FACULTY OF COMPUTING

SEMESTER 2 2023/2024

SECP2613 – SYSTEM ANALYSIS AND DESIGN

SECTION 1

ASSIGNMENT 1

LECTURER: DR. MUHAMMAD IQBAL TARIQ BIN IDRIS

GROUP

STUDENT NAME	MATRIC NO
JOANNE CHING YING XUAN	A23CS0227
EVELYN GOH YUAN QI	A23CS0222
CHUA JIA LIN	A23CS0069
LIM YU HAN	A23CS0241

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QUESTION 1

a) I will assess the feasibility of the system project by looking at technical, economic, and operational aspects. This necessitated an examination of the technology available to suit users' needs, the expense of system research, and whether the system would be used.

b) Based on Abu's statements, the operational feasibility suggests that nothing should change. This is because relevant stakeholders are happy and comfortable with the current system, and Abu believes there are no significant flaws with it.

c) Economic feasibility entails calculating the cost-benefit analysis (CBA) for implementing a new system and determining if time and funds are available to create it. Abu stated that the shift required a large expenditure. Furthermore, while the current system is still running properly, the potential benefit of the new system is negligible.

d) Technological feasibility determines whether the existing technical resources are adequate for the new system. Abu has spoken with the development team, and they all agree that the technology to update the system is available. Therefore, this project is realizable.

e) Based on what Ahmad and Abu have discussed, I advocate not proposing a full-blown system now. This is due to high stakeholder satisfaction with the current system, which may prevent the new system from becoming operationally feasible, as well as being pricey. I agree with Abu that they can use various techniques to improve the company's image.

QUESTION 2

Work Breakdown Structure (WBS) for Student Registration Computer System

Activity	Duration (Weeks)	Predecessor
1.0 Planning	4	None
1.1 Define problems and determine goals for new system		
1.1.1 Interview and questionnaire		
1.2 Form project management team		
1.3 Conduct feasibility study		
1.3.1 Defining objectives		
1.3.2 Determining resources		
1.3.2.1 Operational feasibility		
1.3.2.2 Technical feasibility		
1.3.2.3 Economic feasibility		
1.3.2.3.1 Perform Cost-Benefit Analysis		
1.4 Project scheduling		
1.4.1 Gantt Chart		
2.0 Analysis	2	Planning
2.1 Determine end users needs and clarify specific details required for new system		
2.1.1 Interview and questionnaire		
3.0 Design	6	Analysis
3.1 Define overall system architecture		
3.2 Design algorithms and data structure		
3.3 Create data flow diagrams		
3.4 Prepare and present system proposal		
4.0 Development	8	Design
4.1 Develop software		
4.2 Create documentation		
4.2.1 Create procedure manuals		
4.2.2 Create Websites with Frequently Asked Questions		

5.0 Testing	4	Development
5.1 Security testing		
5.2 Performance testing		
5.3 Usability testing		
5.4 Compatibility testing		
6.0 Implementation	4	Testing
6.1 Do user training		
6.2 Install system		
6.3 Converting from old system to new system		
6.4 Data migration		

QUESTION 3

Report: Main Differences in Managing Agile Projects vs Traditional Projects

Introduction

As modern project management continues to develop, distributed teams and agile methodologies become more prominent. This report will describe the fundamental differences in managing agile projects with distributed teams versus traditional projects with co-located teams.

Key Differences

1. Communication Challenges

Agile projects rely heavily on frequent and open communication. Due to limited face-to-face encounters, time zone differences, and geographical dispersion, agile projects using distributed teams have considerable communication issues. Team members must rely extensively on virtual communication channels such as emails, video calls, and messaging apps. On the other hand, traditional projects gain from co-located teams' easier and faster communication, which speeds up decision-making and problem-solving.

