IS333

ASSIGNMENT 2

PROJECT MANAGEMENT

AUTOMATED AI

CHATBOT FOR MOH

SEMESTER 1 2021

Source:https://www.proggio.com/wp-content/uploads/2018/05/project-management-wordcloud.jpg

GROUP 4

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CONCEPTUALIZATION

INTRODUCTION

Ministry of Health is one of the departments where thousands of questions are asked every day. In this time of pandemic, people are restricted to come forward to ask basic questions, so the only option left is through technology. Ministry of Health in Fiji is one of the largest and hardworking departments of Fiji. In this twenty first century, digital enhancement is inevitable; therefore, Ministry of Health also needs to update its system in order to improve efficiency and productivity.

Artificial intelligence (AI) is the simulations of human intelligence in machines that have been programmed to think and act like humans (1). The term can also refer to any machine that exhibits human-like characteristics like learning and problem-solving. Because of subsequent technological advancements, the Artificial Intelligence technique is now a common trend that is used in every system. The automated artificial intelligence driven chat is a technique where frequently asked questions are answered automatically through machines like human characteristics. The Ministry of Health is one of the busiest online platforms, especially in the time of this pandemic, which requires about fifty people to stay active online to tackle those questions. This system will eliminate the requirement of fifty people to solve the issue and the same resource (people) can be diverted to other activities.

The automated artificial intelligence driven chat will ease the work. The system will store answers for similar or frequently asked question, which will just require less than five people to monitor the system. This system will work as humans without humans. The development of this project will affirm the knowledge gained from the PMBOK in order to improve and provide a solid foundation in terms of scope management, human resource management, time and risk management, quality and communication management, and financial management. Because the system is developed in a constrained manner, where budget, resources, and time must be gradually monitored to ensure project success, anything related to the project will be directly reported to the assigned project manager. Hence, a plan for the automated artificial intelligence driven chat for the Ministry of Health will be made and followed accordingly.

PROJECT OVERVIEW STATEMENT

Project Overview

The development of the automated artificial intelligence driven chat for Ministry of Health is a step forward to the advanced and digital world for a country like Fiji. Smart devices and applications such as advanced computers and servers will be used to accomplish this task. The completion of this project will be beneficial for the department of health and the country as well. It will reduce the number of people required to do the desired job (Chatting) and divert them to other activities.

Scope Management

The scope statement consists of tasks that must be completed, and it excludes things that are not required to be completed and are left unnamed. Furthermore, the project scope's primary goal is to give extensive and complete explanations of the project's assumptions, restrictions, success criteria, and deliverables.

The building of an Automated Artificial Intelligent-driven chat platform for the Ministry of Health is one of the project's deliverables, and it will be done with the help of the Fijian government's IT team. The portal will be used by all hospitals in Fiji to aid in performance management of the chat portal. The development of the automated artificial intelligent chat includes phases such as planning, designing, development, testing, and implementation; however, the project does not account for future developments and maintenance.

The government IT team will be asked consent to help in the development of the portal, while the estimated number of days that will take to complete the project will be 135 days with the estimated cost of $170,450.

Problems or Opportunities

The goal of this project is to manage a well-structured chat portal for the Ministry of Health that employs Artificial Intelligence (AI) techniques to respond to frequently asked questions. As a result, the automated artificial intelligence system is constructed in such a way that it will assist the health system in answering frequently requested queries. In addition, any uncommon query will be forwarded to an expert by the system. The Ministry of Health is working to raise the standard of its services. This system will cut down on the amount of time it takes to respond to a patient. This device will also monitor and offer the patient with pertinent information.

Project Objective

For the success of the project, the following objectives were set:

1. The AI driven chat portal should able to provide basic information to the patient without any support
2. Should allow the people to interact with the system to gain information
3. To provide people with adequate support to increase the efficiency of the health department
4. Analyse the performance of Ministry of Health

Success Criteria

Success Criteria	✓
Completion within the budget of $170,450	
Completion within the 135 days allocated	
Project Scope met (Project launch and execution)	
Client Satisfied	
Project benefits expected met or exceeded	
Innovative project	
Project is environmentally friendly and has no social and environmental impacts	
Project uses technology	

PROJECT OVERVIEW STATEMENT ATTACHMENTS

Feasibility

A feasibility analysis is a thorough project study that explains the Ministry of Health's strengths, prospects, limits, and dangers, as well as whether the Ministry of Health has the resources, legal wiggle space, and technological capabilities to complete the project as planned (2).

Technical Feasibility

The examination of a project's technical requirements in order to determine what technical resources a project need is known as technical feasibility (3). It refers to the gear and software that will be employed in the project. It is a critical issue since the construction of an automated artificial intelligence-driven chat system necessitates a wide spectrum of hardware and software.

Economic Feasibility

A study is being prepared on the project to determine how long it will take to reach break-even point. It's comparable to a cost-benefit analysis. Each project has a cost, and knowing when to expect a return is important for financial planning. In addition, to estimate the amount of money required to execute the project. This isn't restricted to for-profit projects because they'd still have to pay for things.

Operational Feasibility

Operational feasibility refers to how effectively a project's execution fits within an organization's current business system (4). The answers to a present problem should be as near to a perfect match for the corporate structure as feasible, and they should be able to be adapted to meet additional problems as they arise. It's critical to be able to take advantage of possibilities that arise during the solution's execution to ensure a smoother deployment.

Schedule Feasibility

This determines how long it will take to create the items and whether or not they will be needed in the future.

Before beginning a project, the following questions must be answered: When is the project due? Is the timetable linked to any legal obligations? How long will the project or product be operational? Is it feasible to stick to a schedule?

Legal Feasibility

The Ministry of Health chat portal that needs to be developed to be satisfying the legal criteria. The project management team was able to detect a few threats in the development of an automated artificial intelligent chat platform for the Ministry of Health. The threats that were discovered were classified as higher-level risks, and the project manager will ensure that they are appropriately addressed when the project is being implemented.

Conditions of Satisfaction

Listed below are things that the client (MOH) will require from the team in terms of their behaviour towards the AI chatbot project.

- **Time -** If the project does not complete on time, it may cause trouble on the budget. Therefore, the team will focus on delivering the AI chatbot on time.
- **Budget -** The project should be able to complete on time and on the given budget otherwise the project will be left incomplete. The team is going to ensure resources are used efficiently in order to be in line with the budget given.
- **Communication -** Communication is an essential tool in the completion of the project successfully. The team is going to communicate effectively with the stakeholders and inform then regarding completion of steps towards developing the final product.
- **Scope Creep -** While the project is ongoing, there might be some changes and additions which might affect the completion time and the budget of the project. Hence, we as a team will ensure any changes needed is well responded and every possible action is taken to adhere to the changes.
- **Data loss -** Data is an important feature of the project. In case of any possible data loss, it may terminate the project. There will be backup copies made of the project data in order to prevent data loss.

PLANNING

WORK BREAKDOWN STRUCTURE

WBS In Text Format

1.0 Automated AI driven Chatbot

1.1 Conceptualization
- 1.1.1 Project Overview
- 1.1.2 Assign Project Team
- 1.1.3 project Charter Approval

1.2 Planning
- 1.2.1 Project Team Meeting
- 1.2.2 Scope of Work
- 1.2.3 Prepare WBS
- 1.2.4 Project Timeline
- 1.2.5 Resource Allocation
- 1.2.6 Budget Estimation
- 1.2.7 Risk Management
- 1.2.8 Quality Control

1.3 Execution
- 1.3.1 Manage Project Team
- 1.3.2 Verify & Validate User Requirements
- 1.3.3 Design Chatbot Software
- 1.3.4 Install System
- 1.3.5 Security Implementation
- 1.3.6 Acceptance Testing
- 1.3.7User Testing
- 1.3.8 System Implementation.

