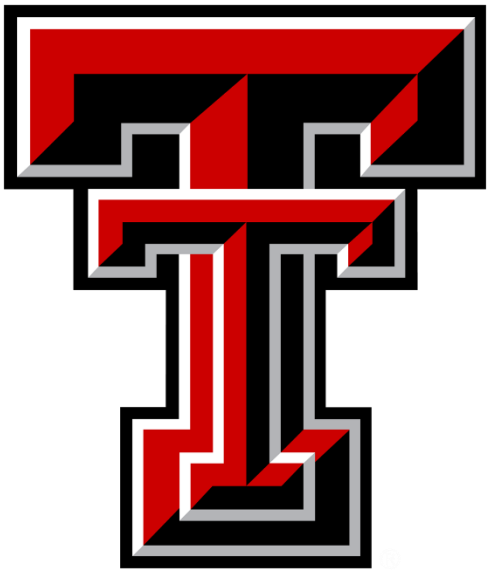
THE TASK

(**T**TU **A**pplication for **S**tudent **K**nowledge)



BY:

Adam Clark, Hien Nguyen, Soo Min Chae, Haider Khan

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1. Executive Summary

The TASK is a mobile application which facilitates students with resourceful information when they need it any time and place. The application was developed while considering the needs of the students at Texas Tech. The need for such an application was a necessity because Texas Tech has a huge population of students, and to assist and provide resourceful information to everyone is challenging for the many different areas of staff that makeup the university. Also, there are many unique departments and offices with numerous websites and resources making it difficult for students to find the content and resources they are searching for. In many cases, the students are completely unaware of what Texas Tech has made available for them to take advantage of. Another problem outside of departmental information is information among teachers. Students can be clustered when trying to jump between blackboard, syllabuses, and websites, trying to figure out when and how to contact their professors. Considering all these problems when developing the TASK, we did so in a way that the wide array of information offered to students is presented in a user friendly, easily accessible manner.

In the proposed application we integrate an AI through a neural network technology, which enables the application to interact with the user in real time by them asking a question and instantly getting a response. This function makes many processes automated and saves the departments of the university time and resources. Alongside the AI, the data will be easily navigable so the users may manually find information they need. Once the departments are less focused on providing simple guidance and information to students, they will be available to work more on higher priority aspects. Furthermore, this application was built with MEAN stack technology which uses only one coding language for front end and back end. Therefore, the TASK is highly cost-effective, and easy to maintain and develop because there is no need for developers to keep track of several different areas of information.

2. Front Matter

2.1 Description of the Problem/Opportunity

Texas Tech University's assets are not being utilized to its maximum capacity. Numerous incoming and existing students are not aware of TTU’s resources among the campus since they are spread vastly among the different departments. This has resulted in a huge loss of time and resources for each department because of the need for students to constantly call to request information because they struggle to find an answer or simply do not know where to begin looking.

The project team has recognized the TASK will help students become much more aware of what is offered to them by attending Texas Tech University. The main reason for the TASK is to make the information and resources that are offered by TTU available in a very simple, concise place. The mobile application will be able to answer any questions that the students may ask, and if not will be an excellent guide to finding the answer.

Texas Tech University will get the accompanying advantages by coordinating the TTU Student Knowledge Application. They may encounter an increase of student happiness with the application, an increase in the graduated class association, an increase in assets being utilized in a meaningful way, and a decrease of students who stay befuddled about the huge amount of resources and information that is surrounding them.

2.2 The Goal

The goal of the TASK project team intends to execute an efficient mobile application to assist students with simpler access to the resources and information at Texas Tech University by January 13, 2020. This is when our principal testing stages will begin, and some students will be available to try our mobile application and provide feedback. Pushing ahead, the project team expects to fully release the TASK to the entire Texas Tech community by February 7, 2020.

2.3 Success Criteria

Our success criteria include how satisfied students are while utilizing the application and the measure of data or occasions being shown connected with TTU resources and information. Our target feedback rate is ninety percent acknowledgment from all the users who utilize the TASK application. We intend to reach this objective during the principal testing stage on January 13, 2020.

2.4 Assumptions/Risks

The risks that we estimated to happen were schedule, cost, and negotiation risks. Since our project had to go through negotiations with the university over information sharing and profit-sharing issues, we thought that the project might be delayed if the negotiations did not conclude as we intended. We also estimate that our project will finish over budget and behind schedule. At the current stage of our project, we are behind schedule but under budget. One of the other risks is that the university will continue to add other resources that will be hard to maintain without proper documentation and continuous analysis of the development.

2.5 Recommended Prescriptive Software Solution

Our project team recommends a simple software system that will measure the usage and satisfaction level from the users of the TASK. This solution will make use of already available technology and resources so that there are no outside sources that are necessary. Other than for potentially more in-depth analytical purposes, there is no need for additional software.

2.6 Impediments/Obstacles Encountered

Up until this point, we have experienced zero impediments or obstacles, as our key partners and task support has all endorsed and acknowledged our proposed project plan, development requirement plan, scope, and budget. However, we expect to experience an under-budget or late

sprint submission during the testing and arrangement stage. To solve this obstacle, we are managing each developer's work and conducting several walkthroughs outside of our main testing stage.

2.7 Current Status

As of now, we are seventy percent completed with our project task. Moreover, we also expected that our project is behind schedule and under budget. We have finished the project proposal plan, recognized our stakeholders, recognized related threats and advantages, as well as built our starter spending plan. We have effectively acquired an endorsement mark to continue working on the project with our proposed spending plan and project sprint. The project group's subsequent stage is to perform the testing and deployment stage.

2.8 Lessons Learned

With this project we learned that teamwork is very important to any project’s success. We communicated with each member in our team and held frequent face to face meetings in order to minimize the gap of communication between each team members. Also, we learned that encouraging each other is important in a team project. Each member of our team encouraged others to do the required work and we were open to those encouragements and recommendations.

3. Revisions

Requirements Document

- Grammar and spelling mistakes were corrected
- Added in customer focus groups for the prioritization of requirements and the requirement process
- Revised some sections for better clarity and explanation

Project Proposal

- Grammar and spelling mistakes were corrected
- Included experience and details that better sold the team
- Ensured the scope was written in an understanding, clear manner

Project Plan

- Grammar and spelling mistakes were corrected
- Corrected the Work Breakdown Structure
- Strengthened the Project Risk, Procurement, and Stakeholder Management Plan sections
- Included walkthroughs and milestone to our tasks list and charts
- Redesigned the break-even graph to ensure it was clear and accurate

4. Requirements Document

4.1 Introduction

4.1.1 Objective

The **T**TU **A**pplication for **S**tudent **K**nowledge will be a gateway framework that helps all incoming and current students feel more confident with Texas Tech's support and become more informed about the immense measure of assets Texas Tech offers.

Our objective with this project is to help students effectively address their concerns for anything Texas Tech related and find out what channels to go through for additional information if needed. The system will allow the students' access to all their provided resources like TTU Student Success & Retention department's helps desk, TTU Legal Service, etc. that they may or may not be aware of.

4.1.2 Scope

The TASK team aims to execute an effective system by December 3, 2019. The team will work closely with the Texas Tech Information Technology department to build up a gateway that allows TASK to fulfill its objective. To achieve this, different specifications must be achieved:

- TASK system will be connected directly to TTU Network for the simplicity of accessing the application.
- Build a login database for both students and faculty by utilizing the already functioning RaiderID and TTU email accounts for ease of access.
- Gather data from the Texas Tech departments to input into our application.
- Have a live update system that allows staff to update their department's information in real time.
- Make a user interface that allows for simple usability and navigation.
- Connect all TTU related announcements and updates to the homepage for quick access to this information.

4.1.3 Limitations

The TASK mobile application will strictly display information and events directly linked with Texas Tech University. External sponsors and supporters of the university will not be able to post or update information on the application. This means only official TTU departments will be included.

4.1.4 Responsibility

The achievement of the objectives set is subject to the product owner and Scrum Master's agreements. Our group's Scrum Master will oversee maintaining proper documentation of our project's development to compare with the goals. Suggested changes will be brought up in

meetings and reviewed by the team; however, all our team's endorsement should be required to continue with the proposed suggestions.

4.1.5 Approval of the Requirement Strategy

The Scrum Master and Scrum team will be responsible for approving the requirement strategy. This will be achieved by going over the details and breaking down the specifics for how to achieve our goals in meetings. Once thoroughly discussed, the Scrum Master and Scrum team will share any concerns and after everything has been properly addressed the Scrum Master will give the final approval or denial.

4.1.6 Definitions and Abbreviations

Term	Explanation
TASK	**T**TU **A**pplication for **S**tudent **K**nowledge. This is the name of our mobile application that is going to be developed.
Scrum Master or SCRUM	SCRUM is an Agile process framework for software development. The Scrum Master is the supporting role that keeps the team operational.
RaiderID	Texas Tech Student ID used for student identification and login purposes.

4.1.7 References

No.	Document name	Created by	Date	Version
1	Project Charter	Hien Nguyen, Adam Clark, Haider Khan, Soo Min Chae	2019-09-03	1.0
2	Requirements Document	Hien Nguyen, Adam Clark, Haider Khan, Soo Min Chae	2019-09-19	1.0

4.2 Overview

4.2.1 Organization

Requirement work will be divided up into individual sections and then assigned into sprints, following the SCRUM methodology. Each of these sections the work will be broadly divided into will be further broken down into specific processes that needs to be finished during the respective sprint. Breaking up our requirement work into sprints will allow the team to be much more organized and aware of the tasks that are required during these set-out sections of work.

4.2.2 Roles and Responsibility

The TASK team will be following the scrum framework to develop our application. There is no traditional project manager, but rather the typical work you would expect from this position is split between the Scrum Master and the product owner. The Scrum Master acts as the head of the project regarding negotiating with the product owner over requirement changes or issues, managing risks, solving limitation problems, and helping the team operate at their maximum potential.

The product owner is responsible for the things required from the project. They will provide ranked objectives based on their value, provide the required information for success, and provide various requirements for the product. A product backlog will also be created by the product owner. The product owner will be the main voice for the functional direction of the product.

