BAIT3153 Software Project Management

ASSIGNMENT 202109

Project Title   :   Blood Donation System

Programme   :   RSD

Tutorial Group   :   2

Declaration

- I confirm that I have read and complied with all the terms and conditions of Tunku Abdul Rahman University College's plagiarism policy.

- I declare that this assignment is free from all forms of plagiarism and for all intents and purposes is my own properly derived work.

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		100%		

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Analysis current business processes / background

The project is mainly to develop a web-based blood donation system for our NGO client (Medical Center). The current business process is that the donor must go to the medical center to make an appointment. You will be asked to show your IC card and you will read some information about blood donation after that a form related to basic eligibility will be given, for example, you must be healthy and feel good, you must be at least 16 years old, and you must weigh at least 49kg. We will ask for your full address. Your address needs to be complete. If the donor meets the requirements, the clerk will help the donor register by recording the donor's information in a thick book. Then, the doctor will conduct a pre-donation assessment to the donor. If the person is eligible, he will be asked to go to the blood donation area , and the medical laboratory technician will mark blood bags and blood tubes and process the donations. If the donation is completed, the medical laboratory technician will record the details of the donation, label the bag, and issue a donation card to the donor through manual document filing processes.

The current process does not add value to the business and helps the organization achieve its business needs and the stakeholder's desires because the process is manual, which will slow down the whole process especially during busy times. Not only that, the current process cannot be analyzed and produce useful reports due to paperwork hard to analyze.

Issues of the current business processes and proposal solution

Problem   :The current business process is costly, inefficient and ineffective, because the process is completed through manual document filing processes, which may result in the input of incorrect data, hard to make changes, access time, lack of security, higher cost, difficult to read and management of data is difficult. In addition, donor applications must go to the medical center to make an appointment.

Solution :to solve those problems is to implement a computerised business processes online blood donation system that can avoid paper storage costs. Digital storage is inexpensive, especially when compared to traditional workflow. Enhanced security to keep sensitive data protected, easy document retrieval hence it can increase the productivity, better backup and disaster discovery of donor's information because include a data backup and disaster recovery plan, with the digital archiving as a backup, user data are protected from fire and flood, and other disasters. Donors can either go to the centre to make appointments or make appointments online.

The Goals and Objectives of the project

Goal	Objective
The blood donation system is to create a system to replace manuals with computerization, improve service workflow efficiency and reduce service costs. Donors can make appointments online.	The blood donation system is to manage the details of blood, donor, blood group,blood bank, stock.it manages all the information about blood. The project is built for the administrative end and donor. The purpose of the project is to build an web based application program to reduce the manual work for managing blood,donor and etc.it track all the details of the business workflow. Reduce time costs through computerization, etc.

Establish stakeholders requirement   Title and contents are using the same font size.

A stakeholder is some of the individuals, teams, or organizations who may affect or be influenced by the blood donation system. It is important to evaluate and collect pertinent information about their requirements because it is possible to affect the success of the blood donation system. In the blood donation system, the stakeholders may be patients, the public, blood donation centers, and so on. Following are the stakeholder and their requirements.

Patients/Donee: The donee has the right to receive no infection and healthy blood through the blood donation system from any place in Malaysia. They can view the details of the blood except for the details of the donors. If the blood type is unavailable, the donee will be immediately added to the blood donee list following the sequence. When there is an emergency case, the blood will be provided to those who need it first. View and modify the personal information.

Public/Donor: The public is able to register as a donor and the donors are able to view the detailed event of the blood donation at the blood donation system. They also are able to make requests for blood donation by using the blood donation system. The information of the donors is not able to be viewed by others.View and modify the personal information.

Employee: The employee can view all the information of the donors and patients. They are able to insert the new record when the donors make the new donation. They also can view the stock of the blood and decide what blood type that they need. View and modify the personal information. Check the schedule that had been assigned by the manager.

Manager: The manager can view all the reports produced by the blood donation system and be able to modify schedules and appointments. View and modify the employee details and assign which employee handles the donor or donee.

Nurse   Dr.

Project scope

Project Scope		
Title:	Blood Donation System	**Date**:11/11/2021
Project Description	The blood donation system will be used as donors can register for appointments, select the available time from the schedule and the donor information is recorded automatically. The staff will be able to use other functions of the system such as check appointments and so on. The blood donation system will be the creation of a user friendly web based application. The application will automate the process or business workflow of the donation process. ✓	
Project Objective	To create a system to replace manuals with computerization, improve service workflow efficiency and reduce service costs. Donors can make appointments online.The blood donation system is to manage the details of blood, donor, blood group,blood bank, stock.it manages all the information about blood. The project is built for the administrative end and donor. The purpose of the project is to build an web based application program to reduce the manual work for managing blood,donor and etc.it track all the details of the business workflow. Reduce time costs through computerization, etc. ✓	

Cost Estimate

Category	Item	Quality	Price	Total
Hardware and services	*PC and other components	5	Rm3500	RM17,500
	*Server	2	Rm15,000	RM30,000
	*Cable Installation	2	RM800	RM1400
	*Software Licenses	1	RM2000	RM2000
	*Router	2	RM1000	RM1000
	*Printers	2	RM1000	RM2000
	*Cabling or wireless LAN, WAN or other network devices	1	RM5000	RM5000
System Training	Software Training	-	RM3000	RM3000
Labor	Labor cost estimate	-	-	RM77,121
Total				RM139,021

Assumptions	**Resource** 1)End users will be available to test during the time they agree to 2)Training places/ rooms will be available at the training center when needed 3)All the equipment and materials needed such as a server will be obtained and available to be used when running the project. 4)Throughout the project life cycle, the people participating in the project may not be in good healthy status, because illness and fatigue may lead to inefficient project execution. It may not be possible to assume that all relevant workers will work efficiently throughout the project life cycle. 5)All workers involved at the initial of the project will stay in the project until the project is finished. But it should be noted that during the entire project life cycle, workers may withdraw from the project. 6)During the running of the project, the project team members are able to apply the tools they need to perform their jobs on time, for instance such as advanced equipment and software, and electricity during working hours. However, these possible tools may not be enough for everyone to access. **Budget** 1)The cost of purchasing and maintaining resources will be kept within the project manager's planned budget. But, if the resource fails or depreciates , the budget may over the actual cost estimate because it requires repair costs. 2)The salary cost of the personnel involved in the project will be within the expected range. But , Under certain circumstances,, when the deadline is nearly, salary costs will increase because it requires staff to OT. 3)When purchasing, the cost of materials, equipment and resources for the project will remain unchanged. However, since the market price is usually not fixed, it may exceed or reduce in the market price. **Technology**

1)Using the software development process module of the project will be able to meet the needs and requirements of stakeholders.