1.4 Termination
- 1.4.1 Document Project Review
- 1.4.2 Evaluate Project Goal’s
- 1.4.3 Update Files/Records
- 1.4.4 Project Closure

WBS IN DICTIONARY FORMAT

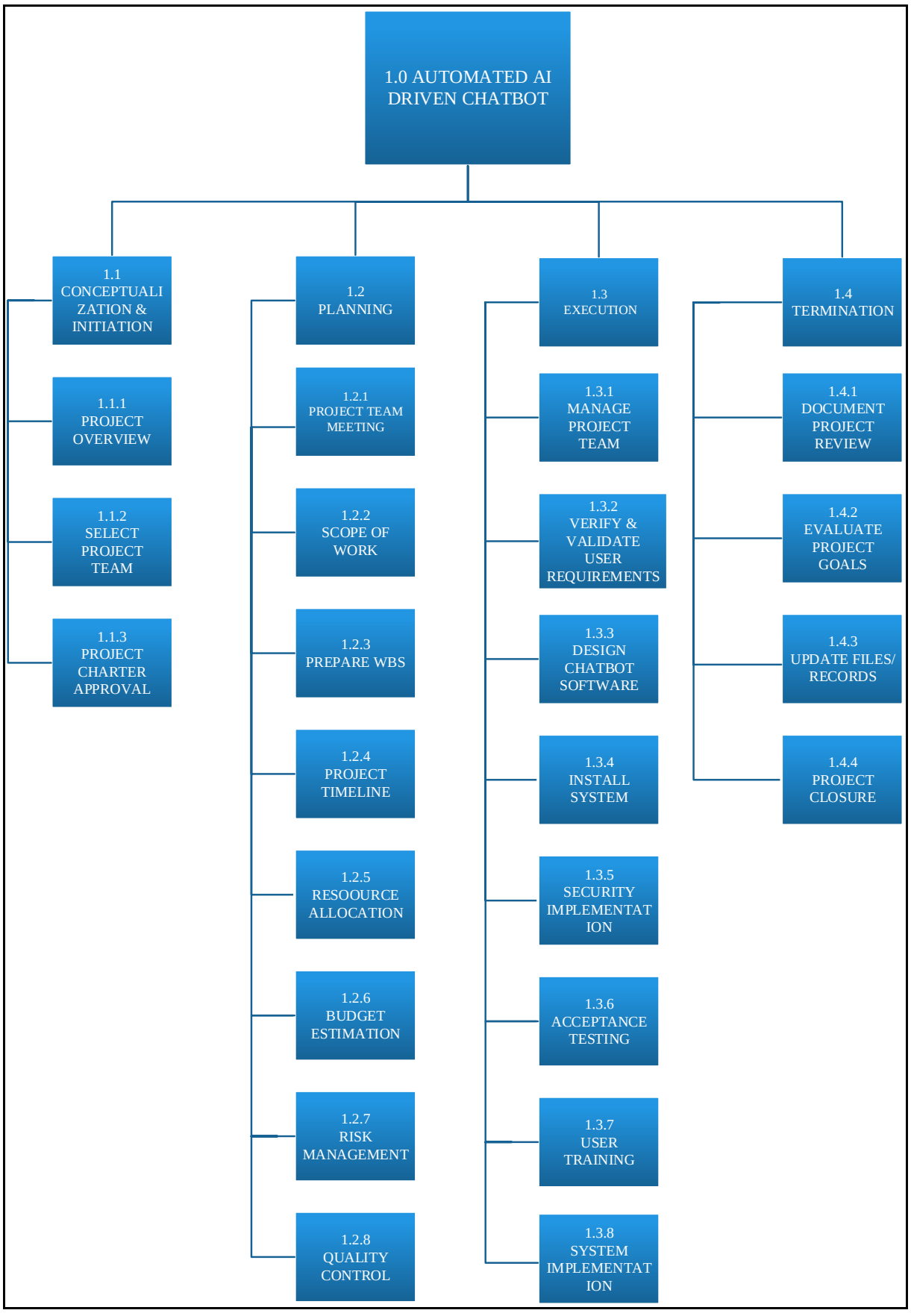
Level	WBS Code	Element Name	Definition
1	1	**Automated AI driven Chat bot**	New project (Automated AI driven Chat bot) is recognised and work starts to implement the system.
2	1.1	**Conceptualization & Initiation**	The work to initiate the project.
3	1.1.1	Project Overview	A Project Overview Statement is developed which documents the importance of implementing this project and potential value to the client after implementing system.
3	1.1.2	Select Project Team	The project manager selects a project team and assigns resources.
3	1.1.3	Project Charter Approval	Project charter is reviewed and approved by sponsor. Project manager to commence with the planning process.
2	1.2	**Planning**	Planning out project work
3	1.2.1	Project Team Meeting	A team meeting is conducted to start off
3	1.2.2	Scope Of Work	The project Manager prepares Scope of work that includes details such as project objectives, project product to name a few
3	1.2.3	Prepare WBS	WBS is developed to outline major activities and resource allocation that is required in the execution of the project.
3	1.2.4	Project Timeline	Project outline of tasks and deliverable from start to finish.
3	1.2.5	Resource Allocation	Resources that are needed to develop the system is identified and allocated to the team.
3	1.2.6	Budget Estimation	The Budget consists of cost estimation incur in developing and completing the project work.
3	1.2.7	Risk management	Involves identifying potential risks, outlining impacts and developing responses.
3	1.2.8	Quality Control	The work involved for the control process of the project.
2	1.3	**Execution**	Execution of the project.

3	1.3.1	Mange Project Team	Tracking team members performance and providing feedback
3	1.3.2	Verify and Validate User Requirements	Involves reviewing the user requirements by project manager and the team. Validated with the users /sponsors.
3	1.3.3	Design Chat bot Software	The technical resources design the new Chat bot Software.
3	1.3.4	Install System	The software is installed in the system.
3	1.3.5	Security Implementation	Security features set-up for allowing access control, authentication and data encryption
3	1.3.6	Acceptance Testing	The system is tested to see if it meets the requirements of the sponsors and whether it is ready to be delivered.
3	1.3.7	User Training	Training needs to be provided to users for better and efficient use of the system.
3	1.3.8	System Implementation	The team installs a system for user interfaces.
2	1.4	**Termination**	The work to terminate the project.
3	1.4.1	Document Project Review	Project Manager and the project team prepares a document that reports whether the team achieved the project objectives and the lessons learned from the project.
2	1.4.2	Evaluate Project Goal's	Analysing the objectives of the project after completion.
2	1.4.3	Update Files/Records	All files and records are updated to reflect the Automated AI chat bot.
2	1.4.4	Project Closure	The Project Sponsor formally accepts the project by signing the acceptance document. Termination report is assigned in by higher authorities.

WBS IN TABULAR FORMAT

Level 1	Level 2	Level 3
1.0 Automated AI driven Chatbot	**1.1 Conceptualization & Initiation**	1.1.1 Project Overview 1.1.2 Select Project Team 1.1.3 Project Charter Approval
	1.2 Planning	1.2.1 Project Team Meeting 1.2.2 Scope of Work 1.2.3 Prepare WBS 1.2.4 Project Timeline 1.2.5 Resource Allocation 1.2.6 Budget Estimation 1.2.7 Risk management 1.2.8 Quality Control
	1.3 Execution	1.3.1 Mange Project Team 1.3.2 Verify and Validate User Requirements 1.3.3 Design Chat Bot Software 1.3.4 Install System 1.3.5 Security Implementation 1.3.6 Acceptance Testing 1.3.7 User Training 1.3.8 System Implementation
	1.4 Termination	1.4.1 Document Project Review 1.4.2 Evaluate Project Goal's 1.4.3 Update Files/Records 1.4.4 Project Closure

WBS IN TREE STRUCTURE



RESOURCE ESTIMATION

SKILLS INVENTORY - STAFF AND SKILLS.