Finally, the Scrum team is responsible for delivering the actual product from this project. This team is the remaining project members who were not selected as Scrum Master. The Scrum Team consists of the developers and testers for the mobile application. The team will actively estimate time frames and give commitments on the product, then work towards fulfilling the commitments of the project within the estimated time. Team members will work with both the product owner and Scrum Master to achieve their goals.

4.2.3 Participants

The team will need to include each different department of Texas Tech University to ensure that the information being listed is complete, up to date, and functional. Additionally, the team may want to get in contact with several Texas Tech students to get their opinions on what they want from the TASK application.

4.3 Requirement Management

4.3.1 Requirement Planning

For reviewing the requirements of our project there will be a few relevant stakeholders involved in the process. The Scrum Master, Scrum team, and product owner will all be responsible for making sure the requirements are specific, measurable, achievable, realistic, and timely (SMART). Also, the individual departments of Texas Tech University will be stakeholders and thus be included in making sure the requirements align with their vision for the app and their respective department.

The requirement planning process will involve taking minutes from every meeting that takes place between stakeholders, even if every stakeholder is present. The team will also make the product backlog prioritized by the product owner, the requirements of each planned sprint, and a thoroughly documented log of any changes to the requirements available to the stakeholders. This will be achieved by an online file sharing service that will be available to these relevant stakeholders at any time.

4.3.2 Risk Analysis

TASK has very few risks that could cause a massive amount of problems for our team. The main difficulty will be ensuring that everything is updated and relevant to the students when they are using the app. There will be a lot of information that is going to be stored in this application and

keeping track of the vast amount of changing data from the different areas of the university will be a big responsibility to maintain.

Changing information in the system may cause negative consequences in other areas of the application because of the huge amount of information. If there is redundant data in the system, making changes may become a problem and lead to unclear answers when students are using TASK if every piece of information is not updated in the different areas that it is located.

4.3.3 Version Management

On the off chance that there is a change to any of the reports after it is finished, the Scrum member is relied upon to share remarks in the archive for the remainder of the group to look over. The member will adjust the archive in the shared document, so changes are clearly marked and viewable. The new version of the TASK app will be marked with the accompanying numbering procedure. The main full discharge is 1.0. Any new highlights or changes in necessities will be named as 1.1, 1.2, 1.3, and so on.

4.3.4 Traceability

A prerequisites traceability matrix will be actualized to follow the connection between necessity and prerequisite satisfaction. The matrix sheet will mirror the test state of each assignment, including, however, not restricted to the achievement rate. We will make another sub-unit to fix the blunder if there is any mistake that reflected in the matrix sheet, and then proceed onward with the task.

4.3.5 Prioritization of Requirements

Texas Tech University, specifically the IT department, will be acting as product owner for this project and thus will be prioritizing the requirements. This will mainly be achieved through weekly meetings where the team will continuously update priorities and create top-ten risk prioritization tables by analyzing the requirements, technical risks, and development time for each item.

Additionally, we will conduct focus groups made up of current TTU students to get an understanding of what they believe will help make the app more useful for them.

4.3.6 Approval of requirements

The requirements will be established by the Scrum Master and product owner. The Scrum team will also openly discuss any problems that may be seen with the Scrum Master so they may return to the product owner to discuss. The team consider problems with time, cost, or risk. Once the concerns have been mitigated, the Scrum Master and product owner will ultimately give the final approval of the requirements once everything is agreed upon.

The same process will be established when a change is requested for a requirement. First, the change will be presented to the Scrum Master by the product owner, or vice versa. Next, the Scrum Master and team will discuss the proposed change so that any concerns that may arise during development can be addressed. Once there are no more concerns, the Scrum Master and product owner will give their final approval or denial.

4.4 Requirement Development

4.4.1 Requirement Process

A list of requirements will be created after a discussion between the ScrumMaster and the Scrum team. Also, customer focus groups will help get students' perspectives on some potential requirements. Every team member will have their ideas and present them during the discussion among the team members and the ScrumMaster. Once the requirements are established and presented, the whole team will prioritize the requirements during multiple discussions. At this time, the team might come up with some better requirements and will look for any missed requirements that are necessary for our project. The team will review the requirements and prioritize them in multiple aspects such as time, money, and resources. When this process is over, then the team will start the development of the application.

4.4.2 Business Analysis

Business analysis will be used when the project is in the execution and monitoring phases of the project. During these two phases, business analysis will provide information on which requirements met the actual needs and how they are performing. Some requirements of the project will need improvement and there will be some portions of the project that need a whole new requirement. The Scrum team will then have further discussions over the results of the analysis and figure out how we are doing and what must be done for improvement.

4.4.3 Gathering Techniques

We will interview some officials of TTU to provide correct information. Most of the information will be available on the web, so we will be able to use crawling algorithms as well. We will also gather information from past and current students or employees to provide more generalized information through surveys and interviews.

4.4.4 Development of Requirements

Major functions

RD-MF-1. A search engine will be required that can conduct searches on information located around Texas Tech based on location, description, price (if applicable), activities, etc.

RD-MF-2. A database engine will be required that can store, retrieve, update and delete records within tables…in a relational format.

RD-MF-3. A communication engine that will allow users to send in a request for additional information or contact the development team with any major issues via live chat.

RD-MF-4 A scheduling engine will be required to schedule TO_DO items onto a calendar.

Outputs

RD-O-1. A list of relevant information is produced when a search is executed, displaying all stored information and listing additional resources that may be useful.

RD-O-2 A user will receive a receipt from their contact request that shows the request was successfully submitted.

RD-O-3 A list of contact information for each informational section of the application will be available to students (if applicable).

RD-O-4 An updated TO_DO list is produced on command that shows what the user has added to their schedule.

Inputs

RD-I-1. The user will be able to input keywords within our search engine.

RD-I-2 The user can submit a request for additional information on a topic or help with the app to the department the currently listed information is from or the development team, respectively.

RD-I-3 The user can initiate a live chat with developers during business hours.

RD-I-4 The user will schedule events to their calendar that will be available to view on command.

Performance

RD-P-1 Conduct a report of FAQs after each academic semester.

RD-P-2 Conduct a report of user-established information to keep the information credentials to meet the standard.

RD-P-2 Conduct a report of volunteer submitted surveys from students on areas to improve and what to add/remove in future versions of TASK.

Growth

RD-G-1 Within the first year of launching, get 1,000 users per day.

RD-G-2 Spread to university clubs and groups that will be allowed to submit information and events into the app for a more centralized student knowledge app.

RD-G-3 Allow a more personalized experience for each student based on their enrolled classes, scheduled events, and clubs they participate in.

Operation and Environment

RD-O-1 Computers and servers for TASK will be located on the Texas Tech Campus in the computing center.

RD-O-1 Only app maintenance members will be allowed access to the computers and servers used for TASK.

Compatibility, Interfaces

RD-CI-1 Database created with MySQL.

RD-CI-2 Portal access available with the mobile application.

Reliability, Availability

RD-RA-1 The upper limits in terms of defects found in the first six months should be less than ten and no more than five after that semiannually.

RD-RA-2 Any concerns with the application will be addressed within three days, rather action is taken or not.

RD-RA-3 Information will be updated on a routine bi-weekly basis but is subject to earlier updates if needed.

Human Interface

RD-HI-1 The application requires minimum experience of smartphones and applications.

RD-HI-2 Every user will be able to access the search engine in the app and the calendar. They will be logged on with eRaider credentials for the calendars.

Organizational Impact

RD-OI-1 The project team will only be left with the maintenance personnel after the closing phase of the project.

Maintenance and Support

RD-MS-1 Our app will function within the TTU system, and all account related issues will be directed to TTU and TASK support will be provided for technical or informational errors within the app.

RD-MS-2 A 'help' section will be included in the application that will allow for concerns to be submitted to the maintenance team, as well as a FAQ page that will display solutions to common issues.

Documentation and training

RD-DT-1 Project charter and project plan show our goals and vision for the application.

RD-DT-2 Source code of the app will be kept for reference.

RD-DT-3 Agreements and discussion notes between TTU to reference.

4.5 Follow-up and Documentation

4.5.1 Documentation

Presently, we have completed our project charter and our requirement document. The other two templates that we find support for the subsequent stage of our venture are:

- Traceability Matrix:
    - The table used to follow the association between need and essential fulfillment.
- Resources Breakdown Structure:
    - Rundown of all assets to be a contribution to the database. This capacity is for the simplicity of controlling or sorting out the work.

Similarly, any future changes made to the necessities will be recorded and named as most present version.

4.5.2 Templates

Document name	**Location**
Project Charter Template	ISQS 4350, Blackboard
Requirements Document Template	ISQS 4350, Blackboard
Traceability Matrix	Microsoft Excel Template
Resource Breakdown Structure	Microsoft Project Template

4.5.3 Tool Support

The main help that we utilized to complete this Requirement Document was Microsoft OneDrive. We will continue to utilize this platform for any future project work.

4.5.4 Numerical Values

We will use reviews from the application stores to determine how our application is being perceived by the student body of Texas Tech. From these reviews, we can gather feedback through the user-submitted comments and conduct meetings on how we can solve any concerns. Additionally, if permitted, we will send out emails to the student body asking them to fill out a survey that will have them rank their satisfaction with the different areas of the application so we will have a better understanding of where to improve.

5. Project Proposal

Sam Segran

Chief Information Officer

Texas Tech University

2500 Broadway

Lubbock, TX 79409

Dear Mr. Segran:

Thank you for the opportunity and for showing interest in the TTU Application for Student Knowledge, TASK. Our application will help students effectively address their concerns for anything Texas Tech related and could easily find an extensive amount of resourceful information that will benefit them in any situations they may encounter. This application will be able to serve the students in real-time during certain monitored hours as well as offer additional information at any time necessary. The TASK will be essential for the entire student body of Texas Tech to ensure they have the full capability of using their university's resources to the best of their ability and cut down case resolution time for the university.

Enclosed is our formal proposal. If you have any questions, please feel free to call Haider Khan, Technology Manager of Applications for Student Knowledge Inc., at 972-555-555.

As we have reserved resources contingent upon your acceptance of our project proposal, a timely response is essential. If we have not heard from you within one week, we cannot guarantee the proposed start date and cost estimates.

Sincerely,

Haider Khan

Technology Manager

Applications for Student Knowledge Inc.