2)The project system is compatible in the existing environment, the function is able to work and is stable, and the project is proceeding smoothly.

3)All data in the database has been automatically updated, and all information in the database has been synchronized.

Methodology

1)Project will follow team governance guidelines and requirements

2)Project will follow evolutionary prototype methodology throughout execution.

Schedule

1)All employees and workers can efficiently complete their tasks within the planned timetable.

2)The supplier will deliver the hardware on time. However, there may be delays in the delivery process that do not arrive as planned. Especially during the restriction period of mco.

3)All related stakeholders will attend the meeting as scheduled. However, there may be situations where stakeholders cannot participate due to some reason.

4) The timetable of the expected project can be met, and the project will be completed within the planned time frame.

Quality

1)All employees involved in the project have good qualities for the skills required for the project. However, due to differences in skills, training and experience of workers, the quality of their work may resonate differently.

2)Throughout the project life cycle, the quality of all hardware and other materials (such as servers, PCs, cables, routers) is in good condition. However, for certain materials or hardware, the quality of the device may be reduced, which affects its working status.

3)The delivered software will have basic reliability, maintainability, security, functionality, and usability.

Constraints	**Time Constraint**
	● Project must be completed within 6 month (175 days.) and these constraints are dependent on the scope of the project and also the amount of resources available to work on the project. ✓
	Cost Constraint
	● Project must develop within a budget of RM130,000 , the amount of money required to complete the project. The cost of the project is dependent on the labor cost, risk associated with the project and the scope of the project. The bigger the scope of the project, more resources are required and therefore the cost will be higher.
	● Spend too much cost to hired experience manpower
	● Project must develop with quality deliverable
	Resource Constraint
	● No enough manpower
	● Manpower may not have enough experience ✓
	Quality Constraint
	● If delivery time is delayed , the project costs will also increase and quality will very likely decrease. ✓
	● If the scope of the project delay because of scope creep, the project may not have the resources and time to deliver the promised quality

Exclusion	- Only install the system at the main branch of the hospital. The scope of the system installation project is limited to this branch . All other branches of the organization are excluded from the scope. The administrator will install and configure the system, this person should not install other systems in this project. - This system only provides management of all matters related to blood donation, and other donations are not within the scope. - When the system is fully delivered, the maintenance of the system are excluded from the scope , if requested they will be charge further - Only one time installation services will be provided. - Want an improved and enhanced performance of the system are excluded from the scope , if requested they will be charge further - Want support in case if any problem occurs, post installation services are excluded from the scope , if requested they will be charge further

Task Dependencies

Task ID	Task Description	Predecessor	Duration	Date
1	Feasibility Study	None	20 days	15-11-21 to 10-12-21
2	Initiation	1	12 days	13-12-21 to 28-12-21
3	Gather Requirement	2	21 days	28-12-21 to 26-1-21
4	Analysis Requirements and System Analysis	3	18 days	27-1-21 to 23-2-21
5	Build Prototype and Evaluation Iteration	4	60 days	24-2-21 to 19-5-21
6	Iteration user evaluation	5	20 days	20-5-21 to 17-6-21
7	Refine Prototype	5	17 days	25-5-21 to 17-6-21
8	Testing	7	15 days	17-6-21 to 7-7-21
9	Deployment and maintenance	8	9 days	8-7-21 to 20-7-21

Project Dependencies

- Project will start after the sponsor has prepared enough funds to implement this project.
- Software application development cannot start before collecting the requirements.
- Testing team depends on the development team to deliver the product to test.
- Deployment of the new system needs to be done after the testing is finished.

Work Breakdown Structure (WBS)

1.0. Blood Donation System

1.1 Feasibility Study

1.1.2 Cost Benefits Analysis

1.1.3 Technical Feasibility

1.1.4 Project Objective,Scope,Constraints,Assumptions

1.2 Initiation

1.2.1 Evaluation and suggestion / current problem face

1.2.2 Produce project charter ✓

1.2.3 Project Sponsor Review Project Charter

1.2.4 Project Charter Approved

1.3 Define Requirement

1.3.1 Define user requirement

1.3.2 Define system requirements

1.3.3 Define content requirements

1.3.4 Define server owner requirement

1.3.5 Deliver requirements documentation

1.4 Analysis Requirements

1.4.1 Gathering business requirements

1.4.2 Use cases analysis

1.4.3 Process modeling

1.4.4 Data modeling

1.5 Build prototype and Evaluation Iteration

1.5.1 Purchase hardware and software

1.5.2 Install Development System

1.5.3   Project kick off meeting

1.5.4   Designing the IT infrastructure

1.5.5   Designing the system model

1.5.6   Website design

1.5.7   User interface design

1.5.8   Database design

1.5.9   Development of IT infrastructure

1.5.10 Development of database and code

1.5.11 Deliver first prototype

1.6 Iteration user evaluation

1.6.1 user feedback,suggestion,comments

1.7 Refine Prototype

1.7.1 refine version prototype according to the user's feedback and suggestions until satisfaction prototype

1.8 Testing

1.8.1 Requirement analysis

1.8.2 Test planning

1.8.3 Test case development / writing scenario

1.8.4 Execute and record result

1.8.5 Acceptance test

1.9 Deployment and maintain

1.9.1 Data migration

1.9.2 Software and hardware Installation

1.9.3 User Training

1.9.4 Go Live

Prepare Communication Plan

Description	Purpose	Frequency	Method	Audience	Owner
Kickoff Meeting	- Introduce about the project - Discuss about goals and objectives of the project	Once at the start of the project	Meeting	- Project Team - project sponsor	Project Manager
Project Team Meeting	- Review status of the project - Discuss any potential issues	Weekly	Meeting	Project Team	Project Manager
Milestone Review Meeting	- Update about project deliverable - Gather feedback - Discuss about project next step	Weekly	Meeting	Project Team	Project Manager
Technical Design Meeting	Discuss and develop the technical design solutions for the project	When needed	Meeting	Project Team	Project Manager
Project Status Meeting	- Report the status of the project - Report any issues about the project	Daily	Meeting	Project Team	Project Manager

How the meeting can be conducted? Offline?