Category	Skills	Staff					
		Jessica *Project Manager*	Sahil *Database Designer*	Sehana *Graphics Designer*	Shania *System Analyst*	Vivek *Software/ System Engineer*	Zakia *Programmer*
Software	Microsoft Office Products - Excel, Word, PowerPoint	▲	▲	▲	▲	▲	▲
	Microsoft Project	▲	▲		▲	▲	
	Microsoft Visual Basic	▲	▲	▲		▲	▲
	API.ai				▲	▲	▲
Programming knowledge	Visual Basic	▲	▲	▲		▲	▲
	Microsoft bot framework			▲		▲	▲
	Ruby					▲	▲
	Java					▲	▲
	PHP					▲	▲
	Database Management Skills	▲	▲		▲		
Website Knowledge	Search Engine	▲		▲			
	Graphics design		▲	▲	▲		
	System designs			▲			
	Testing		▲	▲	▲	▲	▲
Implementation	Programming analysis				▲	▲	
	Networking				▲		▲
	Troubleshooting				▲		
	Security implementation				▲	▲	
	System implementation				▲		
	Language Skills				▲	▲	
Managerial	Research	▲					
	Problem prioritization	▲					
	Human Relations	▲					
	Communication	▲					
Presentation	Effectively delivery	▲	▲	▲	▲	▲	▲
	Documentation	▲	▲	▲	▲	▲	▲
	Able to improvise	▲	▲	▲	▲	▲	▲

NEEDS INVENTORY - ACTIVITY AND SKILLS.

ACTIVITIES	SKILLS																								
	Microsoft Office Products	Microsoft Project	Microsoft Visual Basic	API.ai	Visual Basic	Microsoft bot framework	Ruby	Java	PHP	Database Management Skills	Graphics design	System designs	Testing	Programming analysis	Networking	Troubleshooting	System implementation	Security implementation	Language Skills	Research	Problem prioritization	Human Relations	Analysis	Communication	Documentation	Able to improvise
Conception and Initiation																										
Project Overview																				▲			▲		▲	
Select Project Team																							▲	▲		
Project Charter Approval																						▲	▲	▲	▲	
Planning																										
Project Team Meeting																						▲	▲	▲	▲	
Scope Of Work																			▲	▲			▲	▲	▲	
Prepare WBS	▲	▲																					▲		▲	
Project Timeline	▲	▲																				▲	▲		▲	
Resource Allocation	▲									▲								▲	▲			▲	▲	▲	▲	
Budget Estimation	▲									▲										▲		▲	▲		▲	
Risk management										▲											▲		▲		▲	
Quality Control										▲											▲		▲		▲	
Execution																										
Mange Project Team																			▲		▲	▲		▲	▲	
Verify and Validate User Requirements	▲											▲								▲			▲	▲	▲	
Design Chat bot Software			▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲												
Install System											▲	▲			▲	▲	▲	▲	▲		▲				▲	
Security Implementation											▲	▲	▲	▲	▲			▲	▲				▲		▲	
Acceptance Testing												▲		▲	▲				▲			▲		▲	▲	
User Training														▲	▲			▲	▲			▲		▲	▲	
System Implementation			▲		▲					▲		▲		▲	▲		▲	▲				▲			▲	
Termination																										
Document Project Review	▲																		▲		▲	▲	▲	▲	▲	▲
Evaluate Project Goal’s	▲																		▲		▲	▲	▲	▲	▲	▲
Update Files/Records	▲																						▲	▲	▲	
Project Closure	▲																						▲	▲	▲	

STAFF ASSIGNMENTS

Activities	STAFF					
	Jessica Project Manager	Sahil Database Designer	Sehana Graphics Designer	Shania System Analyst	Vivek Software/ System Engineer	Zakia Programmer
Conceptualisation and Initiation						
Project Overview	▲	▲	▲	▲	▲	▲
Select Project Team	▲	▲	▲	▲	▲	▲
Project Charter Approval	▲	▲				
Planning						
Project Team Meeting	▲	▲	▲	▲	▲	▲
Scope of Work	▲	▲	▲	▲	▲	▲
Prepare WBS	▲	▲		▲		
Project Timeline	▲	▲		▲		
Resource Allocation	▲	▲		▲		
Budget Estimation	▲	▲		▲		
Risk management	▲	▲		▲		
Quality Control	▲			▲		
Execution						
Mange Project Team	▲	▲	▲	▲	▲	▲
Verify and Validate User Requirements			▲	▲		▲
Design Chat bot Software		▲	▲		▲	▲
Install System					▲	▲
Security Implementation			▲	▲	▲	▲
Acceptance Testing				▲	▲	▲
User Training				▲	▲	▲
System Implementation	▲		▲		▲	▲
Termination						
Document Project Review	▲	▲				
Evaluate Project Goal’s	▲	▲	▲	▲	▲	▲
Update Files/Records	▲	▲				
Project Closure	▲	▲				

TASK DURATION ESTIMATION

Task No.	Task ID	Task Name	Optimistic	Likely	Pessimistic	Duration	Predecessors
		Conceptualisation & Initiation					
1	A	Project Overview	3	4	5	4	-
2	B	Select Project Team	1	2	3	2	A
3	C	Project Charter Approval	1	2	3	2	B
		Planning					
4	D	Project Team Meeting	1	2	3	2	C
5	E	Scope of Work	2	4	5	4	D
6	F	Prepare WBS	3	4	5	4	E
7	G	Project Timeline	3	4	5	4	F
8	H	Resource Allocation	2	3	4	3	G
9	I	Budget Estimation	8	9	10	9	H
10	J	Risk management	3	4	5	4	I
11	K	Quality Control	8	9	10	9	J
		Execution					
12	L	Manage Project Team	2	3	4	3	J, K
13	M	Verify and Validate User Requirements	9	10	11	10	L
14	N	Design Chat bot Software	14	15	16	15	M
15	O	Install System	8	9	10	9	M, N
16	P	Security Implementation	10	11	12	11	O
17	Q	Acceptance Testing	7	8	9	8	M, P
18	R	User Training	5	6	7	6	Q
19	S	System Implementation	10	11	12	11	R
		Termination					
20	T	Document Project Review	4	5	6	5	R, S
21	U	Evaluate Project Goal’s	2	3	4	3	S, T
22	V	Update Files/Records	3	4	5	4	U
23	W	Project Closure	2	3	4	3	V

Duration Estimation Technique

An effective way to estimate duration is using Beta distribution PERT method. This technique uses a 3-point mathematical derivation formula to calculate activity duration.

Formula: [a+4(m)+b]/6 where (a= Optimistic Duration, + (4 X m= Most Likely Duration), + b= Pessimistic Duration)/ 6.

The optimistic duration takes into consideration the shortest time to complete activities with all known variables to affect performance. The pessimistic duration is given if the performance of an activities does not go as expected. The most likely time in which the activity has the greatest possibility of occurrence without affecting performance.

If duration of tasks is estimated; it helps the project manager to identify critical components of the project, to determine the critical paths and know how long each task will take to complete and reach the next milestone.