972-555-555

5.1 Scope

The TASK (TTU Application for Student Knowledge) will help students by effectively addressing their concerns for anything Texas Tech related and find exactly where they need to reach out for additional and resourceful information in a quick and accessible manner. Our application will facilitate a user in real-time by navigating them in the right direction accordingly or help them know where to look for additional information. The app will aid in cutting the time of case resolution for school concerns and make students' life easier by providing information whenever they want it. This allows other university entities to have more time for essential work functions rather than assisting students.

The application will be designed to assist students who need assistance and are not sure where to start considering the enormous number of departments and resources available. Our application will use the K-nearest and Tree algorithms to conclude the request from students. Running through the algorithm will generate an accurate result that will be viewable to the student (user). The TASK system will build a database template for both students and faculty by utilizing the RaiderID and TTU email. To make sure of the validity of the information, we would recommend gathering data from the Texas Tech faculty to input information, which enables management to make changes if needed. We will also be implementing a live update system that allows faculty to create updates to their information and making a user interface that enables them to pick their

data inclinations. The system will allow the student to be connected to all TTU related applications services and Texas Tech daily announcements on the homepage.

We envision a surprising development in the usage of the TASK framework. The framework will be actualized inside the Texas Tech University campus. Within the next three years, we expect that the TASK system will be a crucial part of student life at Texas Tech University.

Presently, our proposed application may be executed to Rawls College of Business understudies and faculty for testing purposes during the first year. Our group intends to actualize the TASK framework through the entire Texas Tech University population after the testing phase to assist the entire student body. This application will not support any promotion from patrons of the college or extend to any other outside entities unassociated with the university.

5.2 Advantages

The TASK will be able to bring various advantages over the alternatives that TTU currently provides. The TTU website and IT Help Central are the main sources of knowledge for the Texas Tech and Lubbock communities. However, there is a small number of users who obtain useful information from the website. It is difficult to obtain the right information from the website since the information it provides lacks user accessibility and is not well advertised among incoming or current students. The TASK will be able to increase user accessibility and will work with the RRO team to advertise this app to improve the affectability.

The TASK team consists of three members that came to TTU as freshmen and one as a transfer student. Therefore, we will be able to give both newcomers the information they need according to our own experiences. We did not receive useful information on where to find the specific information we need. We had to ask our friends and alumni to obtain the information, which can be simpler if we had an app that contains all the information that we need. We will also actively receive user feedback and suggestions based on their necessities. Additionally, at IT Help

Central, calls regarding the same answers are received consistently. We think that this can be resolved through proper advertisement and supply of proper information. Our team comes with an extensive background of knowledge in not only app development, but with installment and in-depth analysis as well. We have created several applications for many universities and know what is needed for a successful release. We are all also very reasonable and willing to work with the customer to provide the best possible product.

We believe that the service we can provide will exceed the current information source. The current alternative lacks user interaction and accessibility. Users have a difficult time finding the information and some users don't even know if they have the resources. Providing the main knowledge base for the whole new-comers and current students will improve their experience and save resources.

5.3 Financial

5.3.1 Cost Analysis

TASK System **Cost**

- TTU Information System: $2,000.00
- Annual Maintenance: $0.04 /user
- Annual Advertising: $2,900.00
- Testing $6,284.00

TASK System Cost: $11,684.00

Scrum Team

Project Development: 3 months

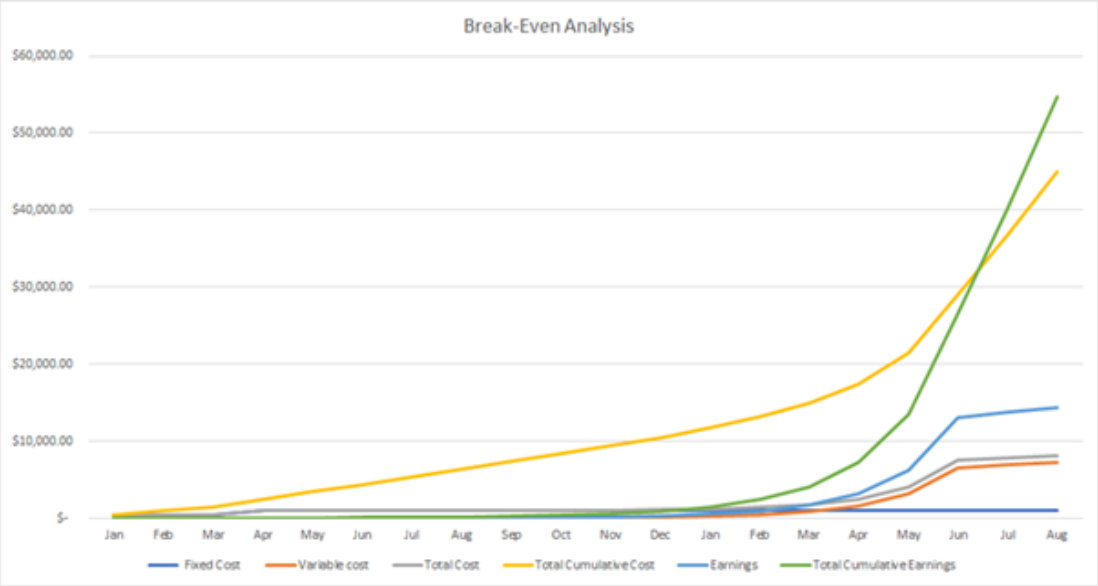
Testing and Contingency: 1.5 months

- Project Manager: $27,000.00
- Project Developers: $24,000.00

Scrum Team Cost: $51,000.00

Total Cost: $62,684.00

5.3.2 Break-Even Analysis



We have set the variable cost as $0.30 per customer and earnings as $0.60 per customer. With those numbers, we will break-even 18 months after the project's start. Although it is not represented in the chart below, our total cost and earnings will start to smooth out as we have a maximum number of customers who uses the system.

5.3.3 Cost Management Plan

If we assume that the project gets approved in a week, the start date is November 12, 2019. From that point, the estimated completion of design and integration is on January 10, 2020, and the testing and deployment phase will end on February 7, 2020.

Texas Tech University's information system is estimated to be $2,000.00 and the annual maintenance fee of the product will be $500, and the advertising fee is $2,900. The total cost of the development is planned to be $62,684.00.

5.4 Plan

The TASK development project team will consist of Haider Khan as the Scrum Master, and the remaining members, Adam Clark, Soo Min Chae, and Hien Nguyen, make up the Scrum Team.

For this project, we will be following the agile methodology known as SCRUM so that we can continuously gather information from departments and the development team as we begin to develop the application. The major phases that will be executed using the SCRUM system are listed below with the tasks that will be done during the phases. Because of the nature of the SCRUM methodology, some of these phases may be revisited throughout the development.

1. Product Backlog Creation

Conduct interviews with the TTU IT team, different TTU division management teams, and students to assist in learning about the current needs and wants for this process.

Create a list of features that should be implemented during the development of the application.

2. Sprint Planning and Sprint Backlog Creation

Determine the duration needed to complete the planned sprint for development.

Cooperate with team and stakeholders to determine the importance of tasks in the product backlog and define appropriate labor costs.

The team will figure out the best way to develop the prioritized items from the product backlog and develop the sprint backlog that will consist of development items that will be finished during the proposed sprint.

3. Working on the Sprint. Scrum Meetings.

Begin the development process of the currently assigned sprint.

Keep an ongoing development log of tasks that are being completed, currently developed, or not yet started.

Attend daily scrum meetings to gather information about the status of the current sprint. The discussion will include finished tasks, the next steps, and any problems that have occurred.

Analyze the uncompleted tasks and compare them with time remaining in the sprint to determine current progress compared to the estimated time frame.

4. Testing and Product Demonstration

Create a report that demonstrates the results of the sprint.

Present the finished product to the intended departments to ensure information is accurate and the features are included properly.

5. Retrospective and Next Sprint Planning

Discuss with the development team the results from the previous sprint so that improvement can be included in the next iteration.

Concentrate on planning the next sprint.

5.5 Deliverables

There will be five deliverables within the span of the TASK project. Every deliverable incorporates significant capacities and assignments. A deliverable may not start preceding the next step, due to the deliverable reliance on its previous stage. To guarantee the work is completed within the budget, our group has set up expectations and produced the assignments of due dates for every deliverable. Every deliverable and its due date task can be exhibited beneath.

Project Analysis:

Start: November 12, 2019

End: November 19, 2019

Project Design:

Start: November 25, 2019

End: November 28, 2019

Project Built:

Start: November 29, 2019

End: January 10, 2020

Project Testing:

Start: January 13, 2020

End: January 30, 2020

Project Deploy:

Start: January 31, 2020

End: February 7, 2020

5.6 Acceptance

During the project life cycle, our teams will have a multiple audit point area. These reports will be delivered to the client for review and acceptance; the client will have a ten-day time-period to respond to them. If a client does not fully approve the reported work, then they may provide feedback accordingly. The feedback will be considered to perform an adjustment and soon the team will reiterate the designated problem according to the client's feedback. If needed, a face-to-face meeting can be scheduled to further discuss acceptance. Once the iteration is done, the second round of audit reports will be delivered to the client and the client will have another ten days to respond to the report.

5.7 Alternatives

Texas Tech University could choose between a few different options rather than the development of a mobile application. This includes a new, detached website from the primary, public TTU website or a physical alternative such as information hubs scattered throughout campus. A website would begin to complicate things further as students would get confused about which site they should be looking at and struggle to navigate without a laptop/desktop ready at their disposal. The physical alternative leaves students worrying about finding these locations and then possibly having the problem of waiting behind other students that need help. The most logical solution to Texas Tech University's problem is a mobile application. A mobile application provides the ease of access and navigability that a website and physical location cannot match. Students today use their phones for everything, and a mobile application is the easiest way to provide information to them in a reasonable way.

5.8 Terms, Conditions, and Assumptions

The amounts quoted here are good for seven days from receipt of this proposal. The TASK team holds no responsibility for any problems that arise as a result of any problems that arise after the completed final deliverable is delivered. The TASK team has no enforcement of recommendations after the completed application is given to the university and therefore cannot be held liable for any relative problems associated with it. It is assumed that the customer's requirements proposed during development will be fulfilled to the assigned details in the appropriate document. The TASK team will fulfill the project within the given duration and cost unless requirements are further discussed outside the initial planning phase and development phases.