15

Lessons Learned Meeting	- Review and celebrate about the project - Discuss about improvements for future projects	Once at the end of the project	Meeting	Project Team	Project Manager

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Project Organization Chart
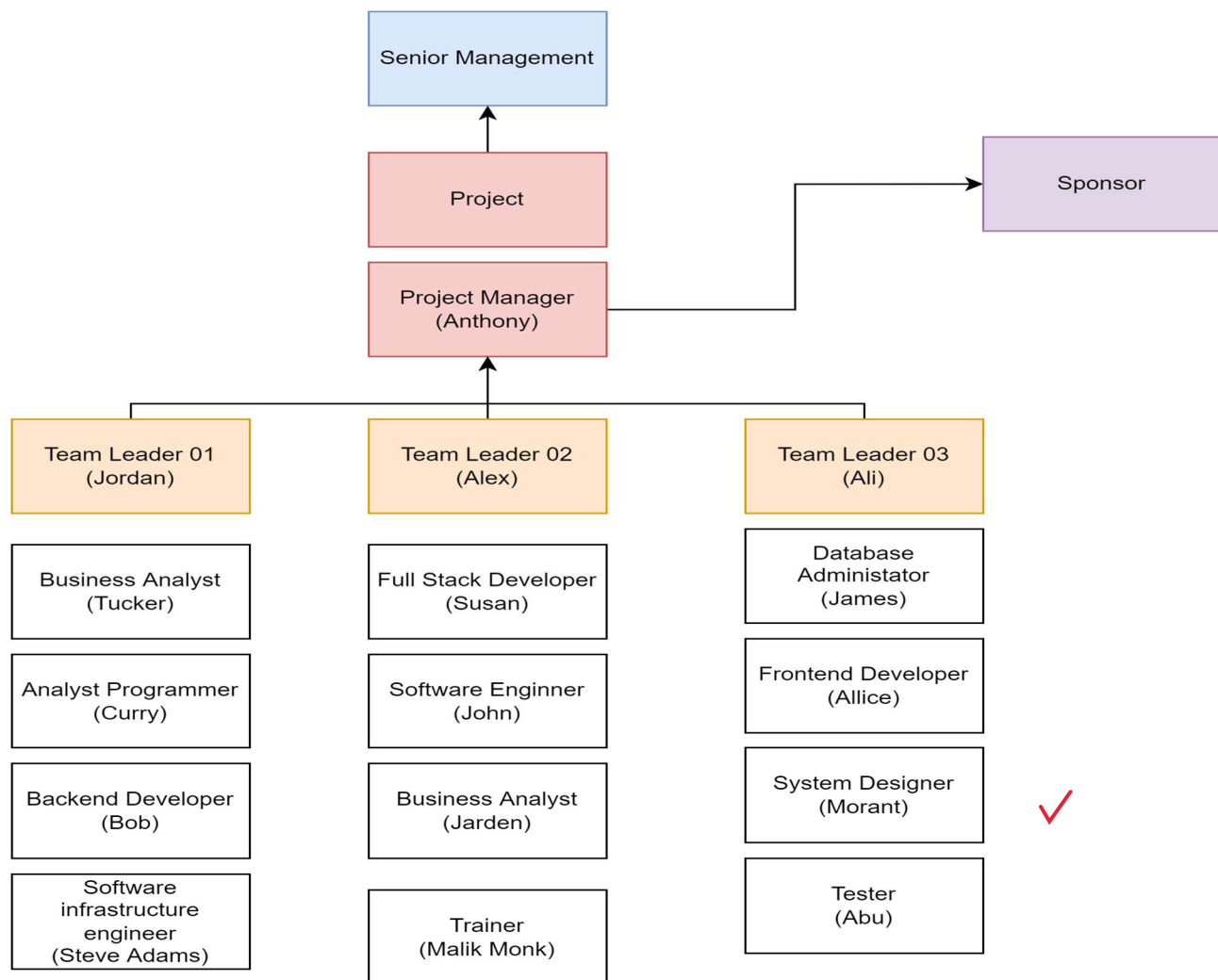
This project implements the project organization structure, project manager reports to the project sponsor and senior management. There are 3 team leaders under the project, and they report to the project manager. Team members need to report to their team leaders respectively and this organization structure hires employees specifically to work on the particular project (Blood Donation System) such as system analyst, software engineer ,database engineer etc as you can see in the project organization chart. The reason chosen for this type of organization structure is **unity of command** because the employee only receives orders from one superior only hence the employee no need to report to more than one superior. Due to unity of command it will lead to well organized authority, clear responsibility and accountability. **Resources are dedicated** to the project, so it's much easier to schedule work. For example when the team members are available or free and there's no risk they'll be pulled off at short notice to business-as-usual work for another manager.