Project Duration Dates

Conceptualisation and Initiation = 8 days

Planning = 39 days

Execution = 73 days

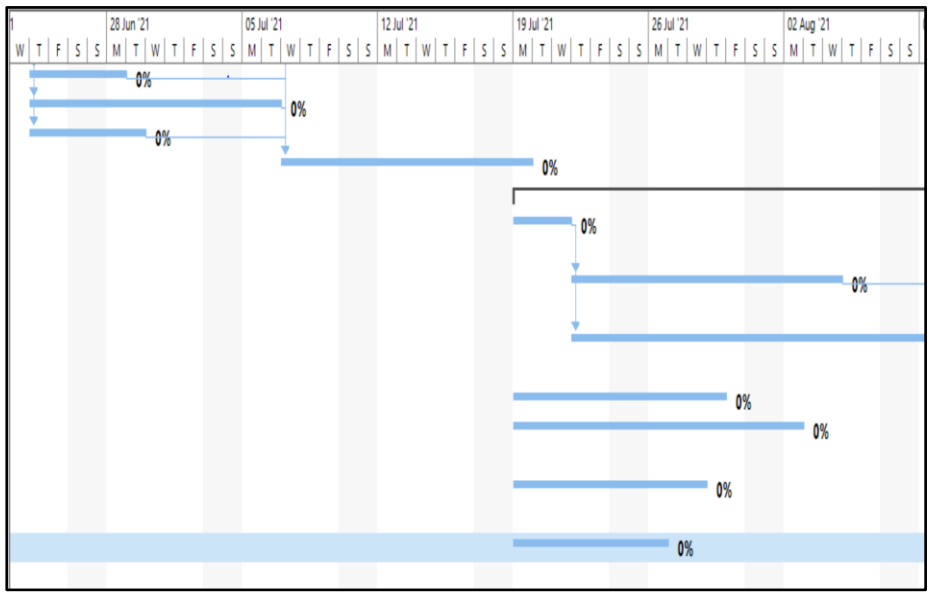
Termination = 15 days

Total duration = **135 days**

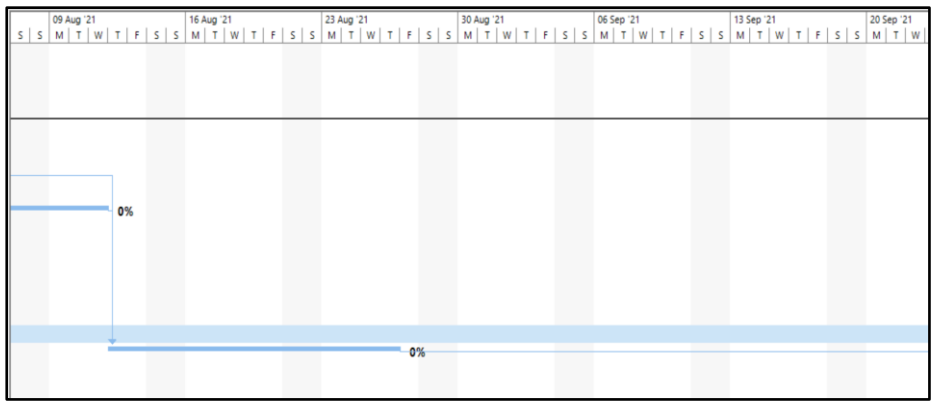
Start Date: 2nd June 2021

End Date: 17th November 2021

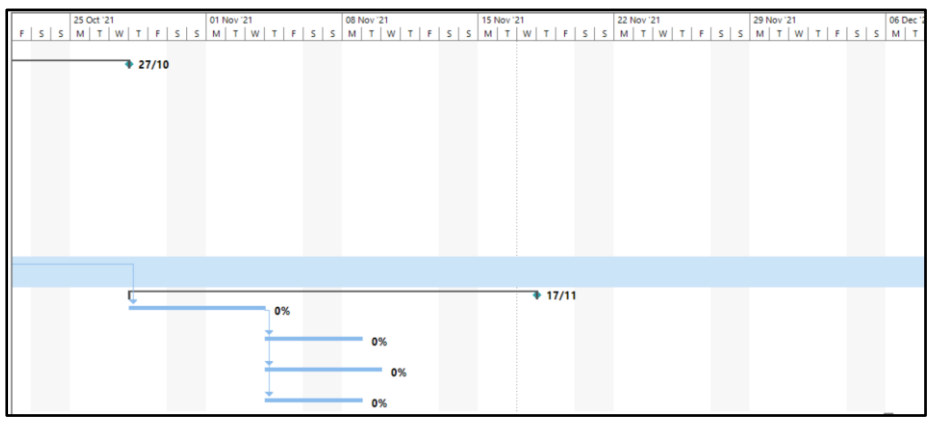
GANTT CHART



	Task Name	Duration	Start	Finish	Predecessors
1	**Conceptualization and Initiation**	**8 days**	**Wed 02/06/21 8:00 am**	**Fri 11/06/21 5:00 pm**	
2	Project Overview	4 days	Wed 02/06/21 8:00 am	Mon 07/06/21 5:00 pm	
3	Select Project Team	2 days	Tue 08/06/21 8:00 am	Wed 09/06/21 5:00 pm	2
4	Project Charter Approval	2 days	Thu 10/06/21 8:00 am	Fri 11/06/21 5:00 pm	3
5	**Planning**	**39 days**	**Mon 14/06/21 8:00 am**	**Mon 19/07/21 5:00 pm**	
6	Project Team Meeting	2 days	Mon 14/06/21 8:00 am	Tue 15/06/21 5:00 pm	4
7	Scope of Work	4 days	Mon 14/06/21 8:00 am	Thu 17/06/21 5:00 pm	4
8	Prepare WBS	4 days	Fri 18/06/21 8:00 am	Wed 23/06/21 5:00 pm	6,7
9	Project Timeline	4 days	Thu 24/06/21 8:00 am	Tue 29/06/21 5:00 pm	8
10	Resource Allocation	3 days	Thu 24/06/21 8:00 am	Mon 28/06/21 5:00 pm	8
11	Budget Estimation	9 days	Thu 24/06/21 8:00 am	Tue 06/07/21 5:00 pm	8
12	Risk management	4 days	Thu 24/06/21 8:00 am	Tue 29/06/21 5:00 pm	8
13	Quality Control	9 days	Wed 07/07/21 8:00 am	Mon 19/07/21 5:00 pm	9,10,11,12



	Task Name	Duration	Start	Finish	Predecessors
13	Quality Control	9 days	Wed 07/07/21 8:00 am	Mon 19/07/21 5:00 pm	9,10,11,12
14	**Execution**	**73 days**	**Mon 19/07/21 8:00 am**	**Wed 27/10/21 5:00 pm**	
15	Mange Project Team	3 days	Mon 19/07/21 8:00 am	Wed 21/07/21 5:00 pm	
16	Verify and Validate User Requirements	10 days	Thu 22/07/21 8:00 am	Wed 04/08/21 5:00 pm	15
17	Design Chat bot Software	15 days	Thu 22/07/21 8:00 am	Wed 11/08/21 5:00 pm	15
18	Install System	9 days	Mon 19/07/21 8:00 am	Thu 29/07/21 5:00 pm	
19	Security Implementation	11 days	Mon 19/07/21 8:00 am	Mon 02/08/21 5:00 pm	
20	Acceptance Testing	8 days	Mon 19/07/21 8:00 am	Wed 28/07/21 5:00 pm	
21	User Training	6 days	Mon 19/07/21 8:00 am	Mon 26/07/21 5:00 pm	
22	System Implementation	11 days	Thu 12/08/21 8:00 am	Thu 26/08/21 5:00 pm	16,17
23	**Termination**	**15 days**	**Thu 28/10/21 8:00 am**	**Wed 17/11/21 5:00 pm**	
24	Document Project Review	5 days	Thu 28/10/21 8:00 am	Wed 03/11/21 5:00 pm	22
25	Evaluate Project Goal's	3 days	Thu 04/11/21 8:00 am	Mon 08/11/21 5:00 pm	24
26	Update Files/Records	4 days	Thu 04/11/21 8:00 am	Tue 09/11/21 5:00 pm	24
27	Project Closure	3 days	Thu 04/11/21 8:00 am	Mon 08/11/21 5:00 pm	24



PROJECT BUDGET

COST ESTIMATION

Non-human resource costing

Resource	Average Price/Unit
Equipment	$45,000
Stationary	$10.00
Software	$25,000
TOTAL	$70,010

