Miami Lib Finder

Planning Document

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| Primary Author: | Yixin Li |
| Contributors: | Yi Yang, Yangkai Zhang, Wenkai Cao |

**ACCEPTANCE:**

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| --- | --- | --- |
| Sponsor/Client: | Mattew Benzing | [09/20/2019] |
| Team Representative: | Yixin Li | [09/20/2019] |
| others | Yi Yang, Yangkai Zhang, Wenkai Cao | [09/20/2019] |

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## Charter [Yangkai Zhang]

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| **PROJECT OBJECTIVE** | |
| Problem Statement or Business Need | Users have trouble in finding the specific location in the library. |
| Purpose of Project: | Guiding the user to the target location. |
| Business Case: | User wants to find a book, our app guide him to the location. |
| Goals/Metrics: | Generating the optimal route from user to target. |

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| **PROJECT STAKEHOLDERS** | |
| Project Sponsor: | [Benzing Mattew] - librarian,benzinmm@miamioh.edu |
| Sponsor Delegate | [optional but a good idea]  name, department/company name, contact information |
| Project Team | [Yixin Li]-[liy111@miamioh.edu](mailto:liy111@miamioh.edu)  [Wenkai Cao][-caow2@miamioh.edu](mailto:-caow2@miamioh.edu)  [Yangkai Zhang]- [zhangy68@miamioh.edu](mailto:zhangy68@miamioh.edu)  [Yi Yang][-yangy37@miamioh.edu](mailto:-yangy37@miamioh.edu) |
| other stakeholders? | [Vaskar Raychoudhury][-raychov@miamioh.edu](mailto:-raychov@miamioh.edu) Vaskar Raychoudhury is the instructor of M3 mapper, we need technology and data of the group. |

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| **PROJECT TIMELINE FALL 2019** | |
| Expected Start Date: | Sep 30,2019 |
| [MILESTONE 1] | Have a reactive interface without navigating function |
| [MILESTONE 2] | Basic navigating algorithm design are done |
| Expected Completion Date:Dec 6 ,2019 | Semester Presentation:  Interface prototype, navigation algorithm are included,all members would attend. |

## **Problem Domain [author]**

*Help the reader (me) understand the business, technology or subject matter relevant to the project and the problem. Put the problem statement identified on the first page into context. Include any ethical implications, constraints, and issues particular to this domain.*

*Perhaps provide sections for background, current state of the domain, current issues with the domain within the industry and in society as a whole.*

In Miami University, those who go to the library have trouble in finding the book, restroom and so on. The current solution is to ask the front desk for help. However, the librarians are limited and may be busy.Our application provide a navigation service to help user locate the book and generate optimal route. With using our application, the users can find the target book or location by themselves.

## Scope of Work [Yi Yang]

*Provide enough project details to ensure the team has a comprehensive understanding of the solution or product deliverable. This information should provide the boundaries for the execution of the project and the final solution.*

**In-Scope**

* Navigation Algorithm
* Data Analyze WHAT IS THIS?
* HTTP Request THIS IS A DESIGN ELEMENT
* Product Decomposition Diagram

**Outside of Scope**

* Identify Personal Position
* Frequency Heat Map
* Data Collection

**Expected Deliverables:**

**Required Course Deliverables:**

1. Project Plan [448, 449]
2. RACI (Risks, Assumptions, Constraints, Issues) Log [448, 449]
3. Developer’s Guide, including detail design documentation [448, 449]
4. Status Reports [448, 449]
5. Meeting Agendas and Minutes [448, 449]
6. Source Code [449]
7. Installation Guide [449]
8. User Guide[449]

## Roles and Responsibilities [Yi Yang]

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| **[name]**  **Sponsor/Client**  [Email address] | Mattew Benzing  Provide accurate and consistent set of requirements.  Be available for meetings and issue resolution.  benzinmm@miamioh.edu |
| **[name] Team Lead**  [Email address] | Yixin Li  Responsible for supervision all members doing work.  liy111@miamioh.edu |
| **[name]**  **Schedule Lead**  [Email address] | Yangkai Zhang  Responsible for the overall schedule and its accuracy.  zhangy68@miamioh.edu |
| **[name]**  **Quality Checker**  [Email address] | Wenkai Cao  Responsible for the code is deliverable  caow2@miamioh.edu |
| **[name]**  **Faculty Mentor**  [Email address] | Yi Yang  Responsible for contact faculty for all the issues.  yangy37@miamioh.edu |

**Shared Team Responsibilities:**

The following activities and related artifacts will be shared by the team.

Must Shared by Team:

Status Reports : Report for each Kick-off meeting and client meeting.

Meeting Minutes : Note for every kick-off meeting and client meeting.

Assignment submissions : Request for each assignment.

Personal Status Reports : Personal Report for each Kick-off meeting and client meeting.

Related artifacts : The article that each group member should study for.

RACI Log : Depending on the project, the Risk Assumptions Constraints and Issues Log may be used intermittently.

Self-Task Plan : Identifies the deliverables for each iteration.