Project Governance
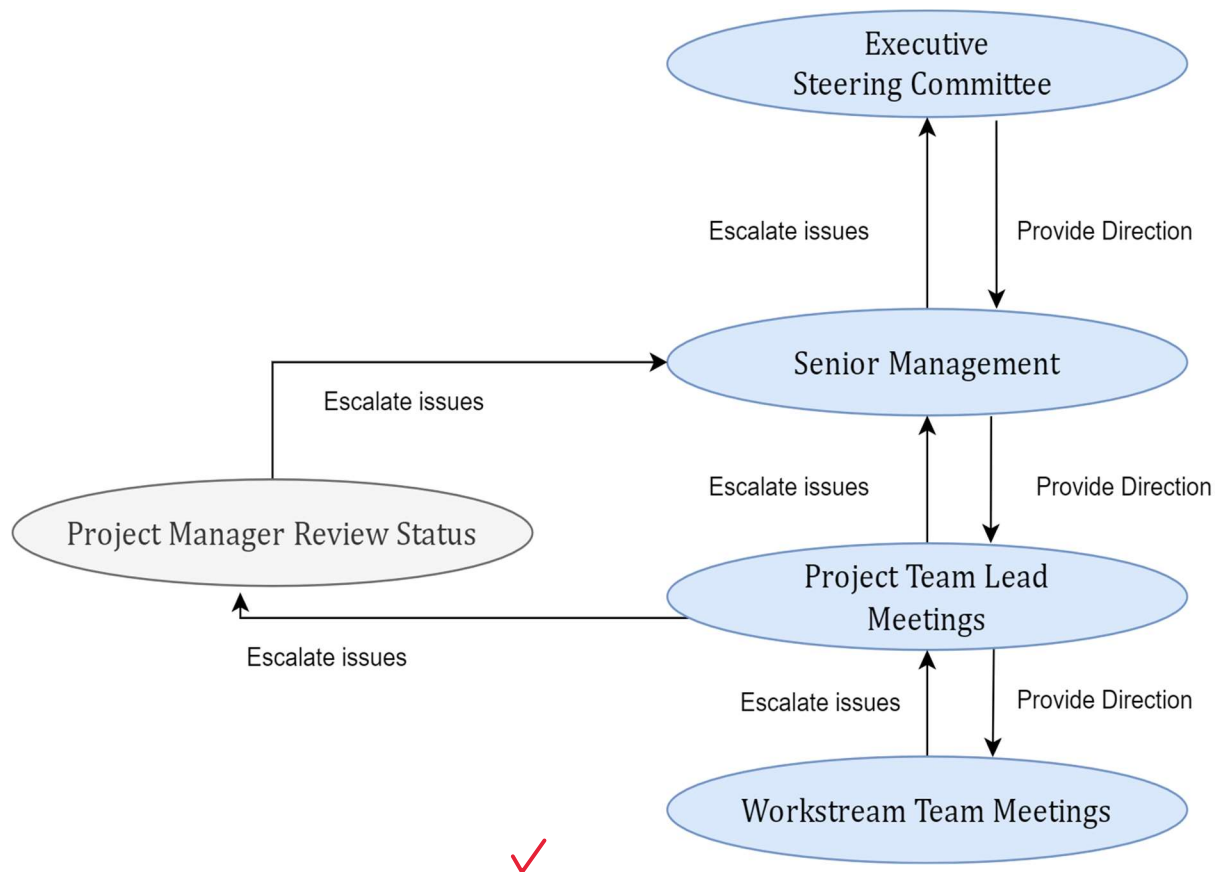
The two management agencies, as you can see in the picture, have an executive steering committee and project team leader to guide the project to a complete success. Workstream team is meeting weekly to progress the project issue to the project team leader. Project team leads also meet weekly to report the progress highlights, escalate issues to senior management.

Executive Steering Committee

An Executive Steering Committee (ESC) was established to ensure that the project can achieve its goals. The executive steering committee is responsible for ensuring the success of the project. In order to monitor the progress according to the target, ESC receives the project status from the project manager and senior management, and makes the project manager responsible for supervising discovery, guidance, support, and ensuring that the decision is consistent with the triple constraints of scope, schedule, and budget, to make decisions that have been escalated for resolution respond to the senior management and provide guidance and programme level direction.

Roles and Responsibilities

Role	Responsibility
Sponsor	- Make key business decisions for the project - Participate in project plan and deliverable - Approving the project budget and plan - Eliminate issues that could delay the success of the project - Ensuring the availability of resources that needed to be implement in the project
Business Analyst	- Create a detailed business analysis, outlining problems, opportunities and solutions for a current process. - Budgeting and forecasting. - create requirements specifications, - Analyze requirements - Understand the Requirement of the Businesses
Project Manager	- Make daily decisions based on directions provide by Project Executive and Steering Committee - Set up a communication plan to ensure everyone is kept up to date - Motivate and coach project team members - Monitor and ensure all milestones are met - Manage stakeholders based on the scope of the project - Ensure quality standards of the project are met - Remove obstacles for project team
Project Team Member	- Participate in project team activities - Completing individual deliverable - Reporting the progress of work - Contributing expertise - Documenting the process of the project

Tester	● Analyze Specifications, before testers start to perform any testing scenario , Testers will need to review and analyze the specifications of their company's software. ● Executing tests on software usability. ● Analyzing test results on database impacts, errors or bugs, and usability. ● Preparing reports on all aspects related to the software testing carried out and reporting to the design team.
Backend Developer	● creating and maintaining systems at the back end of a software such as the server, database and application.
Infrastructure Engineer	● Infrastructure engineering includes working with Internet connections, cabling, virtualization platforms, and storage area networks.
Software Engineer	● Provide input and support ● Analyse user requirement ● Research, design and write new software program ● Evaluate the software
Database Engineer	● Provide input and support ● Design and write new databases ● Maintain database programs ● Monitor database and programs ● Troubleshooting ● Review database reports
Software Trainer	● Encourage individuals to adopt new computer applications or programs by companies that create the software or companies that introduce the software for use by their employees.

QA Manager	- Establish quality assurance procedures - Report quality issues to project manager - Maintain quality assurance records - Identify opportunities to enhance productivity
Front End Designer	- Design system from a user perspective - Design usability of the application - Design prototypes and unit test application - Contributing expertise
Team Leader	- manage developers and ensure that your team functions smoothly - Introduce clear instructions on a daily basis - Motivate the team and create a good atmosphere for constructive feedback - Work on team building and foster good communication between team members

Project Plan

Below the figure 1 is the activities in project planning and estimation, which includes defining activities, sequencing activities,subtask, estimating resources, estimating durations of each task, and developing the schedule.The software process model for running this project is using evolutionary prototype because the following reason: **Avoid Mistake** Because the project is divided into pieces, each module can be extensively tested separately. It is possible to significantly reduce mistakes in the many models of the main project by doing rigorous testing. It is also easy to find the function which is missing.**Satisfy User Need** Fulfilling the requirements of the user is the most important thing for the system. It is feasible to integrate user wants into the system by putting prototypes through cycles of feedback and improvement based on user requests. Customers will not complain because they were involved in the design process. **Suitable for Large Projects Large projects** may be readily split down into models that can be delivered to clients independently. The duration of running this project is around 175 days.