5.9 Terminology

IOS: is the operating system created by Apple that supports the iPhone, iPad, Apple Watch, etc.

Android: is Google's flagship operating system. Building for Android means using java, a more common language.

Push Notification: A push notification is a short message that developers can send to app users even when said users don't have their mobile applications open.

SCRUM: Scrum is a framework within which people can address complex adaptive problems.

5.10 References (Clients)

We have created a variety of different student knowledge apps for many different universities (listed below) through our past experiences. Each application followed the same general guidelines of providing the students with a more cohesive way of having information and knowledge provided to them in a convenient, organized manner. These applications always helped faculty keep the information updated and students informed.

Oregon State University.

University of Michigan.

University of California, Santa Cruz.

University of California, Riverside.

Boston University.

University of Alaska Fairbanks.

University of Colorado Denver

Florida Atlantic University

George Mason University

6. Project Plan

6.1 Introduction

TASK is the mobile application that will provide students with resourceful information when they need at any time and place. The application will simply reply to the user according to the question they ask. The application is compatible on Android and IOS devices, and a user can also access the website version. TASK is unique in that any other automate response application because the application generates its output through a new AI (neural network) system. This methodology has the capability to train to accurately produce the output. The application generates a big number of queries in real time which fulfills the need of our sponsor Texas Tech University.

Project Plan:

Start: November 12, 2019

End: November 19, 2019

Project Design:

Start: November 25, 2019

End: November 28, 2019

Project Built:

Start: November 29, 2019

End: January 10, 2020

Project Testing:

Start: January 13, 2020

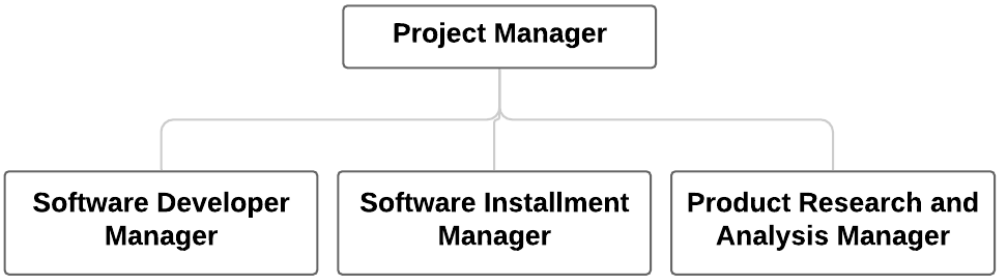
End: January 30, 2020

Project Deploy:

Start: January 31, 2020

End: February 7, 2020

The table below is the organizational chart of our team project:



6.2 Project Team

Haider Khan (Project Manager) - The leader of the project is responsible for planning, overseeing, and executing the work. He will direct all significant errands, while creating initial undertakings, and constantly checking on other members' processes. He will be on the project about 100%.

Hien Nguyen (Product Research and Analysis Manager) - Responsible for research and analysis of the program function for the project. She will characterize functionalities that are necessary for the framework and lead a preliminary program test in the Rawls. She will be on the project about 100%.

Adam Clark (Software Installment Manager) - Responsible for actualizing and keeping up the physical program system for the project. He will supervise the installation in Lubbock. He will be on the project about 100%.

Soo Min Chae (Software Developer Manager) - Responsible for forming the new system and keeping the system up to date with the latest version. He will supervise and build up the system functions as requirements. He will be on the project about 100%.

6.3 Project Tasks

PT-{RD-DT-1}-1 Create project charter and plan

Milestone

PT-{RD-P-1}-2 Conduct FAQ reports from students

PT-{RD-P-2}-3 Interview students for expected standards

PT-{RD-P-3}-4 Conduct surveys for students to share thoughts

PT-{RD-DT-3}-5 Conduct weekly meetings with TTU management

PT-{RD-DT-3}-6 Document all requirements

PT-{RD-DT-3}-7 Require signatures on all documentation

Milestone

PT-{RD-O-1}-8 Setup servers and computers

PT-{RD-O-1}-9 Create testing server

PT-{RD-O-1}-10 Setup server for demonstrations

PT-{RD-O-1}-11 Limit computers for app development only

PT-{RD-MS-1}-12 Integrate TTU system into application

Walkthrough

PT-{RD-MS-1}-13 Include TTU ITHC & ISC contact information

PT-{RD-MS-1}-14 Access student database information

PT-{RD-MS-1}-15 Access faculty database information

PT-{RD-MS-1}-16 Implement cross functionality with TTU login

PT-{RD-MF-2}-17 Create database engine

Walkthrough

PT-{RD-CI-1}-18 Create database

PT-{RD-CI-1}-19 Populate database with student info

PT-{RD-CI-1}-20 Populate database with staff info

Walkthrough

PT-{RD-CI-1}-21 Assign users to a group

PT-{RD-MF-1}-22 Create search engine

Walkthrough

PT-{RD-I-1}-23 Allow search via keywords

PT-{RD-O-1}-24 Produce information for search engine results

PT-{RD-MF-3}-25 Create communication engine

Walkthrough

PT-{RD-I-2}-26 Create submission for students to request for additional information

PT-{RD-I-2}-27 Allow area for notes/comments when requesting information

PT-(RD-I-2}-28 Create preferred contact method option

PT-{RD-I-3}-29 Create the live chat with developers

PT-{RD-I-3}-30 Create survey prompt after ending chat

PT-{RD-I-3}-31 Design customizable chat features

PT-{RD-O-2}-32 Create receipt system for contact requests

PT-{RD-O-3}-33 Transfer contact information into system

PT-{RD-MF-4}-34 Create scheduling engine

Walkthrough

PT-{RD-I-4}-35 Create calendar to display students' events

PT-{RD-O-4}-36 Create TO_DO list function

PT-{RD-O-4}-37 Allow for input to TO_DO list

PT-{RD-O-4}-38 Allow for sharing of TO_DO list

PT-{RD-HI-1}-39 Develop minimalistic GUI

Walkthrough

PT-{RD-HI-1}-40 Make user friendly buttons

PT-{RD-HI-1}-41 Allow for theme selection

PT-{RD-HI-2}-42 Integrate search engine with student profile

PT-{RD-G-3}-43 Develop personalized results that populate with students' inputs

PT-{RD-RA-2}-44 Hold meetings to address concerns

PT-{RD-RA-2}-45 Develop fixes

PT-{RD-RA-3}-46 Hold bi-weekly meetings

PT-{RD-RA-3}-47 Update documentation as needed

Milestone

PT-{RD-CI-2}-48 Develop portal access

PT-{RD-CI-2}-49 Create admin account groups

PT-{RD-CI-2}-50 Create student account groups

PT-{RD-CI-2}-51 Create editor account groups

PT-{RD-G-2}-52 Allow university clubs and groups information/events to be posted

Milestone

PT-{RD-G-1}-53 Launch marketing campaign

PT-{RD-G-1}-54 Create posters

PT-{RD-G-1}-55 Advertise application on TTU website

PT-{RD-G-1}-56 Mass email to students about app

PT-{RD-MS-2}-57 Create 'help' section

PT-{RD-MS-2}-58 Add helpful information

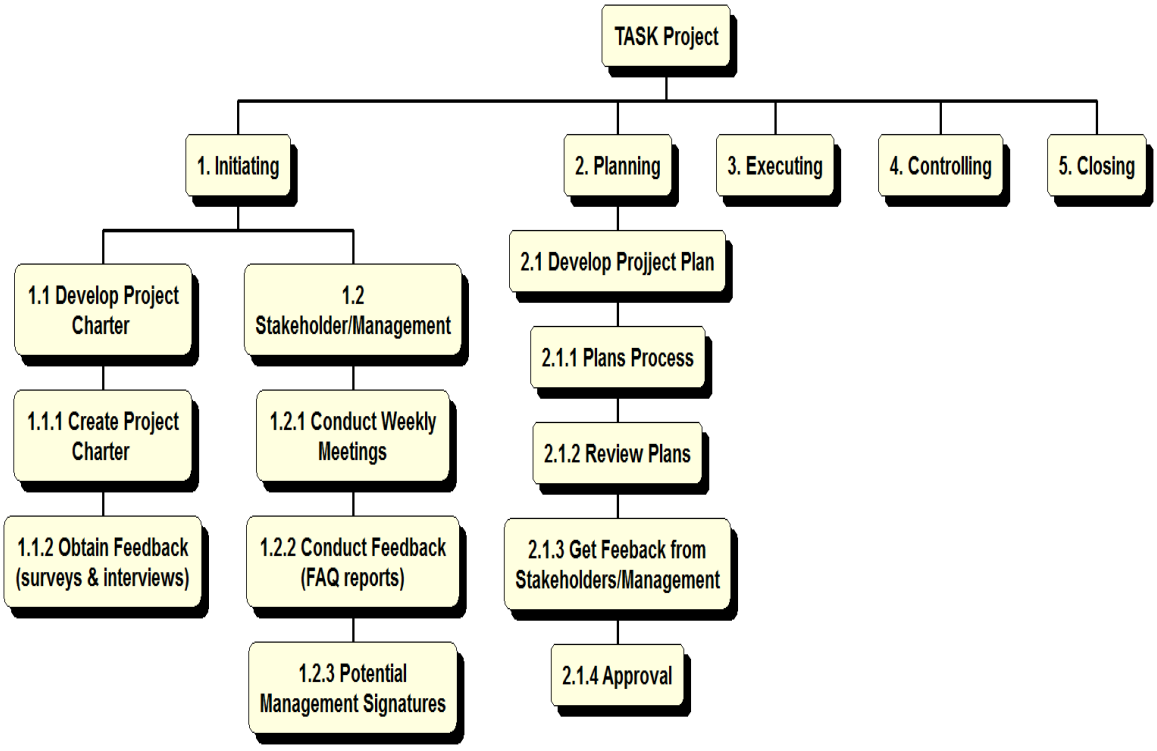
PT-{RD-MS-2}-59 Receive user provided information

