Project Management Plan

for

Auriel App

Version 2.0

Prepared by Team Auriel
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Authors:

David Kelly,
MS in Software Engineering,
WSU ‘23

Pallavi Arivukkarasu,
MS in Computer Science,
WSU ‘22

Akshaya Venkatesh,
MS in Computer Science,
WSU ‘23

Yinan Guo,
MS in Computer Science,
WSU ‘21

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Revision History

Name	Date	Reason for Changes	Version
		initial draft	1.0 draft 1
David Kelly	Sept 18	Added Overview Section	1.1
Akshaya Venkatesh	Sept 18	Added Technical Process Plan	1.2
David Kelly	Sept 19	Section 1.1 to add next action, format	1.3
David Kelly	Sept 29	Added WRS to Phase 1, change 1.9 to 4.1, format table of contents	1.4
Akshaya Venkatesh	Oct 8	Minor Corrections	1.5
Akshaya Venkatesh	Nov 17	Removed some topics from Technical Process	1.6
Akshaya Venkatesh	Dec 10	Final Edits and changes	2.0

Overview

This project plan will describe the details of building a web application (app) that will guide visually impaired people in a building. It is organized by stating the purpose, objectives, and success criteria. The deliverables are listed along with assumptions, dependencies, and constraints.
References will point to documents used to complete this project. Definitions and acronyms are listed to clarify content.
The project organization will describe the process model, organization structure, and roles and responsibilities for completing this project.
The managerial process plans will be listed and then the technical process plans will give details on how to build the app.

1.1. Project Purpose, Objectives, and Success Criteria

The purpose of the app is to safely guide a visually impaired person through a building. The building may consist of an instructor's office, labs, classrooms, restrooms, etc. The app must always know the current location and destination they are traveling to. The app must also know when to turn, start, and when to stop at their destination.
The routes and preferences will be stored in the app and also in a database to allow for smooth guidance through the building. Also, the next action would be calculated based on the user's schedule or pattern but allowing the user to override the app as needed.
The user will need to use a mobile device that is supported by the app. The initial installation and setup will be done by a caretaker that will assist the user.
The app will be able to direct the user to their classrooms and restrooms in a safe manner. If obstacles are in the way, the app will use voice commands and vibrations to help the user avoid the object.
A successful journey would include getting the user to their desired location without falling or bumping into objects that could harm them.
If the app detects a fall or a drop, a message will be first sent to the caretaker then the administrator of the building. If no response is detected, 911 will be called.

1.2. Project Activities and Deliverables

The team conducted weekly meetings to plan the completion of all the required documents, each member was assigned a definite task to complete during the course of the week, and the same was reviewed in the following meeting. Other important updates like the progress of development, group discussions for understanding and reviewing of KAOS models, IDEF0 diagrams were done during these meetings.

Deliverable	Delivery Date	Delivery Method	Comments
Project phase I: Preliminary Plan	Sept 19	Online	
Project phase I: Final Plan	Oct 17	Online	Uses WRS Template

Presentation Phase I	Oct 17	Zoom	Includes AS-IS, TO-BE, creeping rate, function pts
WRS Phase I	Oct 17	Online	
Meeting Records	Dec 10	Online	
Prototype	Dec 10	Online	
User Manual	Dec 10	Online	
WRS Final	Dec 12	Online	Uses WRS Template
Vision Document	Dec 12	Online	
Project phase II: Final Plan	Dec 12	Online	Uses WRS Template
Process Specification Document	Dec 12	Online	
Project Phase II: Final Presentation	Dec 12	Online	Includes AS-IS, TO-BE, expected vs. actual creeping rate, function pts, demo of the application

1.3. Assumptions, Dependencies, and Constraints

AS-1. The user has a device such as an Android, Apple, or a Windows phone or tablet.
AS-2. The user's device has at least 1 gig of available storage or memory to install the app.
AS-3. The device has cell coverage to connect with external systems such as a website or cloud databases.
AS-4. The device can connect to local beacons via Bluetooth or other local network connections.
DE-1. The app has been downloaded and configured by a caretaker or administrator.