Blood Donation System Development	174.88 days	Mon 15/11/21	Wed 20/7/22	
◢ **Feasibility Study**	**20 days**	**Mon 15/11/21**	**Fri 10/12/21**	**1**
Cost Benefit Analysis	6 days	Mon 15/11/21	Tue 23/11/21	
Technical Feasibility	4 days	Tue 23/11/21	Mon 29/11/21	3
Project Objective,Scope,Constraints,Assumption	7 days	Tue 30/11/21	Thu 9/12/21	4
<Feasibility Study Report>	0 days	Fri 10/12/21	Fri 10/12/21	
◢ **Initiation**	**11.88 days**	**Mon 13/12/21**	**Tue 28/12/21**	**2**
Evaluation and suggestion / current problem face	4 days	Mon 13/12/21	Fri 17/12/21	
Produce project charter	2 days	Fri 17/12/21	Tue 21/12/21	8
Project Sponsor Review Project Charter	2 days	Tue 21/12/21	Thu 23/12/21	9
Project Charter Approved	2.88 days	Thu 23/12/21	Mon 27/12/21	10
<Project Charter>	0 days	Mon 27/12/21	Mon 27/12/21	
◢ **Define Requirements**	**20.88 days**	**Tue 28/12/21**	**Wed 26/1/22**	**7,11**
Define user requirement	6 days	Tue 28/12/21	Wed 5/1/22	
Define system requirements	6 days	Wed 5/1/22	Thu 13/1/22	14
Define content requirements	6 days	Thu 13/1/22	Mon 24/1/22	15
Define server owner requirement	1 day	Mon 24/1/22	Tue 25/1/22	16
Deliver requirements documentation	1.88 days	Tue 25/1/22	Wed 26/1/22	17
<Functional Report>	0 days	Wed 26/1/22	Wed 26/1/22	
◢ **Analysis Requirements and System Analysis**	**17.88 days**	**Thu 27/1/22**	**Wed 23/2/22**	**13**
Gathering business requirements	4 days	Thu 27/1/22	Fri 4/2/22	
Use cases analysis	4 days	Fri 4/2/22	Thu 10/2/22	21
Process modeling	7 days	Thu 10/2/22	Mon 21/2/22	22
Data modeling	2 days	Mon 21/2/22	Wed 23/2/22	23
<Modeling Report>	0 days	Wed 23/2/22	Wed 23/2/22	
◢ **Builde Prototype and Evaluation Iteration**	**60.88 days**	**Thu 24/2/22**	**Thu 19/5/22**	**20**
Purchase hardware and software	2.88 days	Thu 24/2/22	Mon 28/2/22	
Install Development System	2 days	Tue 1/3/22	Thu 3/3/22	27
Designing the IT infrastructure	7 days	Thu 3/3/22	Mon 14/3/22	
Designing the system model	7 days	Mon 14/3/22	Wed 23/3/22	29
Website design	7 days	Wed 23/3/22	Fri 1/4/22	30
User interface design	7 days	Fri 1/4/22	Tue 12/4/22	31
Database design	7 days	Tue 12/4/22	Thu 21/4/22	32
Development of IT infrastructure	7 days	Thu 21/4/22	Mon 2/5/22	33
Development of database and code	7 days	Mon 2/5/22	Wed 11/5/22	34
Deliver first prototype	5 days	Wed 11/5/22	Wed 18/5/22	35
<Prototype>	0 days	Thu 19/5/22	Thu 19/5/22	

◢ **Iteration user evaluation**	**20 days**	**Fri 20/5/22**	**Fri 17/6/22**	**26**
user feedback, suggestion, comments	20 days	Fri 20/5/22	Fri 17/6/22	
<User Feedback>	0 days	Fri 17/6/22	Fri 17/6/22	
◢ **Refine Prototype**	**17 days**	**Wed 25/5/22**	**Fri 17/6/22**	**40SS+3 days**
refine version prototype according to the user's feedback and suggestions until satisfaction prototype	17 days	Wed 25/5/22	Fri 17/6/22	
<Final Version Prototype>	0 days	Fri 17/6/22	Fri 17/6/22	
◢ **Testing**	**14.88 days**	**Fri 17/6/22**	**Thu 7/7/22**	**43**
Requirement analysis	4 days	Fri 17/6/22	Thu 23/6/22	
Test planning	2 days	Thu 23/6/22	Mon 27/6/22	48
Test case development / writing scenario	2 days	Tue 28/6/22	Thu 30/6/22	49
Execute and record result	1 day	Fri 1/7/22	Mon 4/7/22	50
Acceptance test	2 days	Tue 5/7/22	Thu 7/7/22	51
<Testing Report>	0 days	Thu 7/7/22	Thu 7/7/22	
◢ **Deployment and maintainance**	**8.88 days**	**Fri 8/7/22**	**Wed 20/7/22**	**47**
Data migration	2 days	Fri 8/7/22	Tue 12/7/22	
Software Installation	1 day	Tue 12/7/22	Wed 13/7/22	56
User Training	5 days	Wed 13/7/22	Wed 20/7/22	57
Go Live	0.88 days	Wed 20/7/22	Wed 20/7/22	58
<Workable System>	0 days	Wed 20/7/22	Wed 20/7/22	

Figure 1

	Name	Start	Finish
1	Chrismas	25/12/2021	25/12/2021
2	New Year's Day	1/1/2022	1/1/2022
3	Thaipusam	18/1/2022	18/1/2022
4	Chinese New Year	1/2/2022	2/2/2022
5	Labour Day	1/5/2022	1/5/2022

- 8:00 AM to 12:00 PM
- 1:00 PM to 5:00 PM

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Figure 2

As you can see in the figure 2 public holiday during execution of the project and the working hours.