Human resource costing

Staff.	Title.	Salary (Hourly)	Total Hours	Total Labor cost.
Jessica Vandhana	**Project Manger**	**$35.00**	**380 hrs.**	**$13,300**
Sahil Sharma	**Database Admin**	**$25.00**	**370 hrs.**	**$9,250**
Sehana Bano	**Graphics Designer**	**$25.00**	**330 hrs.**	**$9,500**
Shania Maharaj	**Systems Analyst**	**$25.00**	**380 hrs.**	**$8,250**
Vivek Singh	**Software/ System Engineer**	**$30.00**	**380 hrs.**	**$11,400**
Zakia Khan	**Programmer**	**$32.00**	**350 hrs.**	**$11,200**
Total Labor Cost	**HOURLY NEEDED X HOURLY RATE**			**$62,900**

Per Activity Cost

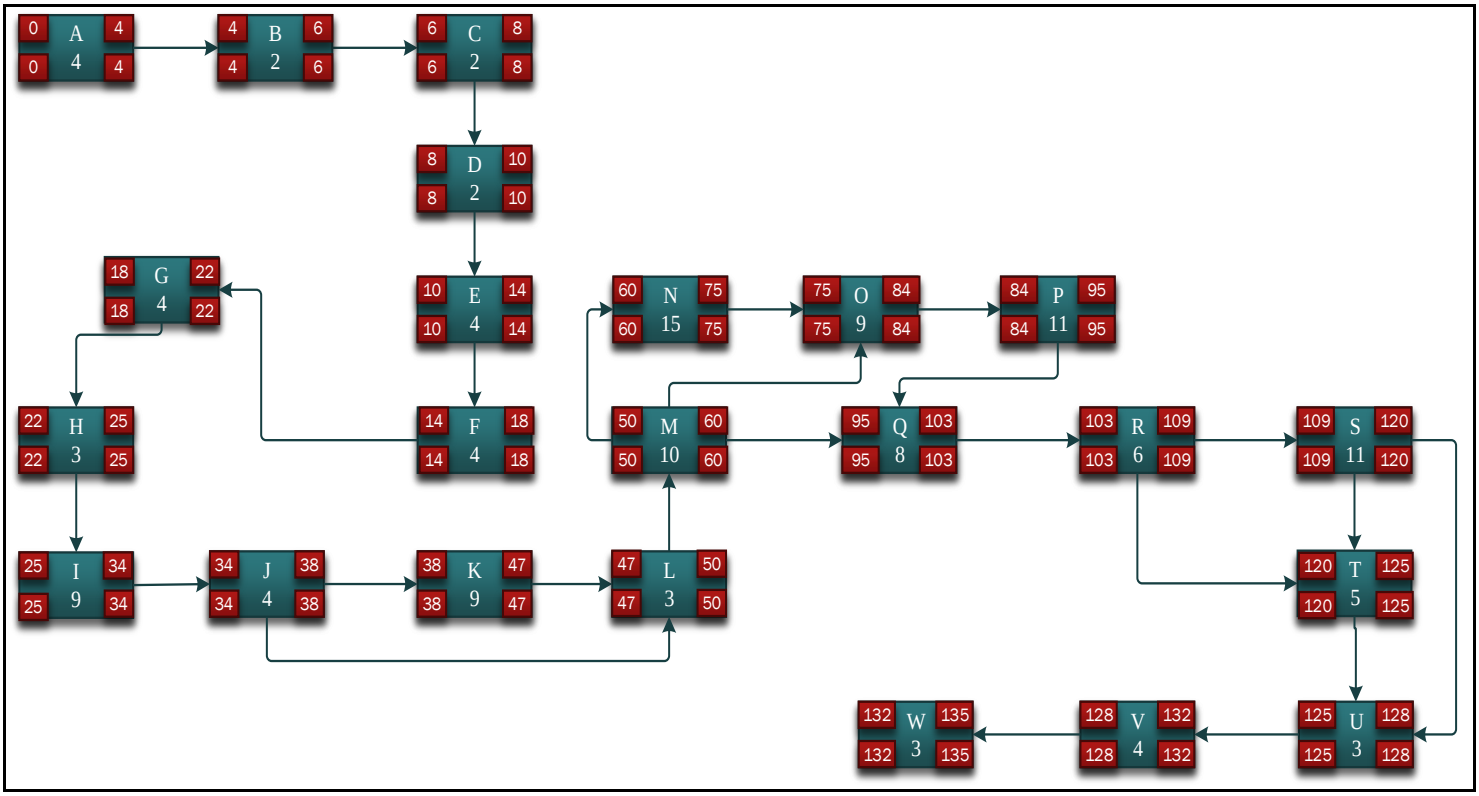
Task Name		Total
Conception and Initiation		**$1600.00**
Project Overview	$440.00	
Select Project Team	$440.00	
Project Charter Approval	$720.00	
Planning		**$9,920.00**
Project Team Meeting	$440.00	
Scope of Work	$720.00	
Prepare WBS	$1720.00	
Project Timeline	$1720.00	
Resource Allocation	$720.00	
Budget Estimation	$1720.00	
Risk management	$2160.00	
Quality Control	$720.00	
Execution		**$21,140.00**
Mange Project Team	$1720.00	
Verify and Validate User Requirements	$2950.00	
Design Chat bot Software	$2950.00	
Install System	$2950.00	
Security Implementation	$2950.00	
Acceptance Testing	$2950.00	
User Training	$1720.00	
System Implementation	$2950.00	
Termination		**$4880.00**
Document Project Review	$720.00	
Evaluate Project Goal's	$720.00	
Update Files/Records	$1760.00	
Project Closure	$1760.00	
Total		**$37,540.00**

Budget summary

Budget summary of Automated Chatbot	
TASK	COST
Conception and Initiation	**$1600.00**
Planning	**$9,920.00**
Execution	**$21,140.00**
Termination	**$4880.00**
Non-human resource costing	**$70,010**
Human resource	**$62,900**
Total Cost	**$170,450**