1.4. References

The project specification:
https://wsu.instructure.com/courses/1489774/pages/team-project-phase-i-documents?module_item_id=13434623

Requirements review checklist:
https://wsu.instructure.com/courses/1489774/files/78297059?wrap=1

World assumption master list:
https://wsu.instructure.com/courses/1489774/files/78297064?wrap=1

1.5. Definitions and Acronyms

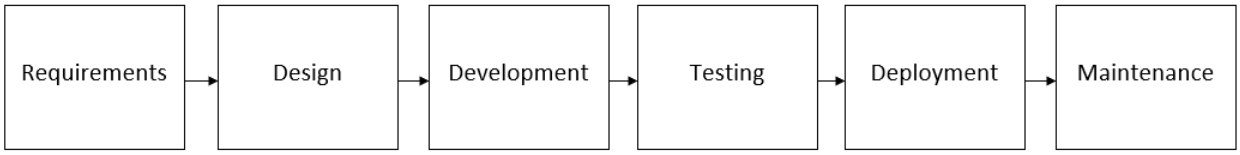
1. *App - Application. A web application is used to process business functions*
2. *QA - Quality Assurance. Activities that produce quality*
3. *OS - Operating System. A system that runs applications on a device*
4. *HTML - HyperText Markup Language. The language used to build websites*
5. *CSS - Cascading Style Sheets. The language to create styles on a website*
6. *SASS - Syntactically Awesome Style Sheets. The language to create styles on a website*

7. *IDE - Integrated Development Environment. A GUI environment to build applications*
8. *BT - Bluetooth. A local network technology*

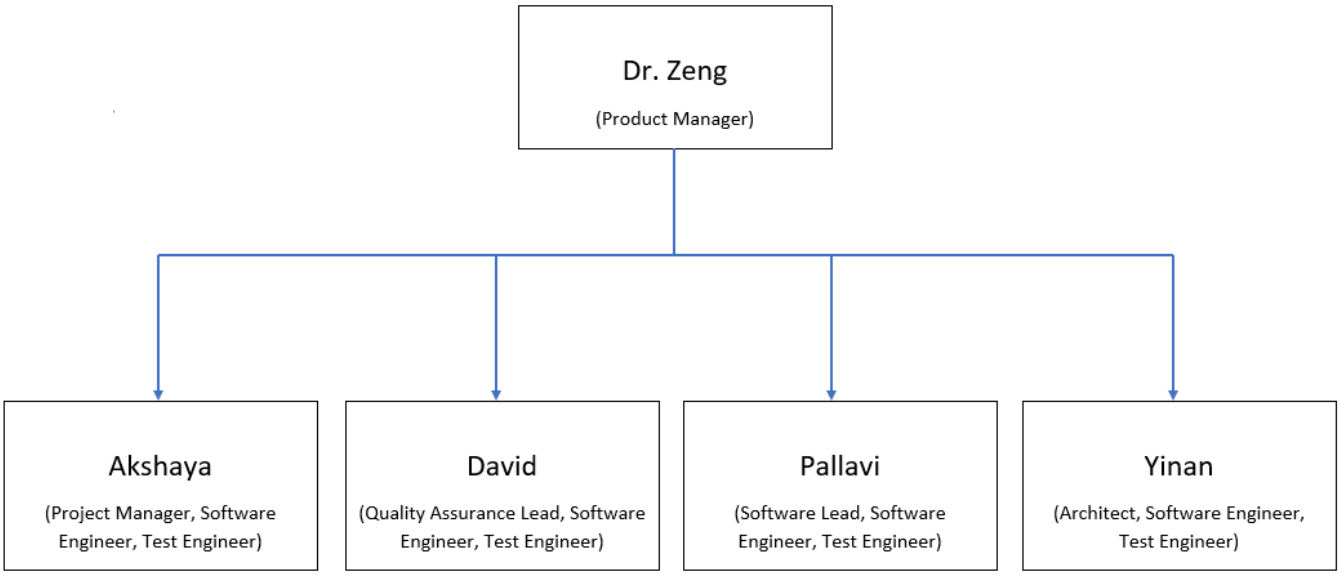
Project Organization

This section describes interfaces to entities outside of the project, identifies the internal project structure, and defines roles and responsibilities for the project. More information can be found in the process specification document.

1.6. Process Model



1.7. Organizational Structure



1.8. Roles and Responsibilities

ROLE	RESPONSIBILITY	TEAM MEMBER
PROJECT MANAGER	Responsible for planning, organizing, and directing the completion of the specific project.	Akshaya Venkatesh
PRODUCT MANAGER	Responsible for identifying the customer need and the larger business objectives that a product or feature will fulfill.	Dr. Bolong Zeng
QUALITY ASSURANCE LEAD	To oversee the testing of a product or service to ensure adherence to industry and the organization's standards.	David Kelly
SOFTWARE LEAD	Lead software development or software engineering teams and troubleshoot technical issues that involve software development, engineering tasks and product releases.	Pallavi Arivukkarasu
ARCHITECT	Makes high-level design choices and frame technical standards that include tools, software coding standards, or platforms to be used.	Yinan Guo
SOFTWARE ENGINEER	Analyzing and modifying existing software as well as designing, constructing and testing end-user applications that meet user needs.	Akshaya, David, Pallavi, Yinan
TEST ENGINEER	To thoroughly check materials, procedures and mechanical or electrical systems to ensure that customers get high-quality, functional products.	Akshaya, David, Pallavi, Yinan

Managerial Process Plans

3.1 Management objectives and priorities

Basic management principles: each member is an active speaker, a responsible partner, and a decision-maker. Decisions should be made based on full discussion, and once they are made, they must be implemented in a timely and effective manner.