Anthony	Work		A	Project Manager	100%	RM50.00/hr	M80.00/hr	RM0.00	Prorated	Standarc	Senior System Analyst
Jordan	Work		J	1(Leader)	100%	RM35.00/hr	M45.00/hr	RM0.00	Prorated	Standarc	System Analyst
Tucker	Work		T	1	100%	RM25.00/hr	M26.00/hr	RM0.00	Prorated	Standarc	Business Analyst
Curry	Work		C	1	100%	RM25.00/hr	M26.00/hr	RM0.00	Prorated	Standarc	Analyst Programmer
Alex	Work		A	2(Leader)	100%	RM35.00/hr	M36.00/hr	RM0.00	Prorated	Standarc	Senior Software Developer
Susan	Work		S	2	100%	RM28.00/hr	M29.00/hr	RM0.00	Prorated	Standarc	Full Stack
John	Work		J	2	100%	RM28.00/hr	M29.00/hr	RM0.00	Prorated	Standarc	Software Enginner
Jarden	Work		J	2	100%	RM22.00/hr	M23.00/hr	RM0.00	Prorated	Standarc	Business Analyst
Ali	Work		A	3(Leader)	100%	RM35.00/hr	M36.00/hr	RM0.00	Prorated	Standarc	Full Stack Programmer
Abu	Work		A	3	100%	RM20.00/hr	M22.00/hr	RM0.00	Prorated	Standarc	System Tester
James	Work		J	3	100%	RM20.00/hr	M22.00/hr	RM0.00	Prorated	Standarc	Database Administrator
Allice	Work		A	3	100%	RM20.00/hr	M22.00/hr	RM0.00	Prorated	Standarc	Frontend Developer
Bob	Work		B	1	100%	RM20.00/hr	M22.00/hr	RM0.00	Prorated	Standarc	Backend Developer
Steve Adams	Work		S	1	100%	RM20.00/hr	M22.00/hr	RM0.00	Prorated	Standarc	Software infrastructure engineer
Morant	Work		M	3	100%	RM18.00/hr	M20.00/hr	RM0.00	Prorated	Standarc	Junior System Designer
Malik Monk	Work		M	2	100%	RM20.00/hr	M22.00/hr	RM0.00	Prorated	Standarc	Information technology trainers
Database Server	Material		D	Shared		RM0.00		RM100.00	Prorated		Hp Server
Oracle Resporitory	Material		O	Shared		RM0.00		RM100.00	Prorated		Oracle Resporitory
User	Work		U		100%	RM0.00/hr	RM0.00/hr	RM0.00	Prorated	Standarc	Staff , customer
Sponsor	Work		S		100%	RM0.00/hr	RM0.00/hr	RM0.00	Prorated	Standarc	Sponsor
Pc and other components	Material		P			RM0.00		M17,500.00	Prorated		work station needed hardware
Cable Installation	Material		C			RM0.00		RM1,400.00	Prorated		
Software License	Material		S			RM0.00		RM2,000.00	Prorated		
Router	Material		R			RM0.00		RM1,000.00	Prorated		
Printers	Material		P			RM0.00		RM2,000.00	Prorated		
network devices	Material		n			RM0.00		RM5,000.00	Prorated		
Software Training	Material		S			RM0.00		RM3,000.00	Prorated		

Figure 3

In the figure 3 you can see the resources used in order to running the project such as labor,equipment,materials.

No IT Staff	Leadership Skill 20%	Technical Skill 15%	Communication and Interp 15%	Negotiating Skill 15%	Working Experience and Backgrounc 20%	Ability to work in a team environment 15%	Total 100%	
Anthony	18%	12%	12%	14%	17%	12%	85%	>highest score become project manager
Jordan	15%	11%	10%	10%	15%	10%	71%	>become team leader
Tucker	8%	8%	7%	5%	12%	12%	52%	
Curry	12%	11%	10%	9%	14%	13%	69%	
Alex	15%	11%	10%	10%	15%	10%	71%	>become team leader
Susan	12%	11%	10%	9%	14%	13%	69%	
John	10%	11%	10%	9%	14%	13%	67%	
Jarden	12%	11%	10%	9%	14%	13%	69%	
Ali	15%	11%	10%	10%	15%	13%	74%	>become team leader
Abu	12%	11%	9%	9%	14%	13%	68%	
James	12%	11%	10%	9%	14%	13%	69%	
Allice	12%	9%	10%	9%	14%	13%	67%	
Bob	12%	11%	10%	9%	14%	12%	68%	
Steve Adams	12%	11%	10%	9%	14%	13%	69%	
Morant	12%	11%	10%	9%	14%	13%	69%	
Malik Monk	12%	11%	10%	9%	14%	13%	69%	
Mei	5%	5%	5%	5%	10%	10%	40%	>new staff joined , unable to be part of the new project
Rivers	12%	11%	9%	8%	15%	12%	69%	>backup staff for any risk occur

Figure 4

Above are the weighted scoring models to evaluate candidates for project manager and team member positions and they have backup staff which is Rivers and when the project manager are absent, one the 3 team leaders will decide to become the temporary project manager in order toward the success of the project with no any delay.

	✈	<Feasibility Study Report>	0 days	Fri 10/12/21	Fri 10/12/21		Jordan,Anthony
👤	📌	◢ Initiation	11.88 days	Mon 13/12/21	Tue 28/12/21	2	Anthony,Jordan
👤	📌	Evaluation and suggestion / current problem face	4 days	Mon 13/12/21	Fri 17/12/21		Jordan
👤	📌	Produce project charter	2 days	Fri 17/12/21	Tue 21/12/21	8	Anthony
👤	📌	Project Sponsor Review Project Charter	2 days	Tue 21/12/21	Thu 23/12/21	9	Jordan,Sponsor
	📌	Project Charter Approved	2.88 days	Thu 23/12/21	Mon 27/12/21	10	Sponsor
	📌	<Project Charter>	0 days	Mon 27/12/21	Mon 27/12/21		Anthony,Jordan
👤	📌	◢ Define Requirements	20.88 days	Tue 28/12/21	Wed 26/1/22	7,11	Alex,Anthony
	📌	Define user requirement	6 days	Tue 28/12/21	Wed 5/1/22		Jarden,User
	📌	Define system requirements	6 days	Wed 5/1/22	Thu 13/1/22	14	John,User

Figure 5

Figure 5 shows the over allocation of the resource and the way to fix this problem can be done by delay or give some buffer day, don't assign tasks during the public holiday, add more resources such as staff. Lastly,don't allocate the task to the same worker on the same day.