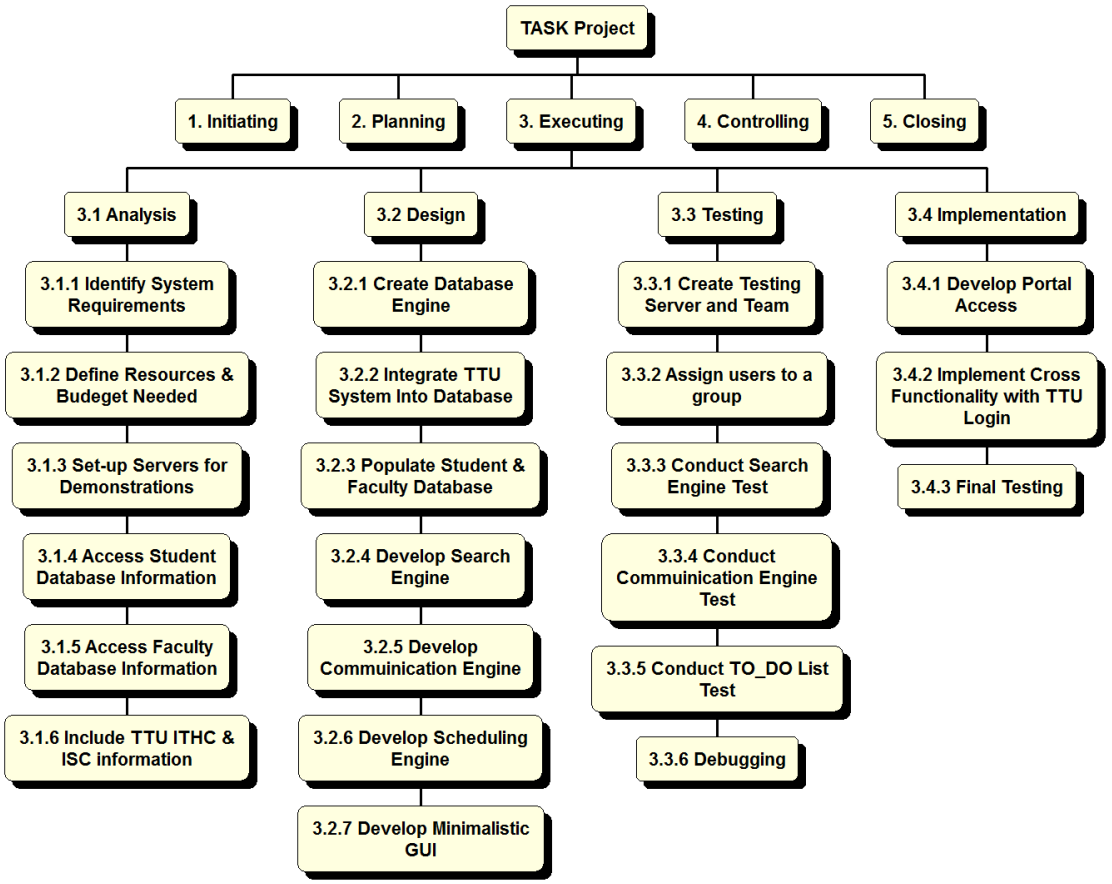
PT-{RD-DT-2}-60 Store source code for internal use

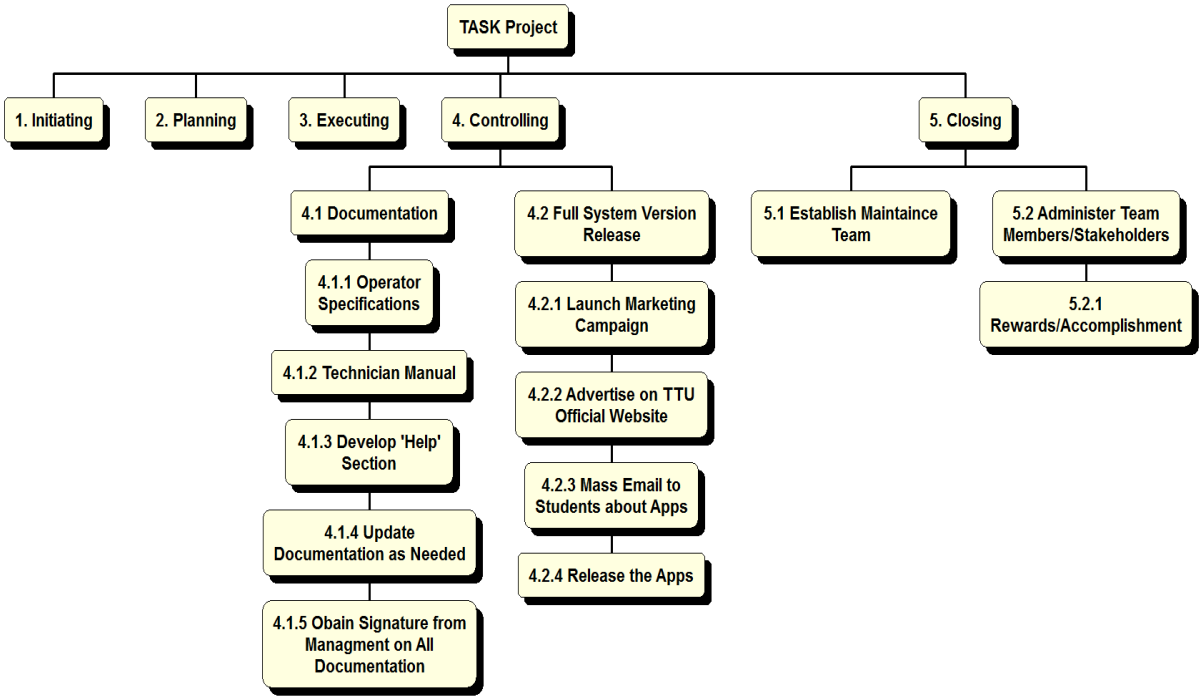
PT-{RD-OI-1}-61 Pass main source code and application control onto TTU maintenance team

6.4 Scope Management Plan

Our group will execute a Change Control Board to control the scope of the project as well as make an Acceptance Test Plan to make sure project tasks are on-schedule and finished. We will conduct an ATP that will portray all tested features, along with the testing instructions and sample solutions.




TASK Project
1. Initiating
2. Planning
3. Executing
4. Controlling
5. Closing
3.1 Analysis
3.2 Design
3.3 Testing
3.4 Implementation
3.1.1 Identify System Requirements
3.1.2 Define Resources & Budeget Needed
3.1.3 Set-up Servers for Demonstrations
3.1.4 Access Student Database Information
3.1.5 Access Faculty Database Information
3.1.6 Include TTU ITHC & ISC information
3.2.1 Create Database Engine
3.2.2 Integrate TTU System Into Database
3.2.3 Populate Student & Faculty Database
3.2.4 Develop Search Engine
3.2.5 Develop Communication Engine
3.2.6 Develop Scheduling Engine
3.2.7 Develop Minimalistic GUI
3.3.1 Create Testing Server and Team
3.3.2 Assign users to a group
3.3.3 Conduct Search Engine Test
3.3.4 Conduct Communication Engine Test
3.3.5 Conduct TO_DO List Test
3.3.6 Debugging
3.4.1 Develop Portal Access
3.4.2 Implement Cross Functionality with TTU Login
3.4.3 Final Testing


TASK Project
1. Initiating
2. Planning
3. Executing
4. Controlling
5. Closing
4.1 Documentation
4.1.1 Operator Specifications
4.1.2 Technician Manual
4.1.3 Develop 'Help' Section
4.1.4 Update Documentation as Needed
4.1.5 Obain Signature from Managment on All Documentation
4.2 Full System Version Release
4.2.1 Launch Marketing Campaign
4.2.2 Advertise on TTU Official Website
4.2.3 Mass Email to Students about Apps
4.2.4 Release the Apps
5.1 Establish Maintaince Team
5.2 Administer Team Members/Stakeholders
5.2.1 Rewards/Accomplishment

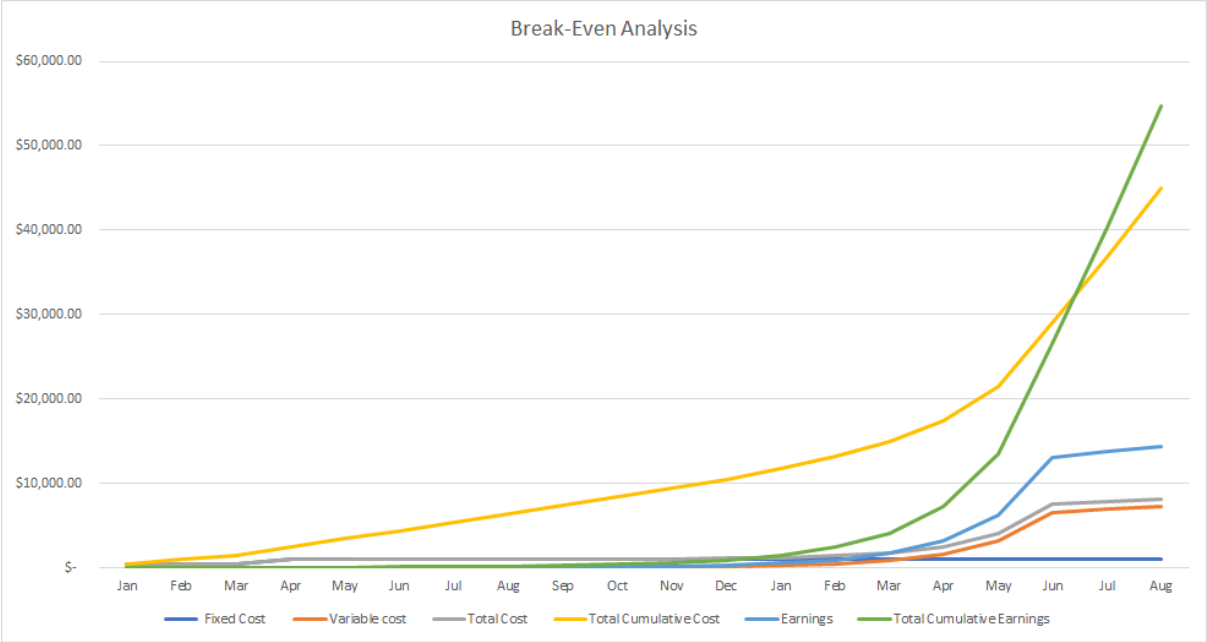
6.5 Cost Management Plan

Our Project Manager will get $6,000 during the duration of the project. The manager will receive half the payment on the last month since only half of the month remains for the whole project. The 3 other team members will get $2,000 per month for the duration of the project except the last month since only the manager will be participating in the final half month of finalizing and testing phase. The initial information system and the data that we are purchasing is $2,000. Maintenance fee will be consistent at $250. We will spend $500 for advertising for the first three months of the lifecycle. For the rest, we are spending $700. We have 10% contingency cost.