PROJECT NETWORK DIAGRAMS

ACTIVITY ON NODE DIAGRAM

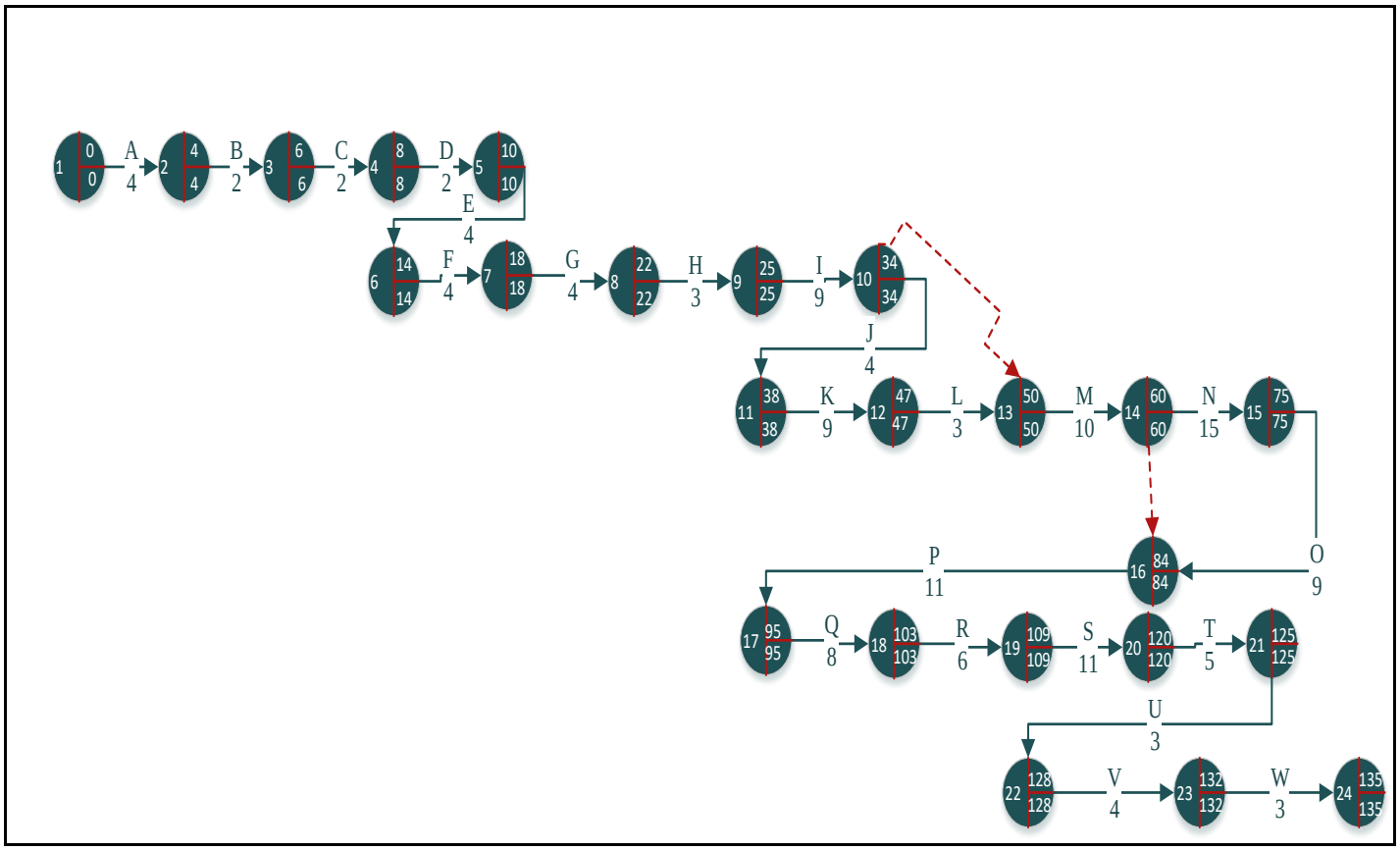


DISTINCT PATHS

	PATH	DURATION
1	**A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W**	**135**
2	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, U, V, W	130
3	A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, T, U, V, W	119
4	A, B, C, D, E, F, G, H, I, J, K, L, M, O, P, Q, R, S, T, U, V, W	120
5	A, B, C, D, E, F, G, H, I, J, K, L, M, O, P, Q, R, S, U, V, W	115
6	A, B, C, D, E, F, G, H, I, J, K, L, M, O, P, Q, R, T, U, V, W	109
7	A, B, C, D, E, F, G, H, I, J, K, L, M, Q, R, S, T, U, V, W	100
8	A, B, C, D, E, F, G, H, I, J, K, L, M, Q, R, S, U, V, W	95
9	A, B, C, D, E, F, G, H, I, J, K, L, M, Q, R, T, U, V, W	89
10	A, B, C, D, E, F, G, H, I, J, L, M, N, O, P, Q, R, S, T, U, V, W	126
11	A, B, C, D, E, F, G, H, I, J, L, M, N, O, P, Q, R, S, U, V, W	121
12	A, B, C, D, E, F, G, H, I, J, L, M, N, O, P, Q, R, T, U, V, W	110
13	A, B, C, D, E, F, G, H, I, J, L, M, O, P, Q, R, S, T, U, V, W	111
14	A, B, C, D, E, F, G, H, I, J, L, M, O, P, Q, R, S, U, V, W	106
15	A, B, C, D, E, F, G, H, I, J, L, M, O, P, Q, R, T, U, V, W	100
16	A, B, C, D, E, F, G, H, I, J, L, M, Q, R, S, T, U, V, W	91
17	A, B, C, D, E, F, G, H, I, J, L, M, Q, R, S, U, V, W	86
18	A, B, C, D, E, F, G, H, I, J, L, M, Q, R, T, U, V, W	80

Critical Path: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W = 135 Days

ACTIVITY ON ARROW DIAGRAM



PROJECT RISK

Risk Technique

Assumption analysis technique was used to determine the potential risks and the risks associated with each activity. The team members identified and documented all assumptions to the project based on uncertainty. The risks are proportional to the impacts on the project's duration and the project objectives. Thus, the project team made preferably consistent assumptions by gathering information from previous similar projects.

Activity	Risk %	Activity	Risk %
A		M	
B		N	
C		O	
D		P	
E		Q	
F		R	
G		S	
H		T	
I		U	
J		V	
K		W	
L			

Key:

Low Risk	0%-3%	
Moderate Risk	4%-6%	
High Risk	7%-10%	

RISK IDENTIFICATION

Risk Type	Risk Category
Lack of communication, causing lack of clarity and confusion.	Technical (Software)
Unplanned work that must be accommodated.	Execution
Pressure to arbitrarily reduce task durations and or run tasks in parallel which would increase risk of errors	Execution
Estimating and/or scheduling errors.	Legal and Financial
Legal action delays or pauses project.	Legal and Financial
Customer refuses to approve deliverables/milestones or delays approval, putting pressure on project manager to 'work at risk'	Technical (Software)
Delay in earlier project phases jeopardizes ability to meet fixed date. For example, delivery of just in time materials, for conference or launch date.	Execution
Theft of materials, intellectual property or equipment.	Legal and Financial
Project design and deliverable definition is incomplete.	Technical (Software)
Added workload or time requirements because of new direction, policy, or statute.	Execution

RISK MITIGATION

Risk avoidance is where an alternative strategy is created in order to accomplish a project (5). For example, drug testing is done on team members in order to avoid any potential risks.

Risk sharing involves teaming up with other organizations in order to share the risk that may come upon completing an activity (6). Such as outsourcing a certain task would allow the team to share the risk.

Risk transfer is a method of shifting the risk of a project from an existing party to another party (6). An example is where purchasing of insurance allows transferring of risk to from the project team to the insurance company.