Project Control

Resource Control
- Always deal with the human resources department, care about the physical and mental health of all employees involved in the project life cycle, and ensure that their condition and performance are in the best condition.

- The problem or suggestion must be communicated to the project manager as soon as possible so that measures can be taken to avoid problems.

- Monitor all resources and track the status of resources to guarantee that the resources are in the best condition, as this may affect the quality of tasks in the project.

- Carry out a risk management plan and propose alternative plans when the actual plan is unrealistic, thereby reducing risks that may affect the efficiency of the project.

Cost Control
- monitor and check the condition of resources to ensure that all employees and workers use the equipment in accordance with the user manual and there is no violation.

- Track each purchase of materials and other materials involved in the project, study the market price, study the promotion time period, handle the relationship with the supplier, and purchase hardware cheaper than the market price.

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Time Control
- Use (microsoft project) and other project management software to visualize and map the project timeline to identify dependencies and map constraints and assumptions of the project. ✓

- If the project life cycle does not meet the expected budget or schedule planned within the project timeline, there are guidance or alternative ways to deal with risks and uncertainties.

- Always monitor and analyze the progress of the project to track the progress of the employees in performing tasks.

Quality Control
- Communication and keeping track with the suppliers when dealing in purchasing the resources.

- Cooperate with the human resources department to train the workers involved in the project to ensure their performance is improved and polished such as providing training programs. ✓

- The system administrator must monitor and supervise the safety, compatibility, functionality and reliability of the system.

Quality Plan

Tan Gee Mui

- **name:** Usability ✓

- **description:** Usability is the extent to which a system can be used by specific users to achieve specific goals with efficiency, effectiveness and satisfaction in a specific setting. ✓

- **quality measurement:** Usability can be measured by **1.** analyzing the time it takes for users to learn how to use the system in order to complete a task for the first time and the time they take to become somewhat efficient at using the system. **2.** It also can be measured after the user has established somewhat efficiency by calculating the net increase in productivity, compared against the old system. **3.** Using a questionnaire to measure how users feel about the system. ✓

  Testing is to support reliability.

- **test: 1.** In-person. Representative users can be called out to perform a formal, live testing of the system to note the testers' experiences with the system. **2.** Remote. Representative users can be scheduled to perform a remote live testing in their own environment to discover more accurate insights regarding the system.

- **target range:** The quality measurement takes about 1 - 2 hours during working hours in order to help users to use the system somewhat efficiently. ✓

Chen Kai Xuan

- **name:** Satisfaction ✓

- **description:** Satisfaction is an emotional condition that occurs as a result of a user purchasing or using a company's goods, services, or system. The satisfaction of users with the company's goods, services, or system. *Repeating point.*

- **quality measurement:** Satisfaction can be measured by 1. Customer Satisfaction Score (CSAT) ✓ is a common method of measuring the satisfaction of the user. The user will be asked to score the quality of the system based on a scale. For example, on a numeric scale (from 1 to 5) or a word scale (from very satisfied to very dissatisfied). 2. Net Promoter Score (NPS) is a metric for measuring the loyalty of the users to the company's system. It was measured based on asking users if they would suggest the system to their friends and family. For example, "Do you prefer to recommend our system to others?", "Would you want to use this system again?" and so on. Net Promoter Score also can be answered by the user based on a scale.

- ○ **test:** The test can be taken by asking the users to fill up a survey about the system after using the system. The way of sending the survey to the user can be via email, website, or sharing the survey on social media. The percentage of Customer Satisfaction Score can be calculated by using the total of users who are enjoyable using the system divided by the total of the users and multiplying one hundred percent. On the other hand, the Net Promoter Score can be calculated by separating the users into three different groups. The user who gave a score from 0 to 6 is considered to detector group. They are not loyal and not much like the system. The user who gave a score between 7 to 8 is passive. They will not enthusiastically endorse the system to their friends and family. The last group of users who gave a 9 or 10 rating are the most devoted users. They will be more likely to introduce the system to others.

- ○ **target range:** The measurement will be performed after the user uses the system and it will take 20 to 25 minutes to let the user fill up all the questions inside the survey. The measurement will be performed every two months. Who are the users? Staffs? Donors?

Hong Jian Chen

- ○ **name:** Maintainability

- ○ **description:** Maintainability is the efficiency of which a system can be repaired if it fails, modified according to environment changes or upgraded if the customer's requirements changes.

- ○ **quality measurement:** Maintainability can only be measured using indirect ways. **1.** Mean-time-to-change (MTTC), which refers to the time it takes to measure a change request, create a suitable modification, implement the changes, testing and make it available to all users. Systems that are maintainable have a lower MTTC. **2.** Spoilage, which is the cost of eliminating errors after the software has been distributed to its end-users. The overall maintainability of the software improvement can be analyzed by plotting the ratio of spoilage to the overall project cost as a function of time. Any example of ratio?

- ○ **test: 1.** Backing up valuable data regularly e.g. once a week to external drive or cloud. **2.** Performing monthly maintenance to reduce the size of database log files in order to recover disk space from the transaction log file.

- ○ **target range:** The quality measurement takes around 1 hour, once in a month, which is on the weekends or rest time of users where users might not access the system at that time.

Heng Zheng Phin

- ○ **name:** Security

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○ **description:** Security is responsible for the ability of the system to reduce the likelihood of malicious actions as well as the possibility of loss or theft of information. In other words, security is the property of a system that measures how well it prevents unauthorized access, modification or destruction. Security can be characterized as a system providing confidentiality, integrity, non-repudiation, accountability,authenticity.

○ **quality measurement:** Security quality attributes can be measured by **1)**MTTD(Mean Time to Detect) metrics is the average time it takes to discover a security threat or incidentt.To measure MTTD, sum the total amount of time it takes your to detect incidents during a given period and divide that by the number of incidents. **2)**MTTR(Mean Time to Respond) Is the average response time or MTTR refers to the time it takes to control and eliminate the threat once it is discovered.

