Practicals

Follow the assignment guidelines under the Appendix.

Practical 1

1. Form a team of 5 members and register your selected software project to the google sheet shared by your practical tutor in week 1.

2. Analyse the background of your selected software project.
   - Describe the project development team (the project development team is your group).
   - Describe who your project client is, the nature of their business and explain why the client wants to carry out the project.

3. Perform project initialisation activities
   - Project costs estimation (This may include hardware, software, manpower, etc).
   - Project objective (must conform to the SMART criteria)
   - Project team structure
   - Stakeholders register
   - Communication plan
   - Project scope: create a work breakdown structure (WBS) which shows 3 levels: system, modules and functions. Briefly describe the functionalities of each module.
   - Exclusions

Practical 2

Project Planning

This is focused on the activities in project planning and estimation, which includes defining activities, sequencing activities, estimating resources, estimating, durations and developing the project schedule.

1. Identify one suitable software process model used (apply stages of selected model to a project schedule) and the required tasks for this project.

2. Prepare a project schedule using **Microsoft Project Software**,
   - Enter the project information with the appropriate start and/or finish date.
   - Set the base calendar for the project with the appropriate workdays, working hours or include exceptions such as public holidays, etc.
   - Prepare a Gantt chart *(use Microsoft Project software)* with the task name, duration and tasks dependencies. Allocate staff (resources) to project tasks.
   - Tasks and subtasks must include the estimated durations, concurrency, and task dependencies (predecessor) information.
   - Adjust the time scale, deadlines and set milestones.

Practical 3

Resource Management

1. Determine the **resources** (e.g. staff, equipment, materials, expenses, etc.) required for the various tasks or subtasks.Estimate the staff costs in the project schedule.
2. Assume that you have acquired your project team (member's skills and responsibilities), allocate each team member to the project's tasks or subtasks.
3. Describe any 2 **assumptions** you made while creating the project schedule.
4. Resource scheduling depends on the project calendar, tasks dependency (predecessor) and manpower. If there is any *resource overallocation*, apply *resource leveling* in the Gantt chart and revise your project schedule accordingly. Refer sample screenshot for project schedule in page 3 (figure 2).
5. Generate **two** reports using the Microsoft Project software (Figure 1: Report) and identify specific reports to show the project information to the different stakeholders. Explain purpose of each report generated. Refer sample screenshot in last page (figure 3).

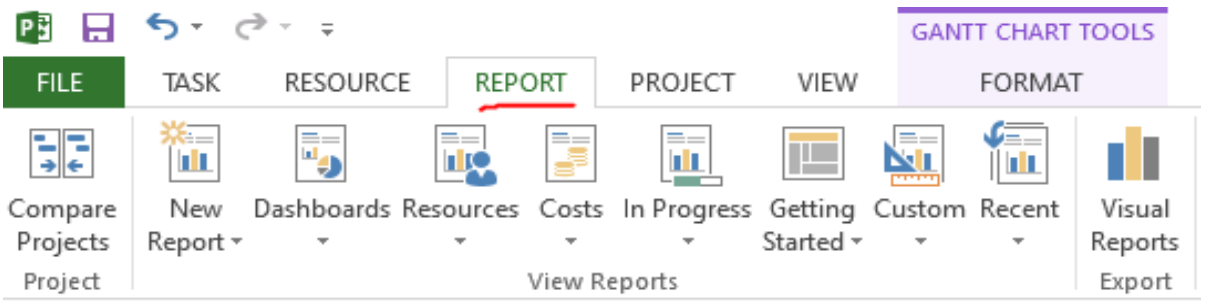


Figure 1: Report Tab

Practical 4

1. Identify one important **software quality attribute** for the system. For the quality attribute, specify the **quality assessment process**.
   Prepare a quality plan include the following details: (Chapter 3)
   - Quality name: software quality attribute
   - Description: description of the quality attribute
   - Scale: unit of Measurement for the quality attribute
   - Test: practical test of the extent to which the quality attribute exists in the system. Identify quality assessment process
   - Acceptable: minimum value which might be acceptable if other characteristics compensated for it, and below which the system would have to be rejected
   - Target range: the range of values within which it is planned the quality measurement value should be in.
   - Now: value applies currently.