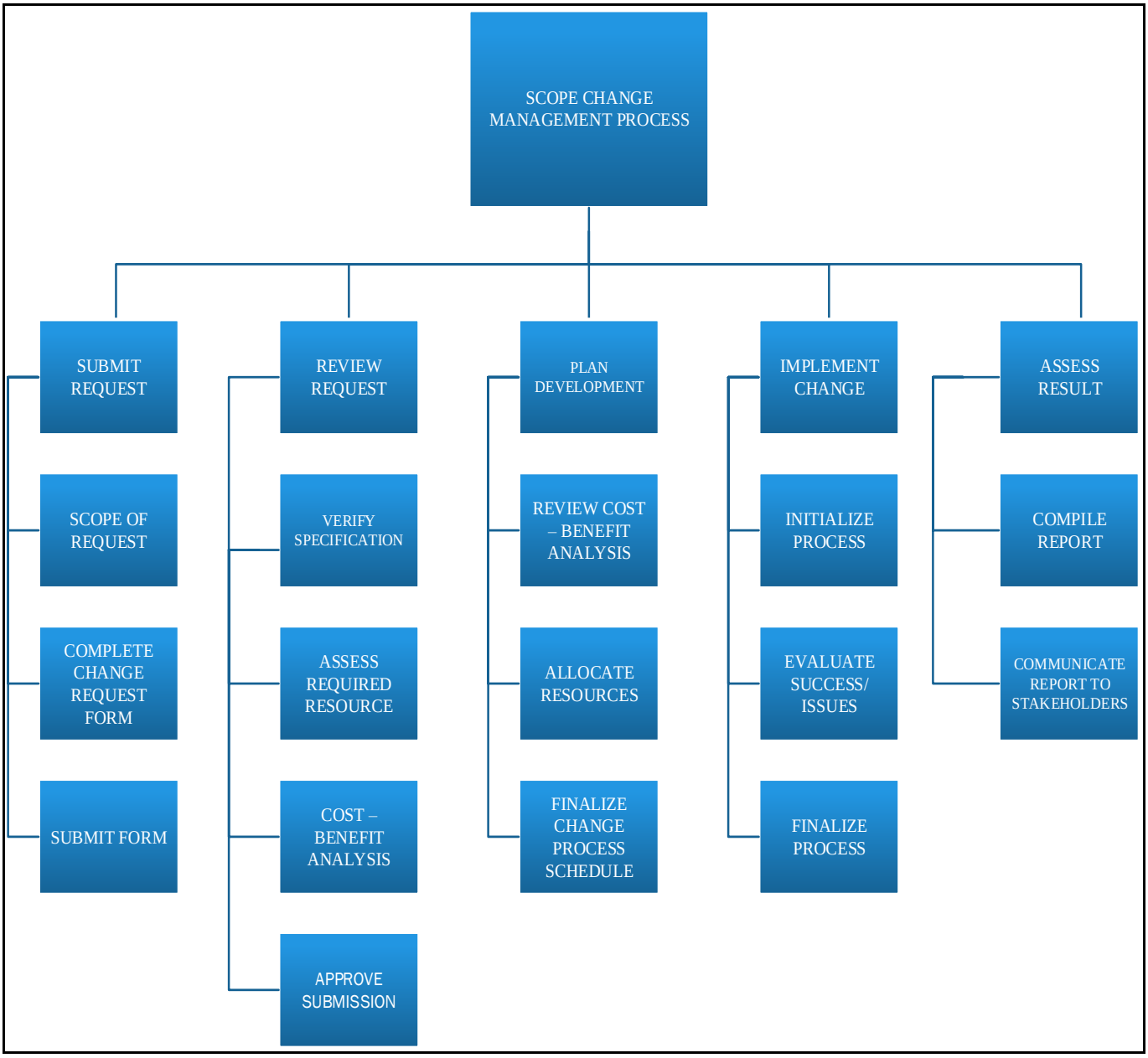
EXECUTION

SCOPE CHANGE MANAGEMENT PROCESS

Scope Change Management Process (SCMP) is a step-by-step procedure that assists in managing, controlling and documenting unforeseeable circumstances that will result in changing important aspects of a project (5). A project scope is basically an outline of project goals, tasks needed to achieve goals, product of development, tasks deadlines and project budget. Therefore, if there is a change in the scope of the project, a process should be set as to how it will be undertaken by the stakeholders. A few reasons as to why the scope of a project changes are; (i) change in business needs; (ii) proper project planning was not done or a shareholder did not engage efficiently; (iii) risk realization (iv) changes in project resource; (v) change in project budget and (vi) alterations in project scheduling (6). If MOH will require a change in the scope then our team has set out a process which can be used to efficiently implement the change.

Upon realizing that MOH has a change needed in the project, a request change form will be made available to them to fill out the details of the change needed. The change requested in the scope will be reviewed by our team. In the review, we will verify the specifications, assess required resources and do a cost-benefit analysis. The development of the change will then be processed, resources will be evaluated and allocated such as budget and staffs. The change implementation will then be scheduled. The change required will be initialized by the team with proper monitoring. Upon completion of the change, the results will be assessed, reports complied and will be communicated to the relevant stakeholders.

A graphical analysis of the scope change management process is depicted below.


SCOPE CHANGE MANAGEMENT PROCESS
SUBMIT REQUEST
SCOPE OF REQUEST
COMPLETE CHANGE REQUEST FORM
SUBMIT FORM
REVIEW REQUEST
VERIFY SPECIFICATION
ASSESS REQUIRED RESOURCE
COST – BENEFIT ANALYSIS
APPROVE SUBMISSION
PLAN DEVELOPMENT
REVIEW COST – BENEFIT ANALYSIS
ALLOCATE RESOURCES
FINALIZE CHANGE PROCESS SCHEDULE
IMPLEMENT CHANGE
INITIALIZE PROCESS
EVALUATE SUCCESS/ ISSUES
FINALIZE PROCESS
ASSESS RESULT
COMPILE REPORT
COMMUNICATE REPORT TO STAKEHOLDERS

TEMPLATE CHANGE REQUEST FORM

CHANGE REQUEST FORM			
PROJECT NAME		DATE	
PROJECT MANAGER		CONTACT	
REQUESTED BY		REQUEST #	

CASE FOR CHANGE			
PROPOSED CHANGE			
REASON FOR CHANGE			
INTENDED OUTCOME			
ESTIMATED TIME FRAME			
ESTIMATED COST			
PRIORITY	☐ HIGH	☐ MEDIUM	☐ LOW
APPROVED	☐ YES	☐ NO	APPROVED BY

TEAM CHARTER

Background

Ministry of Health (MOH) requires an automated driven chatbot that is capable in answering frequently asked questions. They have hired our organization for developing the AI chatbot. A 6-member team was created where each member has skills and knowledge in a specific field that will enable the team to efficiently develop the AI chatbot. In this time of Covid-19 crisis, many people are calling up for enquiries and answering each call is a tedious task. Therefore, this AI chatbot will make things easier for MOH by letting Artificial Intelligence answer questions for them.

Objectives

The team is setting out to achieve an automated chatbot which will be able to answer frequently asked questions at the Ministry of Health. The progress of the project will be recorded and measured whilst moving towards the accomplishment of the project. With the high level of skills and expertise available with the team members, the objectives of the project of creating an automated chatbot is attainable. It will be relevant in creating the automated chatbot as its significance level is high. It will be able to make a difference in serving the public efficiently. The project has a time bound therefore is expected to be completed in 135 days and working. Hence, the objective of the project is said to be SMART (Specific, Measurable, Attainable, Relevant and Time-bound).

Roles and Responsibilities

Team Member	Roles	Responsibilities
Jessica Vandhana	Project Manager	Accountable for project scope, project team, resources and the outcome of the project
Sahil Sharma	Database Administrator	Store and organize data. Database design, backup and data recovery. Manage database access
Sehana Bano	Graphics Designer	Develop overall layout for AI chatbot and design advertisements for public awareness about the new system of asking questions.
Shaniya Maharaj	Systems Analyst	Develop cost analysis. Assess MOH's needs and analyse it to come to a solution.
Vivek Singh	Software/System Engineer	Improve system quality, develop standard operating procedures. Write software program for the automated chatbot.
Zakia Khan	Programmer	Write code for the automated chatbot program. Debug, and troubleshoot errors in the system for smooth running of the program.

Communication

Communication amongst the project team is very important as it will allow every person to be on the same page as the other. It is essential to pass information relating to the project in an effective manner. Therefore, the project team will use the social media platform to communicate easily with other. A Viber group will be created where all the necessary announcements will be made. Emails will be used to communicate in a formal manner amongst the team members and with the stakeholders.

Norms

Norms is basically the expected behaviour of the team members with each other. Conflicts will be solved by the team manager using the conflict resolution policy of the firm. Every team member is expected to have respect for other member of the team. It has been decided that as long as the project runs, every month the team will have a small informal meet such as in a bar. This will be to boost the communication and social gaps. Good relationships in the work place will make communication effective and managing the project easier.

Ethical behaviours Expected by the Team

Ethics is where the moral code of conduct guides the behaviour of team members in a workplace in differentiating between right and wrong in terms of conduct and decision making (7).

Every team member has to be **honest** to the team members and with their work. The team has to show honesty in terms of delivering the right product to MOH. While the employees should be honest with their roles in the team. They should give their best by staying focused.

Every member of the team has to be **responsible** with the tasks assigned. Team members have to be responsibly completing tasks assigned on time and with professionalism. Every team member has to establish oneself as a valuable employee and a dependable co-worker by being responsible at work.

It is utmost important to have **respect** for each and every one related to the project. Team members have to treat each other and the stakeholders with kindness and politeness. In order to show respect, all members view point and ideas should be listened to. People with different gender, social, religious and economic background should be treated the same.

