Project Plan Document

Alt-F4

BUSTALK

Overview

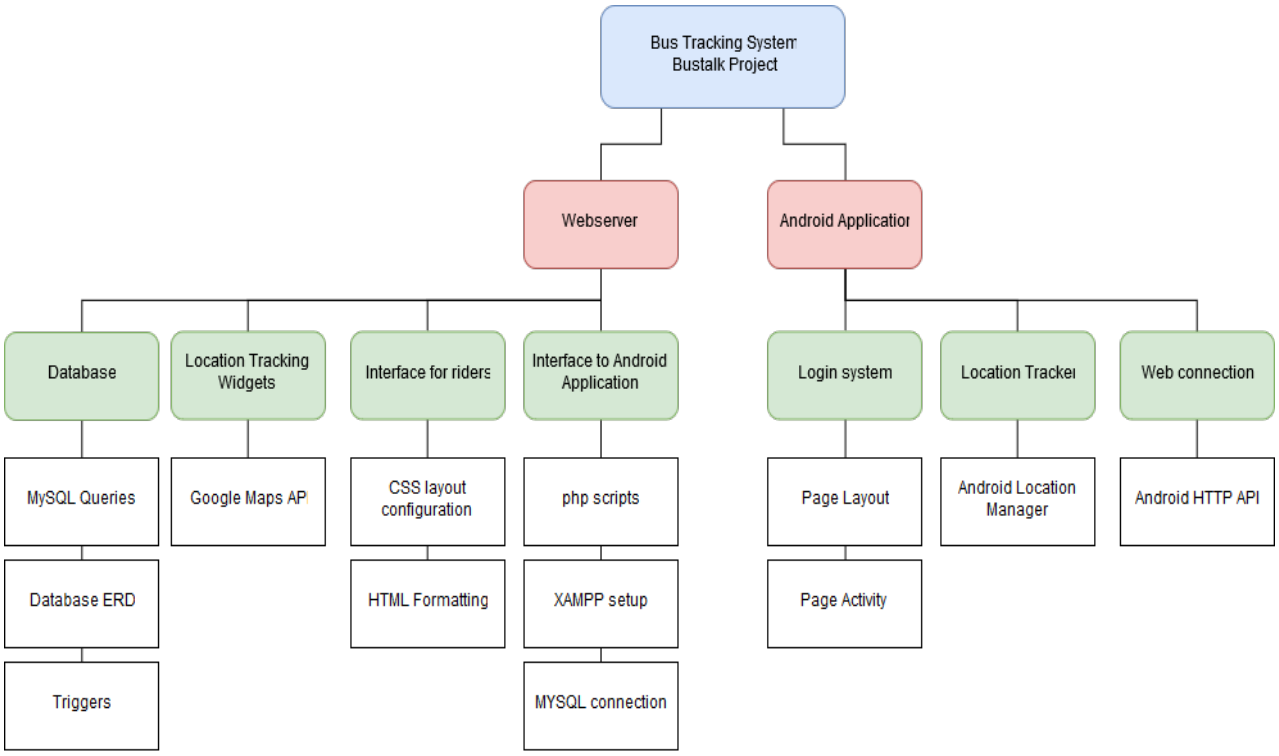


Figure 1.0 Work Breakdown Structure

Bustalk has 2 key elements in it, the web server and the android application. This allows both components to be developed independent of each other which will speed up development time as tasks concerning the components can be executed in parallel. The interface between the android application and the web server is decided before implementation begins which will aid us in the integration of both systems later towards the end of the project.

Before diving into the details of the planning on the project, it is pivotal that all available resource is disclosed here. The team that will be working on this project is a 4 person team and are highly coordinated. Each member in the team has a specialty which allows them to focus on their independent task given and also able to conduct their implementation separately from the rest of the team under a clear interface standard set before implementation. A detailed table of the task required to be completed in sequence is shown in the next diagram. Using a 3-point estimation on the time required for each task, the timeline is plotted on a Gantt chart.