Practical 5

1. Prepare Risk table (Chapter 5)
   - Identify 1 potential **risk** in your project. Briefly describe the risk and estimate its probability and impact. Lastly, your risk mitigation, monitoring and management plans

2. Ethics and professional conduct for project management
   - Based on the Stakeholder Register, describe two appropriate strategies for **engaging key stakeholders** (specifically, the most influential/powerful stakeholder *and* potential end-users of the system)
   - Referring to the selected software process model, explain why it is also important to **disclose the disadvantages** of the chosen model to relevant stakeholders.
   - If your project is significantly behind schedule, propose two **corrective actions** to bring the project back on track. For each action, evaluate two advantages and two disadvantages.

Practical 6

1. Each team: prepare the presentation slides content for all assignment tasks.
2. Presentation marks given to each member..

Screenshot for project schedule

Gantt chart

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		Planning & Requirements Gathering	13 days	Mon 21/4/25	Thu 8/5/25		
2		Project Initiation	5 days	Mon 21/4/25	Fri 25/4/25		
3		Define project objectives and goals	2 days	Mon 21/4/25	Tue 22/4/25		Koi Wai Jian
4		Identify key stakeholders & user groups	2 days	Mon 21/4/25	Tue 22/4/25		Wong Xue Jia
5		Obtain project approval, sign-offs, and funding	3 days	Wed 23/4/25	Fri 25/4/25	4,3	Koi Wai Jian,Ong Jia Xin
6		Assign initial roles and responsibilities	1 day	Wed 23/4/25	Wed 23/4/25	4,3	Wong Xue Jia
7		Requirements Analysis	7 days	Thu 24/4/25	Mon 5/5/25		
8		Gather business and technical requirements	2 days	Thu 24/4/25	Fri 25/4/25	6	Lim Yu Kang
9		Conduct interviews, surveys, and feedback collection	2 days	Thu 24/4/25	Fri 25/4/25	6	Wong Xue Jia
10		Analyze customer pain points and staff needs	2 days	Mon 28/4/25	Tue 29/4/25	8,9	Koi Wai Jian
11		Define functional and non-functional requirements	2 days	Wed 30/4/25	Fri 2/5/25	10	Lim Yu Kang
12		Create user stories and system use cases	2 days	Wed 30/4/25	Fri 2/5/25	10	Wong Xue Jia
13		Define success metrics and KPIs	1 day	Mon 5/5/25	Mon 5/5/25	11,12	Koi Wai Jian
14		System Design & Planning	4 days	Mon 5/5/25	Thu 8/5/25		
15		Create high-level system architecture (hardware + software flow)	2 days	Mon 5/5/25	Tue 6/5/25	11	Ong Jia Xin,Wong Xue Jia
16		Design initial UI wireframes and customer interaction flows	2 days	Mon 5/5/25	Tue 6/5/25	12	Khoo Kai Xiang
17		Identify and list required hardware (kiosk, scanner, printer, NFC, etc.)	1 day	Mon 5/5/25	Mon 5/5/25	11	Wong Jern Hao
18		Select tech stack (frameworks, tools, third-party services)	2 days	Mon 5/5/25	Tue 6/5/25	11	Lim Yu Kang
19		Develop detailed project timeline	2 days	Wed 7/5/25	Thu 8/5/25	15,16,17,1	Wong Xue Jia
20		Risk identification and mitigation strategy	1 day	Wed 7/5/25	Wed 7/5/25	15,16	Ong Jia Xin
21		Requirements and Planning Phase Complete	1 day	Thu 8/5/25	Thu 8/5/25		