## Communication Plan [Wenkai Cao]

*Document what communication can be expected at what intervals and on what medium. Talk to your instructor, faculty mentor and sponsor to identify specifics.*

*For effective and regular communication with stakeholders, you may elect to assign a point of contact for all stakeholders or include it in a specific project role, defined above. That team member will be responsible for addressing any questions with the team and responding. Broadcasting discussions in email (that often turn into a chat room) can be difficult to follow and clutter email.*

**Meetings**:

* Status Meeting with Pro. Stahr : Monday 2:30 pm to 3:00 pm for every two weeks
* Meeting with Dr. Vaskar: Thursday 12:00 pm to 1:00 pm every week
* Meeting with Client Benzing: TBD. The group and client will have meetings when needed. For example, if the code plan and client requirements have conflict, group members will send email to client and ask for a meeting to discuss.

**Communication Types**:

* Email: Team leader: Yixin Li liy111@miamioh.edu

Schedule leader: Yangkai Zhang zhangy68@miamioh.edu

**Service Levels**: [optional]

Also discuss SLAs (service level agreements). Essentially, you are trying to agree with the stakeholders how to get their attention in critical situations. It’s an escalation procedure. Stakeholders may also define service levels for the team’s responsiveness.

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| ITEM | SLA |
| Email with subject starting “IMPORTANT” | ASAP |
| Email with subject starting “DECISION REQUESTED” | 24 HRS |
| Email with subject starting “MTG REQUEST” | 24 HRS |
| Email with subject starting “FYI - “ | no response necessary |

## Development Methodology [Wenkai Cao]

*Select and describe the development methodology the team will use. Select a generally accepted methodology, such as Agile, Rapid Development Methodology and Feature Driven Development, and describe how the team will employ that strategy. Here are some options -* [*Methodologies*](http://www.itinfo.am/eng/software-development-methodologies/#chapter2)

**Methodology:**

We will use Agile development for this project. Because agile development is based on user’s requirements. we will use iteration (time period) and increment way to develop software with the goal of quickly covering and responding to the changing of user’s requirements. In addition, we will divide the large projects into small projects to assign work to group members. And we will encourage users to participate in the entire process of project development, through user’s feedback, the project is more in line with the changing needs of users.

**Programming Style Guidelines:**

There are four main rules of program style, keep it simple, strive for clarity, be consistent and follow other well-established standards. In this program, out main language is C#. The reference we use to guide the style of program is <https://docs.microsoft.com/en-us/dotnet/csharp/programming-guide/inside-a-program/coding-conventions>. We will follow the official advice of program style of C# to make all codes look good.

*It is acceptable to use automated document generation tools. At the end of the project and conclusion of CSE449, a Developer's Guide will be submitted. This is a required artifact, with only rare exception. I suggest you try to use an automated document generator, such as* [*Doxygen*](http://www.doxygen.nl/index.html)*, to support these efforts. Not only will you have satisfactorily followed a programming style guideline but also create most if not all of you Developer’s Guide. For any project that will ultimately supported by the university, I highly recommend this approach. I will expect very high quality documentation to provide MU IT.*

## Testing Methodology [Yixin Li]

*Describe how you will manage your testing. By necessity, you will describe your version control mechanism. Include where the test cases will be defined, how the tests will be executed, and how defects will be documented and addressed. Depending on the development methodology you select, testing may overlap especially if you elect to do Test-driven Development methodology.*

*Also describe the user acceptance testing and expectations of the Sponsor. This exercise will contribute to the final product acceptance by the Sponsor. For example, with the Sponsor be the only approver, will there be a pilot or some other request.*

We will update our code and do version control by gitlab tool. Identify version via a decimal number from 0 to 1(increment by 0.01), the great progress may increase version number significantly.

**There are two main phases of testing our validated software:**

(phase two starts only if phase one is finished)

**Phase one:** Test the functions of software by virtual verifiable data, such as start position and destination. And then measure the quality of navigation by path distance, complexity, and running time.The test details and documentation will be placed in shared drive when ready to run any test.

**Phase two:** Run software in real-time, and interact with server to get the location of user. Test it on phone and in the King library.

For user acceptance testing, it will be tested in both phases, because the accuracy of tracking location is something out of control in this project, we need to make sure that the software is usable under the virtual environment to control the overall quality.

## Design Artifacts [Yixin Li]

*Include here some high level design documentation that helps augment the readers understanding of the project scope. For research projects, this section should be reviewed for relevance.*

In this project, we will design a software app that can both tacking the location of user and giving the navigation of items located inside of King library. First we need all access source of items location in the library, such as books, computers, printers, and study rooms etc. Based on this information, we transfer them into programming data structure, and use it as a small local database. Next we have to have an algorithm which takes position, destination and map of library as input, return the shortest path. And our last part of this navigating system is tracking the position of the user, that is based on cooperation with other project group, the M3 mapper. We might send a request to their server to get the position of our app user.

## **Requirements Specification [**Yangkai Zhang**]**

*Document any requirements if appropriate for your project. Export from any project development collaboration site (i.e. Trello) is acceptable as long as it is readable.*

Using Trello to release our tasks and record of project.

## **Going forward [**Yi Yang**]**

The App could be expend to whole campus. the App might also use as a campus app that let the faculty and students schedule appointment, students communication software, Contact whole building's students in an emergency situation, and finally become Miami versions of facebook and google map.