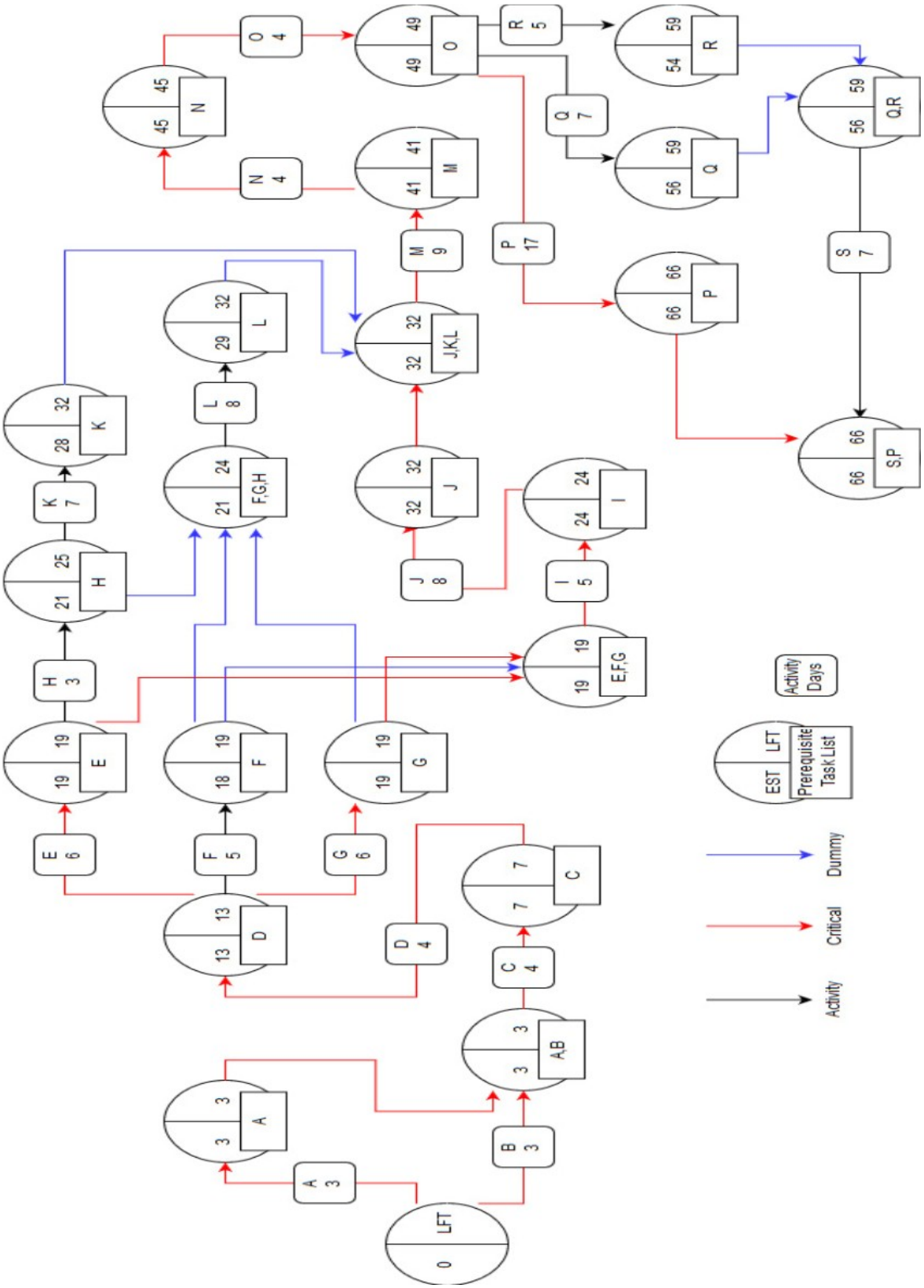
The development process model that the project shall employ is the **waterfall model**. The reason for choosing the model is due to the nature of the organization of AltF4 being a bureaucratic company, thus employing a methodical and systematic model is suitable to the organization's identity.

Scheduling Table

Project start date : 5th July 2018 — MM/DD/YY — MM/DD/YY

Index	Tasks	Assigned	Prerequisite Task	Time Estimates (Days)			Expected Time	Start Date (Expected)	End Date (Expected)
				Optimistic	Most Likely	Pessimistic			
A	Initial project proposal draft	CJ	N/A	1	2	4	2.167	07/07/18	07/10/18
B	Timeline scheduling	CJ	N/A	1	2	4	2.167	07/07/18	07/10/18
C	Client meetings and discussions	CJ,HSL	A,B	2	3	5	3.167	07/10/18	07/14/18
D	Software requirements draft and plan	CJ,HSL	C	2	4	6	4	07/14/18	07/18/18
E	System and Database design	HI	D	4	6	8	6	07/18/18	07/24/18
F	Use-case design	CJ,HI	D	3	4	6	4.167	07/18/18	07/23/18
G	Application UI/UX design draft	HI,YKS	D	4	5	7	5.167	07/18/18	07/24/18
H	Technology usage discussion	CJ,HI	D,E	1	2	4	2.167	07/24/18	07/27/18
I	Web-server design	YKS	E,F,G	3	5	7	5	07/27/18	08/01/18
J	Web-server programming	YKS	I	6	8	10	8	08/01/18	08/09/18
K	Database implementation	HI	E,H	5	7	9	7	07/27/18	08/03/18
L	Mobile application programming	HSL	F,G,H	6	8	10	8	07/27/18	08/04/18
M	System Integration	HI,YKS	J,K,L	7	8	11	8.333	08/09/18	08/18/18
N	Alpha testing (initial testing)	CJ,HSL	M	3	4	5	4	08/18/18	08/22/18
O	Initial System setup for clients	YKS,HSL	N	2	4	5	3.833	08/22/18	08/26/18
P	Beta testing (public use)	YKS,HSL	O	14	17	20	17	08/26/18	09/12/18
Q	Refining and software optimization	CJ,YKS	O	5	7	9	7	08/26/18	09/02/18
R	Customer feedback implementation	CJ,HI	O	3	5	7	5	08/26/18	08/31/18
S	Project documentation consolidation	HSL	Q,R	5	7	9	7	09/02/18	09/09/18