Goals:

- Complete the basic functions of the project on time and in quantity. Delivering products and documentation on time is the team's highest goal.
- Follow standardized project operating standards. The document is rigorous and complete, and the code is fully annotated to facilitate subsequent maintenance, which is the second goal.
- The product runs stably, and the interface is friendly and easy to operate by the users. Try to look at the problem from the user's point of view and propose solutions to the problem.
- Focus on team building, reasonable division of labor among members. The team members work well together, and the atmosphere is harmonious. Make positive contributions at the weekly seminar. Team members actively collaborate during the development process.
- There are innovations and bright spots in project design and development.

3.1. Assumptions, dependencies, and constraints

Assumptions:

- The default location of this software is in a building or several buildings connected to each other.
- Each building is provided with Bluetooth-based functional beacons that indicate the exact location of the user and/or obstacles, stairs.
- All the teammates have the necessary skills to complete the project.
- All equipment is in good condition.
- The team will have meetings regularly like once a week.
- The user prefers a route that takes them through an elevator over stairs
- The step distance for each user is constant and it can be calibrated through the app
- If the app doesn’t find beacons or the beacons in a given building fail, the app reports “Unsupported Building Error” to the user.

Constraints:

- The project needs to be submitted within three months.
- The team only has limited funds to complete the project.
- The teammates are not committed full-time to the project, which means they cannot complete the project with single-heart devotion.
- We have to work with a small amount of literature.

3.3. Risk management

Risk management shall be handled as per table 1.

Risk categories	*Risks*	*Avoidance methods*
Schedule risks	The project could not be completed on schedule due to time constraints.	The team should fully consider various potential factors, appropriate leeway. Task decomposition should be detailed, easy to assess. During execution, important items that the project is on the schedule should be highlighted. In any consideration, the priority should be to maintain progress. At the same time, reasonable use of rush period and fast follow up and other methods, make full use of resources. If an extension is necessary, the team leader should communicate with the professor and apply for an extension.
	Lacking test time for the system	With the progress of the project, we should continuously monitor the schedule to make sure each link will have enough time to accomplish.
Technical risk	There are problems in the development of software structure systems, which make the completed software products fail to	Choose genuine software for development.

	achieve the predetermined goals of the project.	
	Lack of in-depth grasp of software development will lead to poor product performance and quality.	Each group member should make an appropriate study plan in advance. Each team member should learn the development tools quickly and master the key points as soon as possible. Ease the software design so that the project can be successfully completed.
Quality risk	The quality does not meet the requirements of users	Communicate your work to users regularly. Adopt a development process that meets the requirements. Conscientiously organize the inspection and review of the products. Plan and organize rigorous independent testing, etc.
Tools risk	In the process of software project development and implementation, the necessary management tools, development tools, testing tools are not in place in time	Identify the source or possible alternative tools at the start of the project and track the tools in place before they need to be used. Before the project development, the infrastructure of the system should be designed and built, and the performance test should be carried out to ensure that the architecture meets the performance indicators before the follow-up work.
Human Resource risk	Team members were unable to participate in the design due to accidents	Discuss solutions with other group members beforehand

Table 1 Project risks and their avoidance methods

3.4

Technical Process Plans

4.1. Methods, tools, and techniques

The methods, tools are techniques used in this project are as follows:

4.1.1. Application Design:

The application shall be designed using Adobe XD. All design files shall be shared and as XD files (with the .xd extension) and in image form using the PNG format. The images of the design files shall be documented.

4.1.2. Development Environment

- The application shall be developed as a Responsive Web Application with a mobile-first approach that is supportive to mobile size devices.
  i. Tech stack used for development shall be: HTML, CSS (SASS), JavaScript (JQuery)
  ii. Tech stack used for testing shall be: Jasmine (Unit Testing framework)
- The OS for development may be a standard Windows 10/11 or Mac OS's Big Sur/Catalina/Mojave
- The OS for testing may be Android OS version **<to do> and iOS 13.x and 14.x.**

4.1.3. Version Control Plan

The version control system used is managed over GitLab. The repository can be found by following the link below:

https://gitlab.eecs.wsu.edu/cpts484-fall21/team-akshaya

4.1.4. Development Process Plan

The application shall be developed using the Angular Framework satisfying the As-Is To-Be Scenarios presented in the plan for Phase I.

4.2 Software documentation

The following documents shall assist the entire team throughout the life cycle of the project.

Document	Template or Standard	Created By	Reviewed By	Target Date	Distribution
WRS Document		All members	All members	Oct 17	
RE Process Document		David	All members	Dec 12	