GLocate

Version 1.1

Revision History

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| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 07/11/2019 | 1.0 | First version | Hồ Minh Trí |
| 11/11/2019 | 1.1 | Added organizational structure, updated project purpose and project schedule | Hồ Minh Trí |
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# Introduction

## Purpose

The purpose of the *Software Development Plan* is to gather all information necessary to control the project. It describes the approach to the development of the software and is the top-level plan generated and used by managers to direct the development effort.

The following people use the *Software Development Plan*:

* The **project manager** uses it to plan the project schedule and resource needs, and to track progress against the schedule.
* **Project team members** use it to understand what they need to do, when they need to do it, and what other activities they are dependent upon.

## Scope

This *Software Development Plan* describes the overall plan to be used by the GLocate project, including deployment of the product. The details of the individual iterations will be described in the Iteration Plans.  
The plans as outlined in this document are based upon the product requirements as defined in the *Vision Document*.

## Overview

This *Software Development Plan* contains the following information:

Project Overview — provides a description of the project's purpose, scope, and objectives.  It also defines the deliverables that the project is expected to deliver.

Project Organization — describes the organizational structure of the project team.

Management Process — explains the estimated cost and schedule, defines the major phases and milestones for the project, and describes how the project will be monitored.

# Project Overview

## Project Purpose, Scope, and Objectives

This project will implement an application that help friends hanging out to easily locate each other. Before, when friends arranged to meet at a location, there was always a possibility of misunderstanding and some friends might arrive at a different place. Furthermore, when a friend was late, the others had to wait and had no way to really know when that friend would arrive except by constantly calling or texting. And if there was a decision to switch the location after everyone had started moving, it would have been very difficult for everyone to coordinate effectively. It was very likely that someone would have got lost or arrived late.

The proposed application offers a simple solution to this situation. Instead of using inconvenient and ineffective methods to coordinate locations such as text messages or phone calls, each group of friends hanging out only need to create and join a virtual group in the app. Everyone in the group will then get real time locations of each other, displayed on a map. A flag can be placed on the map to designate the meeting point and if there is a switch of location, simply move the flag and everyone in the group will be notified. Using the app, everyone knows exactly where they need to go and where everybody else is. There is no need to worry about someone getting lost, arriving at the wrong location, or taking too much time and making everybody else wait.

## Assumptions and Constraints

Assumptions:

* A user of the app needs to have a mobile device.
* The mobile device running the app needs to have a modern version of either iOS or Android.
* The mobile device running the app needs to be connected to the Internet, likely in a region with strong 3G signal.
* The mobile device running the app needs to be connected to GPS, likely in an outdoor region.

Constraints:

* The app will be developed by a team of five members.
* The app will be finished by the end of the first semester of the 2019-2020 school year.

## Project Deliverables

The following deliverables will be produced during the project:

* Software Development Plan
* Vision Document
* Use-Case Specification

# Project Organization

## Organizational Structure

|  |  |
| --- | --- |
| Person | Role |
| Hồ Minh Trí | Project Manager  Software Architect  Business-Process Analyst  Tester  Requirements Specifier  Database Designer  Implementer |
| Nguyễn Minh Trí | Software Architect  Business-Process Analyst  Designer  Tester  Implementer |
| Đỗ Trí Nhân | Software Architect  Business-Process Analyst  Designer  Tester  Implementer |
| Nguyễn Hoàng Tân | Software Architect  Designer  Tester  Implementer |
| Nguyễn Thanh Tùng | Software Architect  Business-Process Analyst  Designer  Tester  Implementer |

## Roles and Responsibilities

|  |  |
| --- | --- |
| Role | Responsibility |
| Project Manager | The project manager role allocates resources, shapes priorities, coordinates interactions with customers and users, and generally keeps the project team focused on the right goal. The project manager also establishes a set of practices that ensure the integrity and quality of project artifacts. |
| Software Architect | The software architect role leads and coordinates technical activities and artifacts throughout the project. The software architect establishes the overall structure for each architectural view: the decomposition of the view, the grouping of elements, and the interfaces between these major groupings. Therefore, in contrast to the other roles, the software architect's view is one of breadth as opposed to one of depth. |
| Business-Process Analyst | The business-process analyst leads and coordinates business use-case modeling by outlining and delimiting the organization being modeled; for example, establishing what business actors and business use cases exist and how they interact. |
| Tester | The Tester is responsible for executing testing, including test set-up and execution, evaluation of test execution and recovery from errors, and assessing the results of test and logging identified defects |
| Requirements Specifier | The requirements specifier role details the specification of a part of the system's functionality by describing the Requirements aspect of one or several use cases and other supporting software requirements. The requirements specifier may also be responsible for a use-case package and maintains the integrity of that package. |
| Database Designer | The database designer role defines the tables, indexes, views, constraints, triggers, stored procedures, tablespaces or storage parameters, and other database-specific constructs needed to store, retrieve, and delete persistent objects. |
| Implementer | The implementer role is responsible for developing and testing components, in accordance with the project’s adopted standards, for integration into larger subsystems. When test components, such as drivers or stubs, must be created to support testing, the implementer is also responsible for developing and testing the test components and corresponding subsystems. |
| Designer | The designer role defines the responsibilities, operations, attributes, and relationships of one or several classes, and determines how they will be adjusted to the implementation environment. In addition, the designer role may have responsibility for one or more design packages, or design subsystems, including any classes owned by the packages or subsystems. |

# Management Process

## Project Estimates

## Project Plan

### Phase Plan

The project will have three phases: Inception, Elaboration, and Construction. The project will also consist of four iterations.