TASK cost baseline, created Nov

WBS Items	1	2	3	4	5	Total
1. Project Management						
1.1 Project Manager	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 3,000.00	$ 27,000.00
1.2 Project Team Members	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ 6,000.00	$ -	$ 24,000.00
2. Software						
2.1 Software Development	$ 2,000.00					$ 2,000.00
4. Testing			$ 2,284.00	$ 2,000.00	$ 2,000.00	$ 6,284.00
5. Maintenance				$ 250.00	$ 250.00	$ 500.00
6. Advertising	$ 500.00	$ 500.00	$ 500.00	$ 700.00	$ 700.00	$ 2,900.00
7. Contingency	$ 1,450.00	$ 1,250.00	$ 1,478.40	$ 1,495.00	$ 595.00	$ 6,268.40
Monthly total	$ 15,950.00	$ 13,750.00	$ 16,262.40	$ 16,445.00	$ 6,545.00	$ 68,952.40

We have set the variable cost as $0.30 per customer and earnings as $0.60 per customer. With those numbers, we will break-even 18 months after the project's start. Although it is not represented in the chart below, our total cost and earnings will start to smooth out as we have a maximum number of customers who uses the system.

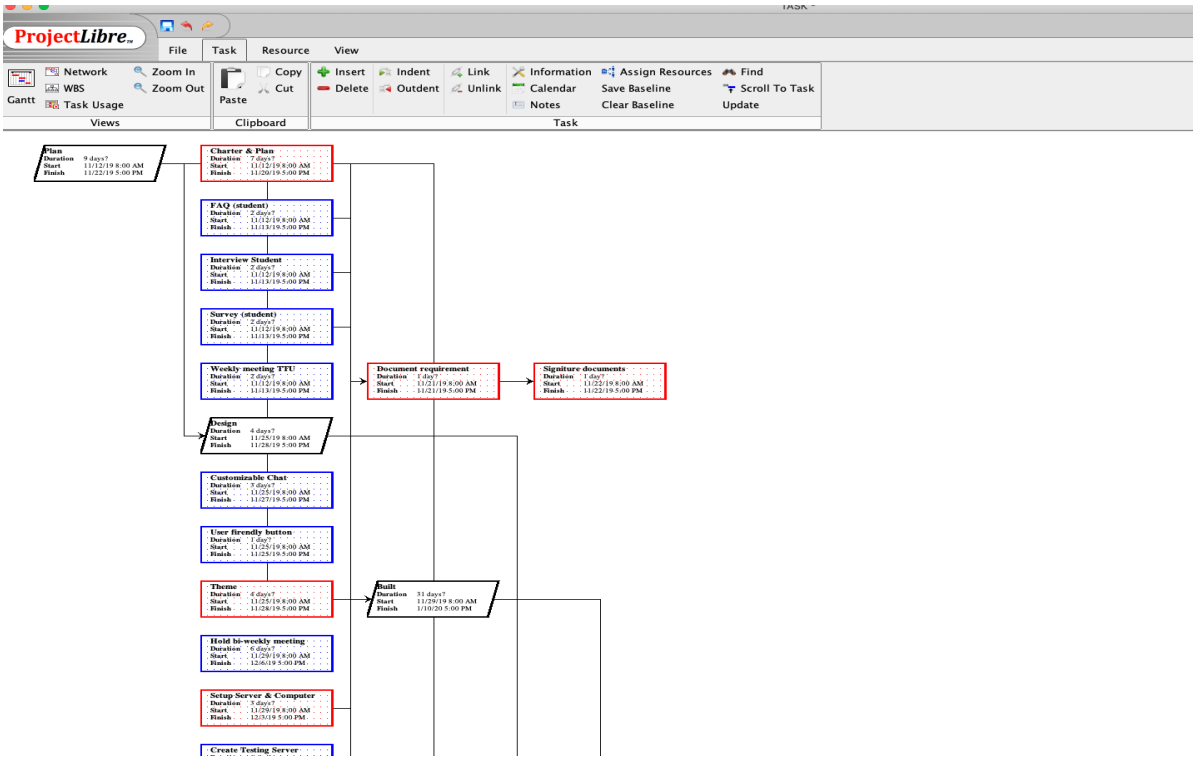


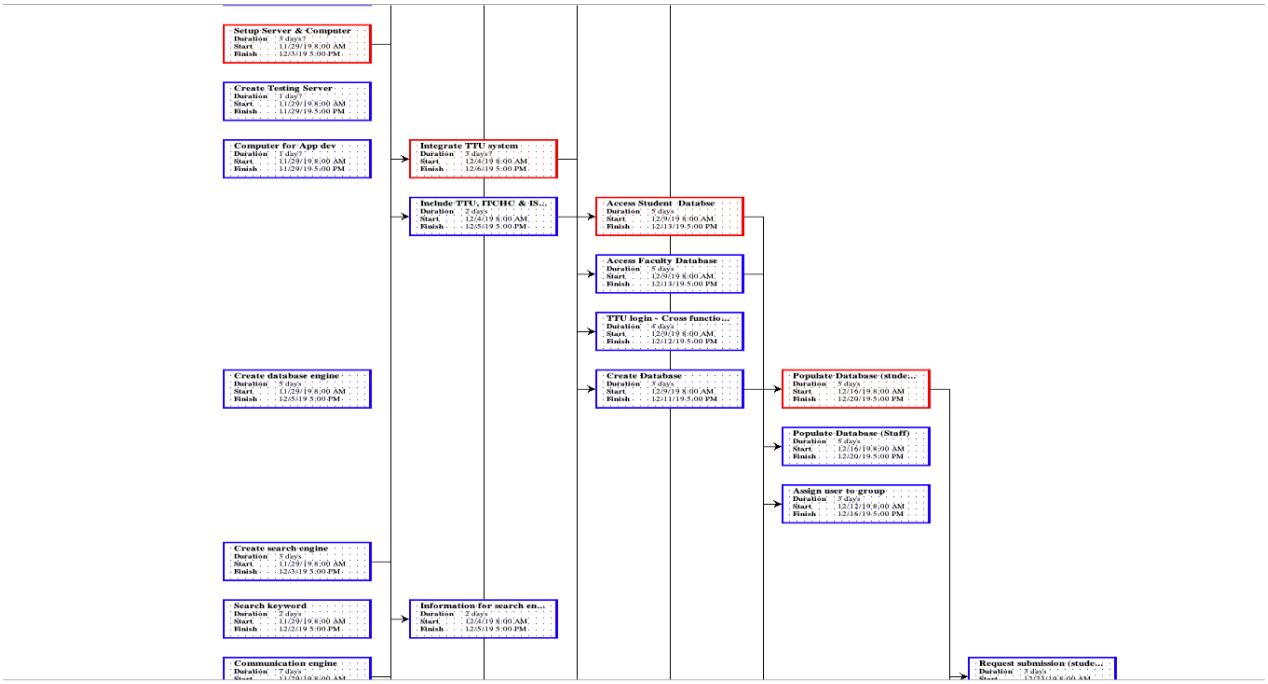
6.6 Time Management Plan

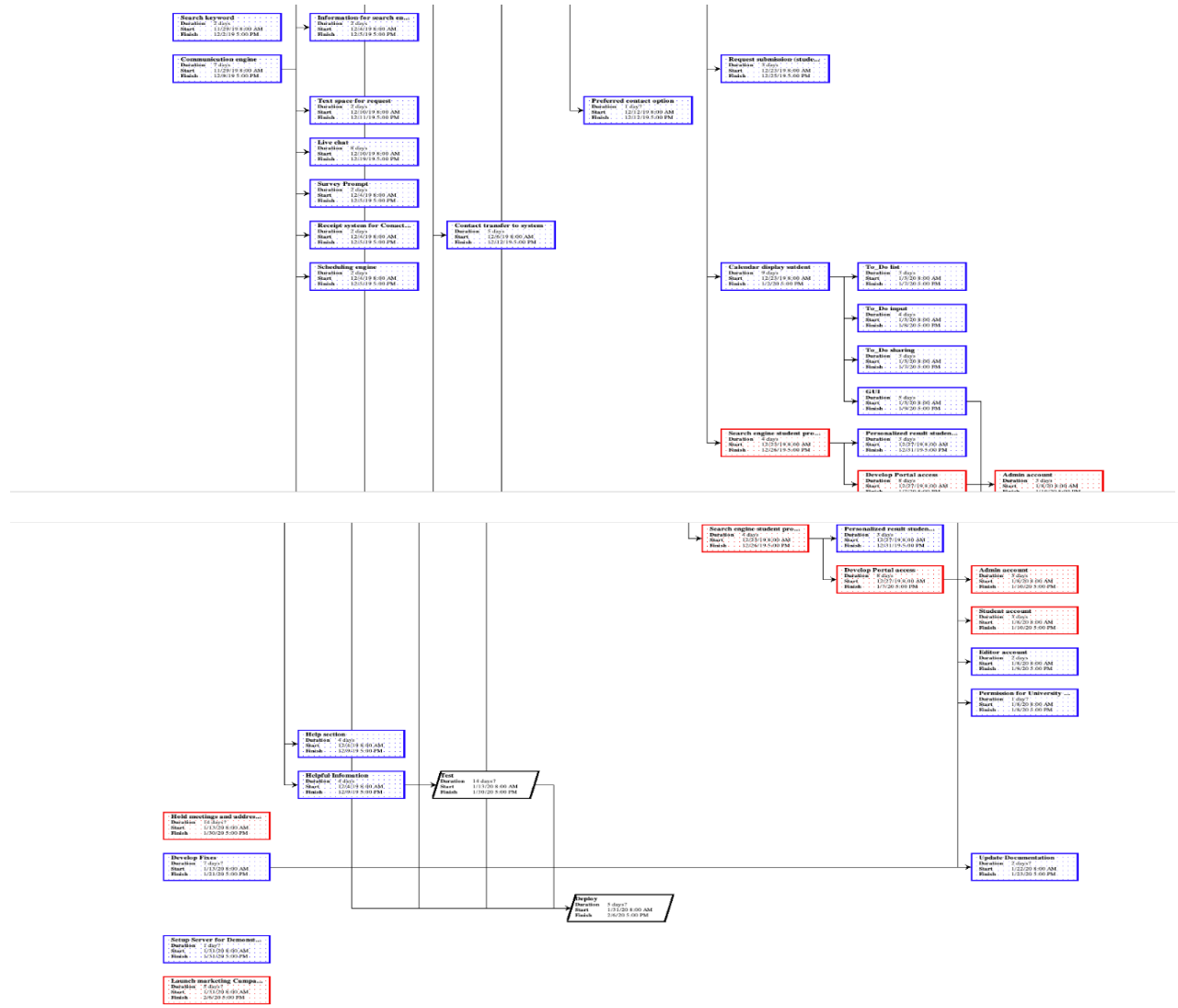
The total project duration is 87 days as its depicted in the Gantt chart and costing $68,952.40 in total. The critical path of the project task is color in red. Each task is placed in an order in a way that accomplishes the whole project life cycle and its phases. There are five phases of the project such as Plan, Design, Built, Test, and Deploy. These phases can be distinguished in the Gantt chart, before the start of every phase there is a black bar, which illustrates the start of a phase. All task has its timeline duration which represents the timeline, connection to another task, and the assignee. The lines and arrow show how tasks are linked; the initiated arrow is predecessor of the pointed arrow task.