PROJECT PERFORMANCE & REPORTING SYSTEM

Expected Reports	Member Responsible	Deadline
Team Availability Report	Project Manager: Jessica Vandhana	08/06/21
Project Timeline Report	Systems Analyst: Shaniya Maharaj	24/06/21
User Requirements Report	Graphics Designer: Sehana Bano	01/08/21
Database Design Report	Database Administrator: Sahil Sharma	16/08/21
Security Implementation Report	Systems Analyst: Shaniya Maharaj	05/09/21
Functional Testing and User Acceptance Report	Software Engineer: Vivek Singh	13/09/21
User Training Report	Software Engineer: Vivek Singh	19/09/21
System Implementation Report	Programmer: Zakia Khan	30/09/21
Project Documentation Report	Entire Team	12/10/21

TERMINATION

Project name: Automated AI driven chatbot for frequently asked questions at MOH
Project Manager: Jessica Vandhana

Document Date: 11th July 2021

PROJECT SUMMARY			
Start date:	2nd June 2021	**Completion Date:**	**17th November 2021**
Project Duration:	**135 days**		

PROJECT OBJECTIVES
To develop a chatbot system that can provide streamline interactions between people and MOH. At the same time provide benefits of instant availability by communicating queries and provide the support they need.

PROJECT DELIVERABLES

	Provide an online interface for the public to have frequently asked questions answered quickly
	Provide a platform for quires of different nature to be addressed
	Ensure the chat is fully online
	Reduce human interaction
	To provide reliable answers
	Installation and testing of new hardware and software
	Create a database of problems (frequently asked questions) with solutions for future use (database development)
	Server installation
	Ensure the chat is collaborative
	Provide a software that works well

POST-IMPLEMENATION AUDIT

POST-IMPLEMENATION AUDIT		CHECK
	Ensure the project was completed given the timeframe	✓
	The project was done within the allocated budget	✓
	The hardware and software used were compliance and integrated effectively	✓
	Chat system tested successful	✓
	Tasks documented	✓
	Feedback of the users to be taken into consideration for upgrading	✓
	Copyright for the chat system	✓
	Deliverable agreement signed	✓
	Achievement of the goals and objectives	✓

RECOMMENDATION

To recommend, the Automated AI driven chatbot made for the MOH/general public is an easy and effective tool. It provides a platform for communication without movement. During this time, covid virus is spreading rapidly due to the movement among people. With the help of this Automated AI driven chatbot, the general public has a safe way of reaching out to the MOH for clarification of issues. Furthermore, it also saves time and creates and database of situations that can be analysed to determine which areas the public is more concerned about in future. The Automated AI driven chatbot system designed by the team can further be made better upon public demand and holds places for change. Encouraging the virtual chatbot system will not only answer queries but work for the nation from the comfort of homes.

A new information we recommend to MOH that we can add in the future to improve the efficiency of the proposed Automated AI chatbot is training chatbots about COVID-19 related symptoms and verified updates. Recent research data has uncovered new symptoms. Therefore, it is important to provide the necessary information out to the general public with least interaction. Software developers can integrate these details into the training data to enable the bot to understand the user's concern and provide accurate assessments any time. This will add value to the chatbot system that has been developed for MOH.

Recently, Google Cloud launched an AI chatbot called Rapid Response Virtual Agent Program to provide information to users and answer their questions about coronavirus symptoms. Google has also expanded this opportunity for tech companies to allow them to use its open-source framework to develop AI chatbots. (Google Cloud,2020)

PROJECT OVERALL

Development of an Automated AI driven chatbot was an agreement between our client MOH and our service provider specifically in enhancing communication between people and the service. The Project Manager, Miss. Vandhana was assigned to lead the team in any undertakings from start to finish.

Furthermore, a project charter was documented that includes the scope, objectives, and stakeholders to name a few. It was prepared and submitted to the sponsors for approval. The manger proceeded with the project once it was formally approved. The team formulated the project plan which outlined tasks and deliverable from start to finish. A work breakdown structure was developed to outline major activities and resource allocation that is required in the execution of the project. A Budget was prepared that consisted of cost estimation incur in developing and completing the project work without going overboard with the expenses.

Moreover, other necessary activities were planned out to help in easier communication of work and execution of the project.

Additionally, the project was expected to be completed within 135 working days as per our estimation duration where it would commence on 2nd June 2021 and expected to be complete on 17th November 2021.

In summation, procurement of all required process and documenting all reports for automated AI chatbot for MOH, it was ready for final approval before execution. Once that was done the project was carried out as per plan under the supervision of Ms Vandhana with her team members Mr. Sharma, Ms. Bano, Ms. Maharaj, Mr. Singh and Ms. Khan

CONCLUSION

To sum up, it can be stated that designing an Automated AI driven chatbot at MOH online is an important task. In order to accomplish the set objectives of the project and develop a successful project with customer satisfaction at the end of the day, we need a dedicated project team and a leader. The team should follow the process of project life cycle to be able complete the administered task. Every member typically offered coordination thus balancing the load across the project development.

Automated AI driven chatbot for MOH is a project that was undertaken by our team in which all members were responsive in overarching the project needs. Every member typically offered coordination thus balancing the load across the project development which is inclusive of unit testing, integration testing, risk management, report writing and so forth.

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TEAMWORK

Group 4 Members

Name	Student ID
Vivek Singh	S11170925
Zakia Khan	S11174707
Shaniya Maharaj	S11170826
Sahil Sharma	S11171335
Sehana Bano	S11157318
Jessica Vandhana	S11171472

Team Member Responsibilities

Member	Responsibilities
Jessica Vandhana	Create project deliverables report. Audit upon completion of the project in order to know success gained. Recommend a better information system
Sahil Sharma	Identify the scope of the project. Create objectives for the team. Guide to meet the conditions of satisfaction.
Sehana Bano	Make network diagrams for the ease in understanding which activities should be completed when. Identify slack days with early and late schedule in case more time is needed.
Shaniya Maharaj	Create the work breakdown structure for the ease in completing the project through processes. Come up with risk management plan for the team.
Vivek Singh	Create the change management process plan to follow in case stakeholders need to have a change in the project outcomes. Outline ethical behaviours expected from the team members. Come up with expected reports needed from the team members.
Zakia Khan	Estimate the need for resources such as staffs and skills they should have. Outline the duration of every task in order to meet the due date. Create the project budget.

Code of Conduct

Every member of the team has to be honest with their work. As per our meetings, it was outlined that copying is prohibited. All members should respect each other. The objective of the team is to come up with a project of fine work. It was important that every member was professional with their behaviours. Proper communication was encouraged at all times.

Team Issues

- Due to the ongoing Covid-19 pandemic, we were required to complete the project at our homes however, not able to meet and discuss was an issue.
- Not everyone in the team had access to laptops and computers therefore, completing the project was challenging.
- As everyone are at home in this pandemic, the network is extremely poor which causes hinderance in researching.
- It was hard getting access to MS project to make the Gantt chart. Therefore, a similar application was used (Project Plan 365).

Decision Making

The decisions made in the project team was after consultation from all the members. Tasks distribution was done according to how a member would feel comfortable in doing. The assignment was divided equally among the members.

IS333 Project Management Semester 1, 2021

Assignment 2 Mark Allocation Agreement

After having discussed as group, we recommend the following mark allocation to each group member based on contribution or lack of it throughout the assignment.

Member ID	**Percentage of assignment 2 marks**
S11170925	100%
S11174707	100%
S11170826	100%
S11171335	100%
S11157318	100%
S11171472	100%

Signed Member name	ID	Signature
VIVEK SINGH	S11170925	VSingh
ZAKIA KHAN	S11174707	ZKhan
SHANIYA MAHARAJ	S11170826	SMaharaj
SAHIL KANT SHARMA	S11171335	SSharma
SEHANA BANO	S11157318	SBano
JESSICA VANDHANA	S11171472	JVandhana