Legend		
CJ	Chia Jason	Project Manager
YKS	Yeo Kai Shun	Senior Lead Programmer
HI	Haziq Imran	Systems Designer
HSL	Hor Sui Lyn	Documentation Manager, Quality Assurance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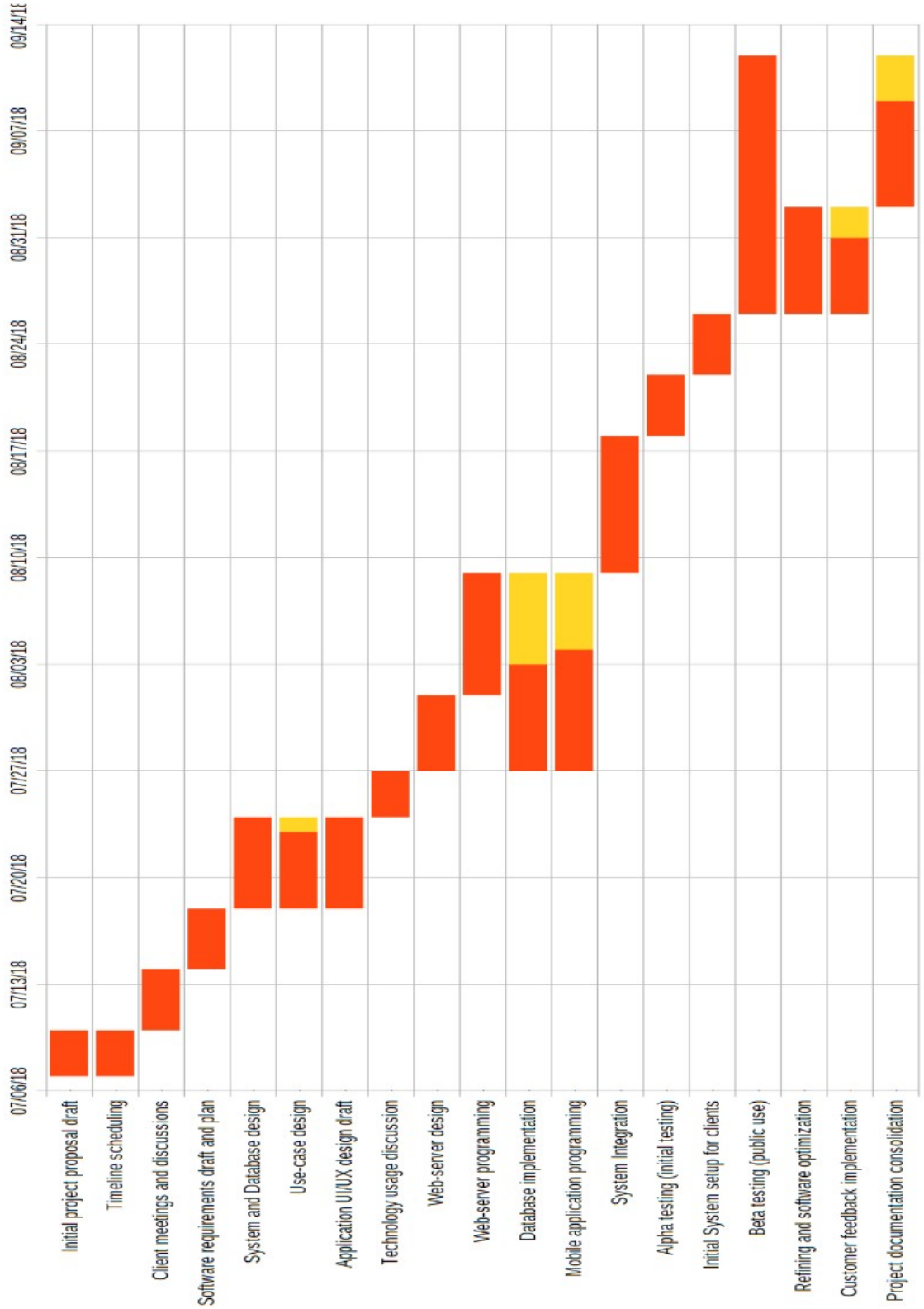
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Web-server design
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Database implementation
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Project Comparison Metrics (Size)

kLOC – Kilo lines of code

Project	Effort (Person-Months)	Cost (RM)	kLOC	Doc. (pages)	Errors	Manpower allocated
Bustalk	3.833	9800	6.6	10	15	4
RouteTracker	9.3	20900	15.5	11	47	8
SimpleCommute	1.75	3300	2	5	10	2
Rapidfind	11.48	30000	22.4	28	19	12