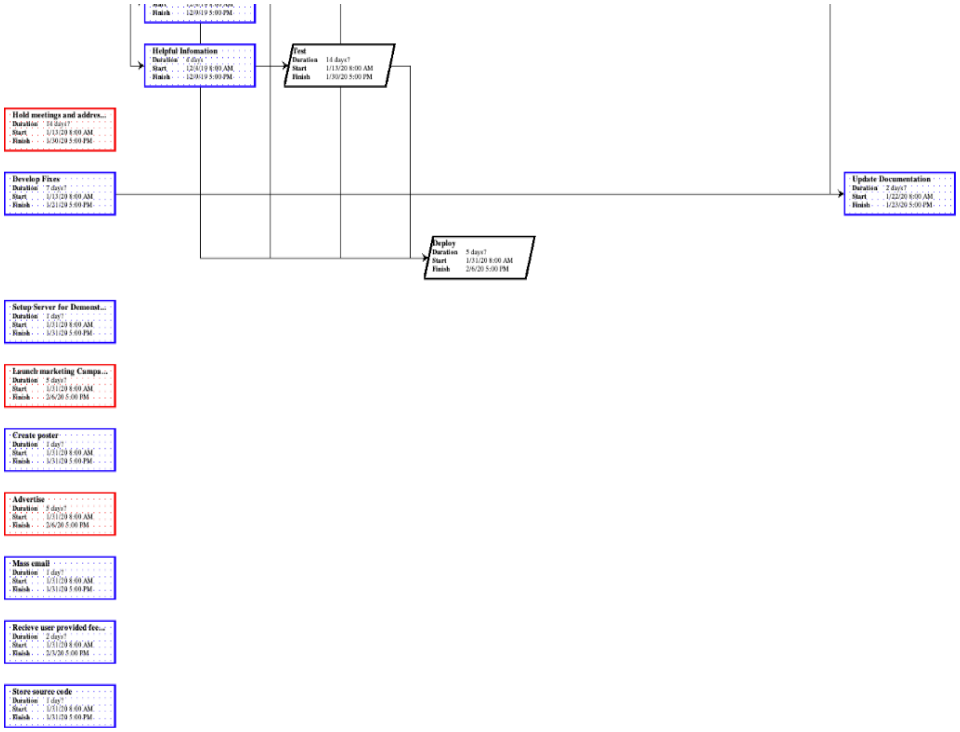
The network diagram chart is a graphical representation of all the tasks, responsibilities and workflow for the project. The chart is depicting a series of different colored boxes and arrows. The project phase is Black, tasks are blue, and the critical path is in red. Each box will have Duration, Start and Finish information. As it's displayed in the chart, our Plan phase is taking 9 days, which is starting on 11/12/19

and finishing on 11/22/19. As that box is linked to Design which shows that we cannot start our Design phase until we finish the most task in our Plan phase



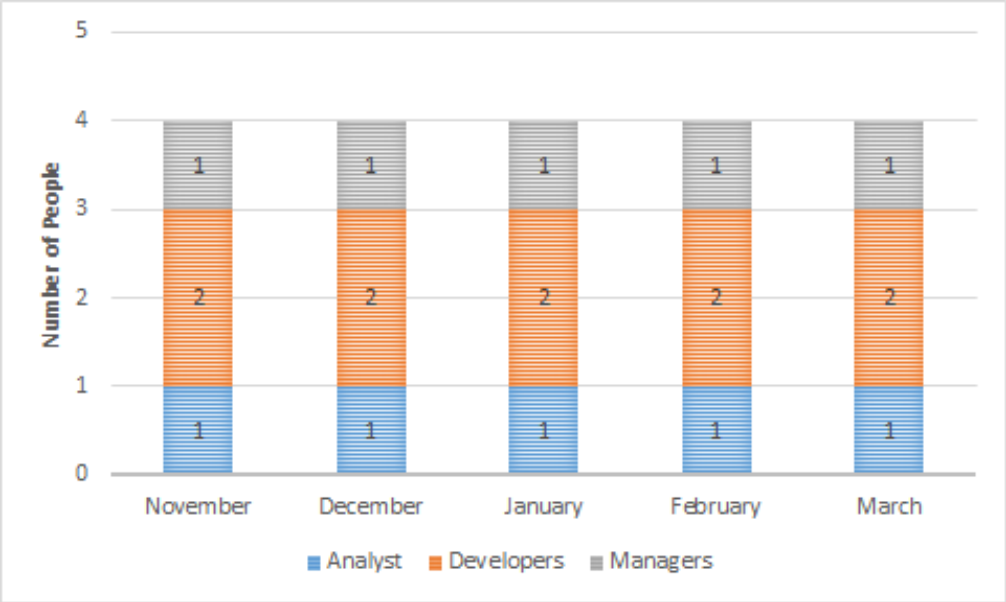



Search keyword
Duration 7 days
Start 11/28/19 8:00 AM
Finish 12/5/19 5:00 PM
Communication engine
Duration 7 days
Start 11/28/19 8:00 AM
Finish 12/6/19 5:00 PM
Information for search en...
Duration 7 days
Start 12/6/19 8:00 AM
Finish 12/5/19 5:00 PM
Text space for request
Duration 7 days
Start 12/10/19 8:00 AM
Finish 12/11/19 5:00 PM
Live chat
Duration 9 days
Start 12/20/19 8:00 AM
Finish 12/18/19 5:00 PM
Survey Prompt
Duration 7 days
Start 12/4/19 8:00 AM
Finish 12/5/19 5:00 PM
Receipt system for Conact...
Duration 2 days
Start 12/6/19 8:00 AM
Finish 12/5/19 5:00 PM
Scheduling engine
Duration 7 days
Start 12/4/19 8:00 AM
Finish 12/5/19 5:00 PM
Contact transfer to system
Duration 5 days
Start 12/6/19 8:00 AM
Finish 12/13/19 5:00 PM
Preferred contact option
Duration 1 day?
Start 12/12/19 8:00 AM
Finish 12/12/19 5:00 PM
Request submission (stude...
Duration 5 days
Start 12/23/19 8:00 AM
Finish 12/25/19 5:00 PM
Calendar display student
Duration 9 days
Start 12/23/19 8:00 AM
Finish 1/3/20 5:00 PM
To_Do list
Duration 5 days
Start 1/3/20 8:00 AM
Finish 1/7/20 5:00 PM
To_Do input
Duration 5 days
Start 1/3/20 8:00 AM
Finish 1/9/20 5:00 PM
To_Do sharing
Duration 5 days
Start 1/3/20 8:00 AM
Finish 1/7/20 5:00 PM
GUI
Duration 5 days
Start 1/3/20 8:00 AM
Finish 1/9/20 5:00 PM
Search engine student pre...
Duration 4 days
Start 12/23/19 8:00 AM
Finish 12/26/19 5:00 PM
Personalized result studen...
Duration 7 days
Start 12/27/19 8:00 AM
Finish 12/31/19 5:00 PM
Develop Portal access
Duration 9 days
Start 12/27/19 8:00 AM
Finish 1/7/20 5:00 PM
Admin account
Duration 5 days
Start 1/8/20 8:00 AM
Finish 1/10/20 5:00 PM
Search engine student pre...
Duration 4 days
Start 12/23/19 8:00 AM
Finish 12/26/19 5:00 PM
Personalized result studen...
Duration 7 days
Start 12/27/19 8:00 AM
Finish 12/31/19 5:00 PM
Develop Portal access
Duration 9 days
Start 12/27/19 8:00 AM
Finish 1/7/20 5:00 PM
Admin account
Duration 5 days
Start 1/8/20 8:00 AM
Finish 1/10/20 5:00 PM
Student account
Duration 5 days
Start 1/8/20 8:00 AM
Finish 1/10/20 5:00 PM
Editor account
Duration 5 days
Start 1/8/20 8:00 AM
Finish 1/8/20 5:00 PM
Permission for University ...
Duration 1 day?
Start 1/8/20 8:00 AM
Finish 1/8/20 5:00 PM
Help section
Duration 4 days
Start 12/4/19 8:00 AM
Finish 12/9/19 5:00 PM
Helpful Infomation
Duration 4 days
Start 12/4/19 8:00 AM
Finish 12/9/19 5:00 PM
Test
Duration 14 days?
Start 1/13/20 8:00 AM
Finish 1/30/20 5:00 PM
Hold meetings and addres...
Duration 11 days?
Start 1/13/20 8:00 AM
Finish 1/30/20 5:00 PM
Develop Fixes
Duration 7 days?
Start 1/13/20 8:00 AM
Finish 1/21/20 5:00 PM
Deploy
Duration 5 days?
Start 1/31/20 8:00 AM
Finish 2/6/20 5:00 PM
Update Documentation
Duration 2 days?
Start 1/23/20 8:00 AM
Finish 1/23/20 5:00 PM
Setup Server for Demonst...
Duration 1 day?
Start 1/31/20 8:00 AM
Finish 1/31/20 5:00 PM
Launch marketing Campa...
Duration 7 days?
Start 1/31/20 8:00 AM
Finish 2/6/20 5:00 PM



6.7 Human Resource Management Plan

Since we are working as a small team that is strictly assigned to this project, we will have no need to compete for human resources to complete our goals. The team will be motivational and supportive to each other throughout all phases so that nobody is felt lesser during the development. We plan to build a very positive climate that allows our team to remain happy and productive until the project is complete. Below is our human resources histogram that will show our roles throughout the entire five months of development during this project:



6.8 Communication Management Plan

All entities involved in the app development will receive feedback, issues, goals, and other relevant information. All documentation will be in-depth, supported by data, and well commented. All levels of the business development will have access to documentation as needed to maintain an open environment during the process. Any developmental changes will be discussed through weekly meetings and emailed documents by the project team. This will include the project manager, development team, and analyst. Any crucial information will be presented to executives through planned conference meetings and detailed presentations. Any changes in development will be communicated through the project team and management to ensure adequate adaptability throughout.