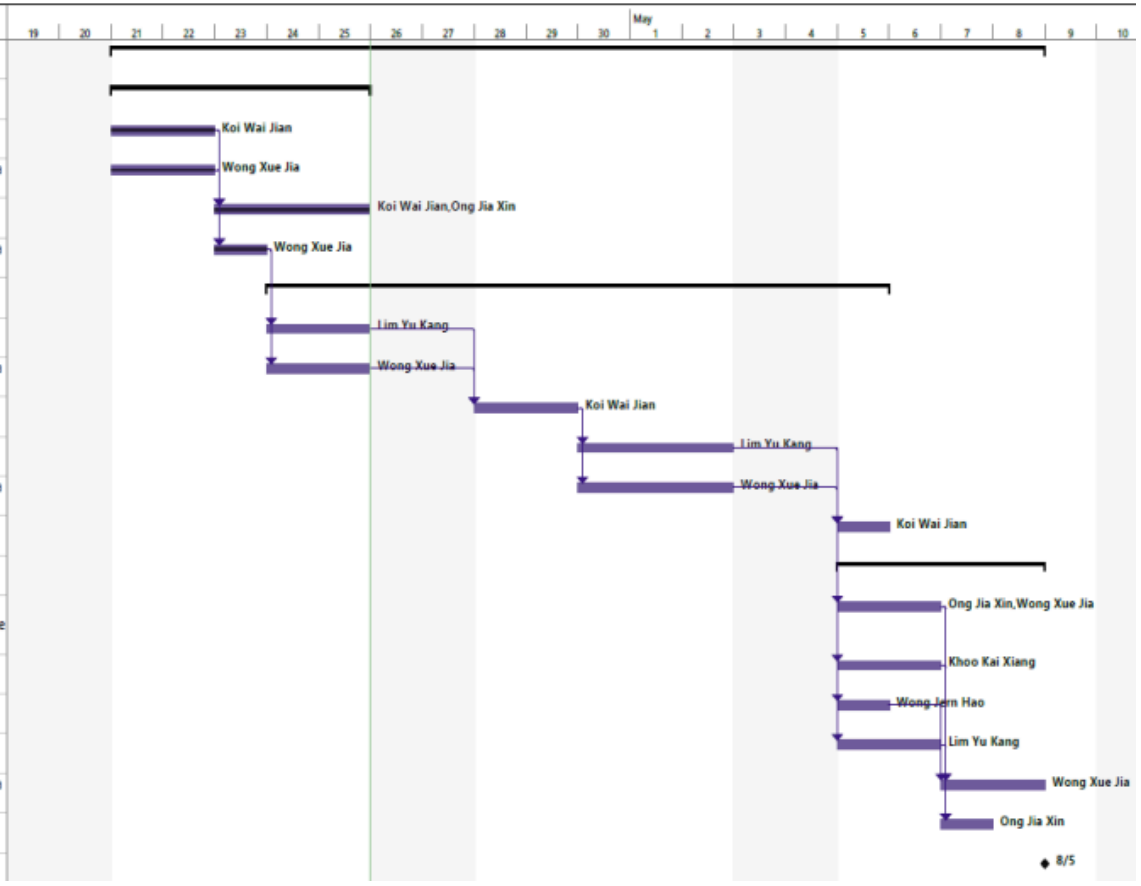
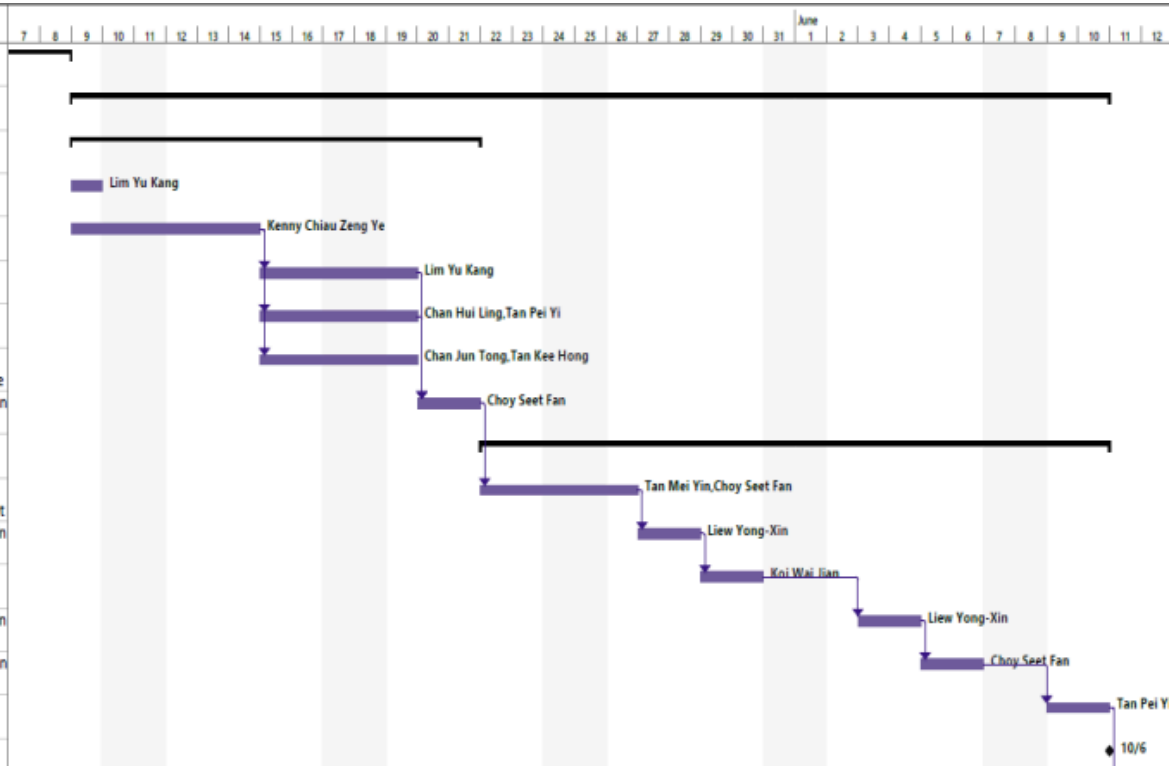