### Releases

One build will be produced for testing at the end of the third sprint.

### Project schedule

|  |  |  |  |
| --- | --- | --- | --- |
| Task | Start | End | Member |
| SPRINT 1 | 19/10/2019 | 28/10/2019 |  |
| Write project proposal |  |  | Hồ Minh Trí |
| Display map with markers |  |  | Nguyễn Minh Trí |
| 3D visualization demo |  |  | Nguyễn Hoàng Tân |
| SPRINT 2 | 29/10/2019 | 11/11/2019 |  |
| Write software development plan and vision document |  |  | Hồ Minh Trí |
| Store user locations on Firebase and retrieve to device |  |  | Hồ Minh Trí |
| Login interface |  |  | Đỗ Trí Nhân |
| Group creating and joining interface |  |  | Đỗ Trí Nhân |
| Acquire GPS location |  |  | Nguyễn Thanh Tùng |
| Display user locations on map |  |  | Nguyễn Minh Trí |
| User avatars interface |  |  | Nguyễn Minh Trí |
| SPRINT 3 | 12/11/2019 | 25/11/2019 |  |
| Write use-case specification |  |  | Hồ Minh Trí |
| Users and groups database |  |  | Hồ Minh Trí |
| Meeting point functionality |  |  | Nguyễn Thanh Tùng |
| Group member focus functionality |  |  | Nguyễn Minh Trí |
| Arrows and distances functionality |  |  | Nguyễn Hoàng Tân |
| App design update |  |  | Đỗ Trí Nhân |
| SPRINT 4 | 26/11/2019 | 09/12/2019 |  |

## Project Monitoring and Control

### Requirements Management

The requirements for this system are captured in the Vision document. Requested changes to requirements are captured in Change Requests and are approved as part of the Configuration Management process.

### Reporting and Measurement

Updated cost and schedule estimates, and metrics summary reports, will be generated at the end of each iteration.

The Minimal Set of Metrics, as described in the RUP [Guidelines: Metrics](..\..\..\process\modguide\md_metri.htm), will be gathered on a weekly basis. These include:

Earned value for completed tasks. This is used to re-estimate the schedule and budget for the remainder of the project, and/or to identify need for scope changes.

Total defects open and closed – shown as a trend graph. This is used to help estimate the effort remaining to correct defects.

Acceptance test cases passing – shown as a trend graph. This is used to demonstrate progress to stakeholders.

In addition, overall costs will be monitored against the project budget.

### Risk Management

Risks will be identified in Inception Phase using the steps identified in the RUP for Small Projects activity “Identify and Assess Risks”. Project risk is evaluated at least once per iteration and documented in this table. The risks of the greatest magnitude are listed first in the table.

|  |  |  |
| --- | --- | --- |
| **Risk Ranking (High, Medium, Low)** | **Risk Description and Impact** | **Mitigation Strategy and/or Contingency Plan** |
| High | Product is not finished by final deadline | Try to meet every PA deadline to have steady progress. Focus on the most important features first to have an MVP. |
| High | Final product is not satisfactory | Regularly check with the TA to see if the current product is heading in the right direction. |
| High | Team members too busy with other projects, not spending enough time on this project | Set deadlines for each member and regularly check progress. |
| Medium | GPS not accurate enough for customer’s need | Inform the customer that the app is not meant to be used at close distance. Look into GPS alternatives. |
| Medium | Customer wants to use app indoor | Inform the customer that the app is not meant to be used indoor. Look into GPS alternatives indoor, such as beacons. |
| Medium | Customer wants to use app on Windows Phone | Inform the customer that the app currently does not support these platforms. Look into moving from React Native to React. |
| Medium | The app is not responsive enough to be effectively used | Provide an ideal maximum group size that is guaranteed to work well. Customers cannot complain about responsiveness if using larger group size. |
| Medium | Team members take too long to learn React Native | Team members help each other. |

### Configuration Management

Appropriate tools will be selected which provide a database of Change Requests and a controlled versioned repository of project artifacts.

All source code, test scripts, and data files are included in baselines. Documentation related to the source code is also included in the baseline, such as design documentation. All customer deliverable artifacts are included in the final baseline of the iteration, including executables.

Link GitHub: <https://github.com/JG54264/TNT>