		Value				
Aspect	Formulation	Bustalk	RouteTracker	SimpleCommute	Rapidfind	Average
Productivity	kLOC / person-month	1.72	1.67	1.14	1.95	1.62
Quality	Errors / kLOC	2.27	3.03	5	0.85	2.7875
Cost	Cost / kLOC	1484.85	1348.39	1650	1339.29	1455.6325
Documentation	Doc. / kLOC	1.52	0.71	2.5	1.25	1.495

Figure 1.1 Project size metrics

From the metrics, the noteworthy points include the project Bustalk having above average performance in the aspect of productivity, quality and documentation, scoring above the average. The metrics is compared to similar projects that also deals with tracking buses, providing commuter customer service as well as the application to locate nearest train stations and track the train location, Rapidfind. Bustalk is however, lacking behind in cost, having a slightly above average cost due to development requirement and database usages.

Categorically speaking, Bustalk is classified as a medium sized project compared to projects of similar nature. With only a team of 4, it is wise to undertake medium-small sized project as manpower is a limited resource that the team lacks. Compared to a smaller size project “SimpleCommute”, Bustalk is at least twice as much better in quality with a cheaper price despite being the larger project. This shows that Bustalk is a project viable for our team size and is also worthwhile of our time and resources.

The following table shows the cost estimation in detail to justify the cost stated in the metrics.

Project Financial Cost Estimation (in RM)

Item	Pessimistic	Most-likely	Optimistic	3-point estimation
Salary for developers and team members	7000	4000	2200	4200
Web server Deployment	4000	3000	2600	3100
Android Developer License	200	150	100	150
Domain name purchasing	300	200	100	200
Additional Cost (Poster Marketing, Pitching materials, Drives, Other software licenses)	3000	2100	1500	2150
Total	14500	9450	5500	9800

Risk Table for Bustalk

Risk Description	Risk Category	Probability	Impact	RMMM
Customer misunderstood the aim of the system	Business-Sales	40	2	b1
Losing support from senior management due to change in focus	Business-Management	20	3	b2
New functionality required by customer during development	Technical Risk	25	3	t1
Bus driver uses iOS rather than android	Technical Risk	30	2	t2
Integration delay due to delayed work on design and implementations	Project Risk	40	1	p1
Ride sharing service to overtake Bus services	Business-Market	20	3	b3
Team member quits due to personal issues	Business-Budget	15	2	b4
ALTF4 to switch back to Fintech technology	Business-Sales	10	3	b5
Delay in alpha testing due to GPS testing complexities	Project Risk	40	1	p2
Difficulty in performing the demo during pitching	Business-Sales	10	2	b6
Low user base, riders do not know/ do not want to use the system	Business-Strategic	10	3	b7
Ethical issue arises when bus driver forgot to stop tracker after work. Privacy violation	Technical Risk	5	1	t3

**Refer to the next page for RMMM (Mitigation plans)

Risk Mitigation, Monitoring and Management (RMMM)

RMMM ID	Mitigation Plan
b1	Contact the customer for clarification and apologize. Ensure the sales team is up-to-date with the selling point of the project.
b2	Request for support from other senior managers or management of higher level should the project be doing well.
b3	Attempt to sell the project to ride sharing company as ride sharing drivers uses their mobile phone as trackers as well.
b4	Hire a new team member and brief him/her regarding progress of project. Ensure everyone's work is stored on a repository handled only by key personnel on the project
b5	Rebrand the project to track the security armored car for monitoring of cash transfers to and from ATM machines. The monitoring allows the head of security to track the location of the armored security van.
b6	Ensure the sales team is well prepared, include videos of working prototype and use cases in the pitching documents to convey a clearer message to the customer.
b7	Start a marketing campaign by putting up posters to bus stations so riders know they can view bus location from the comfort of their home and subsequently improve user base.
t1	Gather the development team to add on additional modules to the software based on customer request. Send the sales team to request for extension after discussion with the software team.
t2	Seek professional support to port the mobile application to iOS in order to develop it quick and in time as to not affect project schedule.
t3	Conduct training and advise customer company to provide simple scheme to ensure bus driver clock out when their shift is over.
p1	Request extension from the customer, cite development complexities as reason. Setup demo for clients if necessary to let them know that the project is underway despite delays.
p2	External professional testing teams can be hired to aid the team in performing and undergo alpha testing