○ **Test:** The test that can be taken is the **vulnerability scanning**, which is the process of evaluating security risks in software systems to reduce the probability of threats required monthly such as performing the sql injection for example Testers used malicious SQL code in the back-end database to manipulate information that was not intended to be displayed. Another test can be done as a penetration **test**, the tester simulated a cyber attack against a system to check for exploitable vulnerability for example the tester will find the vulnerabilities after that design an attack and determine what type of the data can steal then take action from the findings.

○ **target range:** The system server will be down for 1 hours to do the security test.

Short answer.

Risk Log

Risk Information Sheet（Hong Jian Chen）

Risk ID: 002	**Date:** 30/11/2021	**Probability:** 60%	**Impact:** Critical

Description: Losing data of any or all part of the project   Short description.

Category: Business impact (BU)

Mitigation:

- Establish a backup plan at the beginning of the project
- Backup project data daily, weekly and monthly on multiple devices
- Develop specify access levels to prevent specific staff from accessing specific data on the network to avoid data stealing
- Notify staff to not keep liquids near laptop ?
- Install an uninterruptible power supply to protect data from power surges
- Notify staff to not delete files that they do not know e.g. system files

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Monitoring:

- Ensure project's backups are completed regularly
- Ensure anti-virus software is up to date
- Monitor laptop performance regularly e.g. temperature
- Ensure all laptops are not unattended
- Check potential risk emails or attachments that might cause virus
- Make sure information is documented properly
- Check upon file dates and sizes

Management: Brief answer.

If any or all project data was lost when the project is underway, following the mitigation strategy will ensure that:

- Project backup is available
- Information is well-documented

Risk Information Sheet(Heng Zheng Phin)

Risk ID: 003	Date: 30/11/2021	Probability:30%	Impact: Critical

Description: Inexperienced employees lack the skills and knowledge about the task given and are not usually familiar with the tools or software required to get the job finished. Inexperienced employees cannot handle pressure on the job due to a lack of experience. It will have a critical impact on project schedule and cost.

Category: Staff size and experience(ST)

Mitigation:

- **Conduct a risk-based assignment of people to project tasks.**

  -If a risk occurs in this situation, the project manager may assign smaller tasks to inexperienced workers.

- **Having a backup employee to replace the staff**

  -If a risk occurs in this situation, the backup employee with experience, skill and knowledge will take over the task of that employee in order to mitigate the project risk.

- **Provide guidance and advice to inexperience staff**

  -The project team leader or senior employee can give him guidance and patiently answer the employee's questions to teach the staff how to do and what need to be done for the jobs

- **Training Program To Worker**

  -Training of staff takes place after orientation takes place. Training can improve the skills, abilities and knowledge of employees to complete tasks. The training process shapes employees' thinking and leads to their quality performance. It is continuous in nature and never ending.

- **Improved sharing of experiences and lessons through case study discussions**.

  -Develop a policy that the project leader and other project participants must submit lessons learned reports at the end of the project. The report will be archived in the database to help the inexperienced learn from case studies

Monitoring:How to avoid this risk from happening again, we can control it by the following methods：

- **Build Risk-based project staffing system**

  The system will assist project managers in selecting the best workers to participate in the project. The system will assign who is suitable according to the worker's profile and the difficulty or higher risk of the project.

- **Observer employee work progress and feedback them**

  The project manager and team leader can hold a small meeting from time to time to understand whether the work of the member is in line with the plan, listen to the member's feedback, and take appropriate measures in time in order to control or avoid this risk to happen.

- **User manual documentation**

  Provide employees with a complete user manual document, so that they have the opportunity to learn how to use the system.

Management: If any Inexperienced employees lack the skills and knowledge about the task when the project is underway, following the mitigation strategy will ensure that:

1)Backup staff is available   Brief answer.

2) Inexperienced staff get guidance from the case study document

3)Always supervise inexperienced employees, teach them patiently, and don't put pressure on them.

Risk Information Sheet (Tan Gee Mui)			
Risk ID: 004	**Date:** 30/11/2021	**Probability:** 75%	**Impact:** Critical

Description: user having constant changes with the requirements of the project

Category: Product size (PS)　　　Short description.

Mitigation:

- Define a clear set of requirements to act as a baseline. ✓
- Meet with users to get feedback on the project sooner rather than later.
- Review and confirm the requirements with users.
- Review prototype with user.
- Organize project teams so that team members are prepared and understand how changes will impact the project.
- Organize weekly meetings with users to confirm requirement details.
- Prepare backups for requirements. ?

Monitoring:

- Monitor user's attitude about the prototype to avoid last-minute changes.
- Check whether project requirement status is visible to all team members.
- Check potential problems on the project that could lead to requirement changes. ✓
- Keep track with user's feedback
- Observe and ensure all feedback and issues from user are well understood and documented

Management:

If the requirements of the project was requested to change when the project is underway, following the mitigation strategy will ensure that:

- Backup is available
- Team members are well prepared
- Information is well-documented
- Knowledge has been dispersed across the team

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Risk Information Sheet (Chen Kai Xuan)			
Risk ID: 005	**Date:** 30/11/2021	**Probability:** 70%	**Impact:** Critical

Description: Alteration of Budget   Very short answer.

Category: Business impact (BU)

Mitigation:

- Determine the financial impact of project request changes. The requirements for project changes are often accompanied by changes to the budget, and more or fewer funds will be allocated.

- Make a new work schedule. Include the new requirements of stakeholders into the new work plan and maintain the staff's attention on the new deliverables.

- Make a comparison between budget and actual expenditure. Determine how much of the initial budget has been spent and how much budget is still available.

- Prepare a budget plan before starting the project. Estimate how much of the budget will be spent on each of the project's stages.   ✓

Monitoring:

- Keep updated on the requirements of stakeholders. Delay to update the stakeholders' requirements will lead to the cost of the project increasing.

- Check whether the activities of staff follow the new work schedule to prevent the increment of the workflow of the staff and lead to the cost increase.

- Keep your customer informed and explain how the project is moving and how any potential problems may affect the cost.

- Keep track of the budget. In order to clearly see how much expenses were spent on each stage of the project.

Management:

If the alteration of the budget of the project is underway, following the mitigation strategy will ensure that:

- Communicate with the customer to increase the budget of the project.

- Communicate with the customer to reduce the unnecessary requirement.

- Find more sponsors to get more budget.

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✓

No appendix.