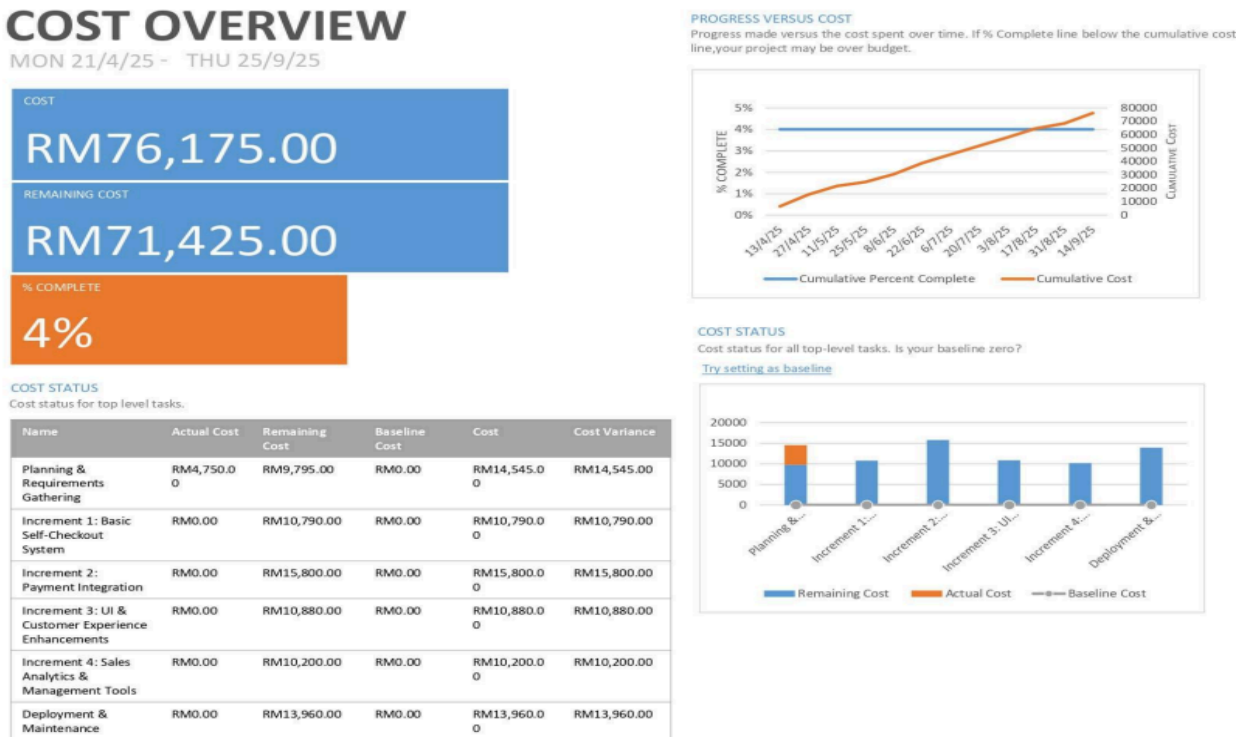
Figure 2: Task id 1 to 21 Planning & Requirements Gathering stages