Our methods of documentation and presentations will have easily understandable models and tables that will show relevant information for the current stage of development. The development team will heavily communicate between analyst and management to ensure proper

implementation of requirements. Weekly meetings with the customer will allow for updated requirements that will be included in this documentation process.

Any problems after delivery of the product will be handled by the external maintenance team. During development, the customer will have weekly opportunities to address any concerns with the development team via weekly meetings. Any changes requested during development will be addressed in the following week. If a significant problem should arise, the development team will conduct a more thorough research to decide on steps to fix it.

Documentation deliverables will be produced at every phase of the project. The deliverables will ensure that the customer will be aware of the current overall goals for the project during every step. The source code will be handled strictly by the development team during development and will fully transfer to the maintenance team upon completion. Customer requirements will be communicated weekly through thorough documentation and will be used as an acceptance plan for the finalizing of the project. During development, the customer will be able to view these requirements and decide on any changes. Additionally, the customer will be given weekly demonstrations to ensure that the completed requirements are up to their standards.

Stakeholders	**Schedule**	**Delivery Method**	**Due**	**Contact**
External Management	Weekly	Emailed Documents & Meetings	First of the Week	Joseph
External Maintenance Staff	Weekly	Emailed Documents & Meetings	First of the Week	David, Sue
Development Team	Weekly	Emailed Documents & Meetings	First of the Week	Haider

Analyst	Weekly	Emailed Documents & Meetings	First of the Week	Jessica
External Executives	As Needed	Conference Meetings & Presentations	As Needed	Sam

6.9 Risk Management Plan

The following is a breakdown of the possible risks that may occur during this project's lifetime. The list is ranked in order of impact from greatest to lowest. The ranking of these risks is determined by the probability and potential impact of the risk. Included with these risk factors in the table are a brief description of the risk, the root cause, triggers that lead up to the risk, a brief contingency plan, the risk owner, and the current status of the risk.

No.	Rank	Risk	Description	Category	Root	Triggers	Contingency	Risk Owner	Probability	Impact	Status
R.03	1	Insufficient Funding	Inadequate funding from the customer for development of the TASK will result in missing functionality, and overally failure of the application.	Organizational	Poor budgeting, unexpected errors	Depletion of funds prior to closing of project	Overestimate budget, provide contingency fund	Internal Executives	High: 75%	High: Significant budget increase, Decrease in functionality	Identified
R.02	2	Poor Communication	The inability to properly communication with the development team will result in improper implementation of functions.	Organizational	Poor communication, lack of proper requirement reviews	Failure to analyze requirements and test for proper functionality	expectations for each requirement of the application and test for acceptance of these requirements	Internal Managers	Medium: 45%	High: Decrease in quality, failed expectations	Identified
R.04	3	Scope Creep	requirements may result in scope creep due to unexpected requirement changes and expectations outside of the normal development process for the	Project Management	Overestimated expectation and the want for unreasonable functionality	properly discuss expectations and be informed of the capabilities of the team	Discuss limitations at beginning of project, discuss throroughly before demanding requirements	Haider	Medium: 35%	Medium: May cause tension during development phase, failed expectations	Identified
R.01	4	System Integration Failure	maintenance team is unable to maintain and properly integrate the TASK system into their current system, there may be problems with integration.	Technical	Poor system maintenance, inexperienced team	Customer being unaware of their system and team's capabilities.	Ensure proper steps are taken beforehand to confirm that the TASK system will work with TTU's.	Adam	Low: 5%	High: Complete failure of project, inability to function.	Identified

6.10 Procurement Management Plan

The project manager will be responsible for any acquisition of supplies outside of the initial project team. The decision criteria for accepting contracts will be discussed between the entire development team and the final decision will be made by the project manager. Measurement of

procurement items will need to be strictly managed by the whole development team to ensure coordination, deadlines, and metrics are favorable towards the project.

Due to the nature of this project, there is no need for outside suppliers to be provided to our development team. All budget constraints will be discussed with and handled by the customer based on what they require outside the initially proposed requirements. Because of the lack of need for outside suppliers, there are no legal issues or contractual arrangements that we anticipate on having. Once the application is developed, the maintenance is handed over to the customer so that our team is no longer apart of the project.

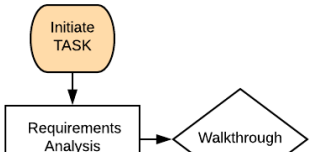
6.11 Stakeholder Management Plan

The following table detail's the relevant stakeholder for the project's lifetime and how they will engage in the project. This will be used for strategic discipline that the project manager will use to sustain support from both internal and external stakeholders identified. The stakeholders mainly consist of the internal TASK team with two main external contacts that will be involved with requirement planning and take part in the many walkthroughs planned throughout the project.

Name	Position	Internal/ External	Project Role	Contact Information
Haider Khan	Project Manager	Internal	Planning, Overseeing, Approves funds, scrum master	Haider.Khan@task.com
Hien Nguyen	PR & Analysis Manger	Internal	Oversees research and development of project	Hien.Nguyen@task.com
Adam Clark	Software Installment Manger	Internal	Oversees actualizing, implementation and installation of program	Adam.Clark@task.com
Soo Min Chae	Software Developer Manager	Internal	Managing the development team, oversees the maintenance and development	Soo.Chae@task.com
Sam Segran	Chief Information Officer	External	Senior Executive, approves project, manage IT team	Sam.Segran@ttu.edu
Matthew Russel	IT manager	External	Oversees the IT team, Ensure tech system and implementation, System audit	Matthew.R@ttu.edu

6.12 Quality Management Plan

Our basic quality standard is less than ten major defects in the first six months and less than five major defects semiannually after the first six months. New information will be reviewed and updated every two weeks. “Help” section will be included for user feedback and information gathering. The plan to assure quality and prevent quality defects is shown in the diagram below. In detail, we will do a walkthrough over the requirements document before we plan the project and assign resources. After project planning, two paths are taken: system architecture and system requirements. Our team will construct the system’s architecture separately to implement requirements. After we design the system architecture, we will do a walkthrough over the overall architecture of the system with all the stakeholders. Then we will collect data to design the database of all the knowledge. We will do a walk through over the database design and the collected data with the stakeholders. Then the system user interface for the app is designed and the whole system’s architecture will be reviewed by our team. After filing system requirements, we will do an additional walk through with the stakeholders. We will then design the system with the requirements followed by a walkthrough. Then we implement the requirements followed by a walk through. Next, the whole team reviews the requirements to verify they were implemented properly. We then start constructing the application and code it. After coding, unit test, integration test, system test, and acceptance tests are performed. The application is delivered to the users and we will follow up with our quality standards with the “Help” section and the bi-weekly meeting of the maintenance team.



7. Signatures

8. Appendices

Appendix A: Project Charter

Proposed Project Name: TTU Application for Student Knowledge **Date:** September 3rd, 2019
Name of person(s) making the submission: Adam Clark, Hien Nguyen, Soo Min Chae, Haider Khan
Problem/Opportunity: Texas Tech's resources are not being used to their full potential by students. Many incoming and new students are not aware of the TTU Student Success & Retention department's help desk; they often are left calling wrong departments and left with no answers to their concerns. Also, students are unaware of many resources that are available for them to use and take advantage of during their time at Texas Tech.
Value Proposition/Goal(s): The goal of this project is to help Texas Tech's resources become more known to the students. We want to create an app where students can easily address their concerns for anything Texas Tech related and find where exactly they need to reach out for additional information if necessary.
Purpose: Our purpose for this app is to help all incoming and current students feel more confident with Texas Tech's support and be aware of the vast amount of resources Texas Tech offers. The use of the app will help users know more about everything that is available to them and be able to easily navigate to the area of their need.
Alignment to corporate strategy: Part of Texas Tech's strategic policy is to "educate and empower a diverse student body". Creating this app for the students will help empower them by introducing to them the vast amount of resources they are provided by Texas Tech, and easily give them information that can be crucial to their education.
Anticipated Deadline for completion: We anticipate having this app completed December 3rd, 2019 and therefor able to be of use for incoming and current students in the Spring 2020 semester.
Success Criteria: This project will be considered a success when most students are aware of the app and can easily navigate and use it to find any resources or information that is offered to them without the hassle of searching for and calling random departments.
Who will use the resulting product? This product will be used by current and future students of Texas Tech.
Consequences of doing nothing: If this app is not developed, the student body of Texas Tech will remain confused and unaware of many different resources that are available for them and continue to frantically search everywhere for their answers with little to no luck.

Assumptions/Risks: When developing this app, we risk it not gaining momentum and the students choosing to not use this app. This means wasted time and the continued confusion of students.
Impediments/obstacles: This app may not be a priority for Texas Tech and therefor denied funding for development which would be an obstacle to overcome.

Appendix B: Previous Deliverables

The following are the project team's original requirements document, project proposal, and project plan with their respective grade sheets preceding them: