description** |
| Start date | March 1st, 2021 | The start date of the project. |
| End date | Jun 2nd, 2021 | The end date of project. |
| Duration (1) | 81 | Total day of project. |
| Working time (2) | 4 hours/day | In one day and for one member. |
| Total effort (3) = (1) \* (2) \* 5 | 1620 hrs. | For five team members and the entire project. |
| Labor cost (4) = (3) \* 2 | 3240 | For five team members and the entire project. ($2.0/ member) |

1. **Project Organization**
   1. **Organization Structure**

|  |  |  |  |
| --- | --- | --- | --- |
| **Position** | **Name** | **Email** | **Mobile** |
| Mentor | Trang, Nguyen Thi Bao M.Sc. | nguyenthibaotrang@gmail.com | (+84) 91 577 4711 |
| Scrum Master | Tran, Tran Thi Thuy | tranthuy1944@gmail.com | (+84) 90 505 7851 |
| Scrum Member | Han, Hoang Gia Bao | baohanhoang2606@gmail.com | (+84) 89 985 2540 |
| Trang, Tran Thi Huyen | tranthihuyentrang7251@gmail.com | (+84) 37 495 7251 |
| Kieu, Dinh Thi Van | dinhvankieu199@gmail.com | (+84) 93 563 8848 |
| Vi, Pham Ha | phamhavi255@gmail.com | (+84) 32 657 7627 |

* 2. **Project Plan**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Role** | **Responsibility** | **Qualification** | **Full name** | **Type** | **Effort** | **Start date** | **End date** |
| Product owner | -  Approve Project plan  -  Review project status  -  Resolve escalated issues  -  Project financial plan | 10+ years of experience | Trang, Nguyen Thi Bao | Onsite | 30% | 03/01/2021 | 02/06/2021 |
| Scrum Master | Have overall responsibility of the project  -  Project planning and scheduling  -  Task assignment and tracking  -  Reporting  -  Ensure delivery as per contract  -  Interface with other departments as per need  -  Customer interaction  -   Ensure open issues/customer complaints are closed properly |  | Tran, Tran Thi Thuy | Onsite | 100% | 03/01/2021 | 02/06/2021 |
| Designer | Architectural design |  | * Tran, Tran Thi Thuy * Han, Hoang Gia Bao * Trang, Tran Thi Huyen * Kieu, Dinh Thi Van * Vi, Pham Ha | Onsite | 95% | 03/01/2021 | 02/06/2021 |
| Coder | * Translation of the UI/UX design wireframes to actual code that will produce visual elements of the application * Work with the UI/UX designer * Creating and maintaining technology at the back end of a website (the server, database and application) |  | * Tran, Tran Thi Thuy * Han, Hoang Gia Bao * Trang, Tran Thi Huyen * Kieu, Dinh Thi Van * Vi, Pham Ha | Offshore | 100% | 03/01/2021 | 02/06/2021 |
| Tester | * Technology-facing tests that support team critique the product and business-facing tests that help the team critiques the product. |  | * Tran, Tran Thi Thuy * Han, Hoang Gia Bao * Trang, Tran Thi Huyen * Kieu, Dinh Thi Van * Vi, Pham Ha | Offshore | 90% | 03/01/2021 | 02/06/2021 |

1. **Communication & Reporting**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Communication Type** | **Method / Tool** | **When** | **Information** | **Participants / Responsible** |
| Project Task Tracking | | | | |
| Task scheduling | Trello, ClickUp | At the beginning of every stage, and weekly  Refinement and rescheduling as necessary | Planning tasks for each sprint | Scrum Master |
| Task assignment | Trello, ClickUp | Weekly | Assign tasks to each member | Scrum Master |
| Project Meeting | | | | |
| Kick-off Meeting | Face to face | Initiation stage | Project introduction; Project plan review; Risk identification; Obtainment of commitment of relevant stakeholders | Scrum Master, Team Members |
| Project Progress Review Meetings | Face to face, Zoom | Weekly event on | Communicate project status  Communicate and resolve any open issue, risks, and changes  Discuss any suggested improvement | Scrum Master, Team Members |
| Milestone Meetings | Face to face, Zoom | Before milestones | Project objective review, evaluate project performance (quality, schedule, effort), Causal analysis, update project plan for next stage | Scrum Master, Team Members |

2. **Security Aspects**

* Viruses
  + Restrict clicking on unknown links as well as installing crack software
* Preventing viruses
  + Using the antivirus software such as Bitdefender Antivirus Plus, McAfee Antivirus Plus.
  + Turn on Window Defender and Firewall.
* Internet Security
  + Using HTTPs instead of HTTP

1. **References**

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