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		Planning & Requirements Gathering	13 days	Mon 21/4/25	Thu 8/5/25		
22		Increment 1: Basic Self-Checkout System	21 days	Fri 9/5/25	Tue 10/6/25		
23		Develop Core System Features	8 days	Fri 9/5/25	Wed 21/5/25		
24		Set up version control and project repository (e.g., GitHub)	1 day	Fri 9/5/25	Fri 9/5/25	19	Lim Yu Kang
25		Design and implement relational database schema	3 days	Fri 9/5/25	Wed 14/5/25	19	Kenny Chiau Zeng Ye
26		Implement product barcode/QR code scanning functionality	3 days	Thu 15/5/25	Mon 19/5/25	25	Lim Yu Kang
27		Develop item listing and cart updating logic	3 days	Thu 15/5/25	Mon 19/5/25	25	Chan Hui Ling,Tan Pei
28		Create basic UI layout for item scanning and review	3 days	Thu 15/5/25	Mon 19/5/25	25	Chan Jun Tong,Tan Kee
29		Validate scanned product info with product database	2 days	Tue 20/5/25	Wed 21/5/25	26,27	Choy Seet Fan
30		Testing & Optimization	13 days	Thu 22/5/25	Tue 10/6/25		
31		Conduct internal unit and integration tests on cart features	3 days	Thu 22/5/25	Mon 26/5/25	29	Tan Mei Yin,Choy Seet
32		Debug barcode recognition errors and UI responsiveness	2 days	Tue 27/5/25	Wed 28/5/25	31	Liew Yong-Xin
33		Conduct employee walkthroughs and collect observations	2 days	Thu 29/5/25	Fri 30/5/25	32	Koi Wai Jian
34		Deploy pilot kiosk in 1 test store	2 days	Tue 3/6/25	Wed 4/6/25	33	Liew Yong-Xin
35		Gather usage data and customer feedback	2 days	Thu 5/6/25	Fri 6/6/25	34	Choy Seet Fan
36		Perform basic performance tuning based on feedback	2 days	Mon 9/6/25	Tue 10/6/25	35	Tan Pei Yi
37		Basic Checkout Module Deployed & Validate	1 day	Tue 10/6/25	Tue 10/6/25		



Increment 1:

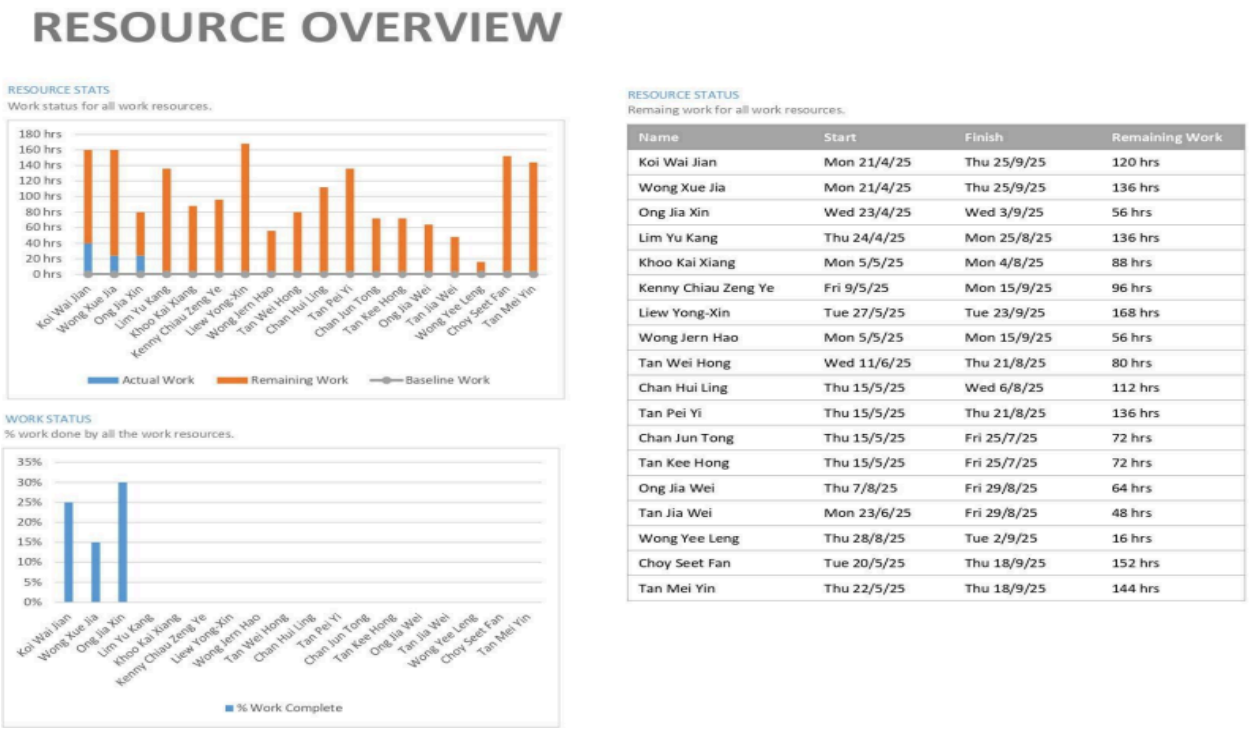
Reports



Name	Actual Cost	Remaining Cost	Baseline Cost	Cost	Cost Variance
Planning & Requirements Gathering	RM4,750.00	RM9,795.00	RM0.00	RM14,545.00	RM14,545.00
Increment 1: Basic Self-Checkout System	RM0.00	RM10,790.00	RM0.00	RM10,790.00	RM10,790.00
Increment 2: Payment Integration	RM0.00	RM15,800.00	RM0.00	RM15,800.00	RM15,800.00
Increment 3: UI & Customer Experience Enhancements	RM0.00	RM10,880.00	RM0.00	RM10,880.00	RM10,880.00
Increment 4: Sales Analytics & Management Tools	RM0.00	RM10,200.00	RM0.00	RM10,200.00	RM10,200.00
Deployment & Maintenance	RM0.00	RM13,960.00	RM0.00	RM13,960.00	RM13,960.00

Figure 3:Cost overview

Explain the purpose of this report



Name	Start	Finish	Remaining Work
Koi Wai Jian	Mon 21/4/25	Thu 25/9/25	120 hrs
Wong Xue Jia	Mon 21/4/25	Thu 25/9/25	136 hrs
Ong Jia Xin	Wed 23/4/25	Wed 3/9/25	56 hrs
Lim Yu Kang	Thu 24/4/25	Mon 25/8/25	136 hrs
Khoo Kai Xiang	Mon 5/5/25	Mon 4/8/25	88 hrs
Kenny Chiau Zeng Ye	Fri 9/5/25	Mon 15/9/25	96 hrs
Liew Yong-Xin	Tue 27/5/25	Tue 23/9/25	168 hrs
Wong Jern Hao	Mon 5/5/25	Mon 15/9/25	56 hrs
Tan Wei Hong	Wed 11/6/25	Thu 21/8/25	80 hrs
Chan Hui Ling	Thu 15/5/25	Wed 6/8/25	112 hrs
Tan Pei Yi	Thu 15/5/25	Thu 21/8/25	136 hrs
Chan Jun Tong	Thu 15/5/25	Fri 25/7/25	72 hrs
Tan Kee Hong	Thu 15/5/25	Fri 25/7/25	72 hrs
Ong Jia Wei	Thu 7/8/25	Fri 29/8/25	64 hrs
Tan Jia Wei	Mon 23/6/25	Fri 29/8/25	48 hrs
Wong Yee Leng	Thu 28/8/25	Tue 2/9/25	16 hrs
Choy Seet Fan	Tue 20/5/25	Thu 18/9/25	152 hrs
Tan Mei Yin	Thu 22/5/25	Thu 18/9/25	144 hrs

Figure 3.1 Resource overview