2. Collaboration Dynamics

Agile distributed teams rely on online platforms and technologies for virtual collaboration to exchange work, give feedback, and manage tasks. This reliance on technology adds a level of complication that traditional initiatives may not encounter to the same degree. In traditional projects, in-person collaboration encourages direct and spontaneous interactions among team members, which can boost productivity and teamwork.

3. Cultural Sensitivity

People in distributed agile teams frequently come from different cultural backgrounds, thus understanding cultural norms and variances is important. To create a cohesive work atmosphere, managers need to encourage cultural awareness, inclusivity, and successful cross-cultural communication. Traditional projects may have more culturally homogeneous teams, simplifying the management of cultural diversity.

4. Time Zone Coordination

One of the most important aspects of managing distributed agile teams is managing time zone differences. Careful coordination and flexibility are needed for scheduling meetings, coordinating project updates, and guaranteeing ongoing communication across time zones. On the other hand, traditional projects with co-located teams encounter fewer issues due to time zone variations, allowing for more efficient workflow management and communication.

5. Autonomy and Empowerment

Agile methodologies foster autonomy and empowerment among team members, enabling them to make decisions and accept responsibility for their work. Because there is less direct supervision, distributed agile teams frequently operate with more autonomy, which makes it necessary to establish trust and communicate expectations clearly. In traditional projects, team members may receive more direct supervision and coaching from supervisors.

Conclusion

Managing agile projects with distributed teams poses unique problems when compared to traditional projects with co-located teams. A combination of cultural sensitivity, adaptation, technological proficiency, communication skills, and risk management techniques suited to the unique dynamics of each project environment are needed for effective management in both situations.

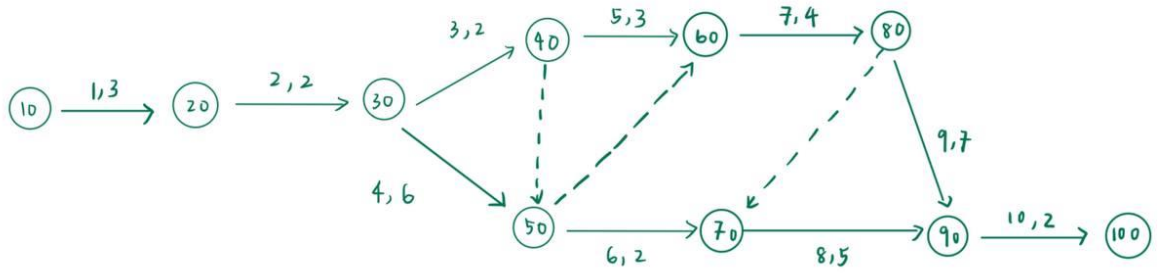
QUESTION 4

a.

	A	B	C	D	E
1	**Costs**	**Year 0**	**Year 1**	**Year 2**	**Year 3**
2					
3	**Development Costs**				
4	*Hardware*	50000			
5	*Software*	15000			
6	*Training*	30000			
7	*Consulting*	80000			
8	*Data Conversion*	40000			
9	**Total**	215000			
10					
11	**Production Costs**				
12	*Supplies*		15000	15000	15000
13	*IS Salaries*		75000	82500	90750
14	*Upgrades*		10000	10000	10000
15	**Annual Prod.Costs**		100000	107500	115750
16	(Present Value)		74074	58984	47046
17	**Accumulated Costs**		289074	348058	395104
18					
19	**Benefits**				
20	*Improved Customer Service*		150000	180000	216000
21	*Increase Productivity*		150000	187500	234375
22	**Annual Benefits**		300000	367500	450375
23	(Present Value)		222222	201646	183051
24	**Accumulated Benefits**		222222	423868	606919
25					
26	**Gain or Loss**		-66852	75810	211815
27					
28	**Probitability Index**	0,985			
29					

b. Profitability index = 0.985, showing that it is not a good investment because its index is less than one.

5a)



b)

Path 1:1-2-3-6-8-10

Path 2:1-2-3-5-7-9-10

Path 3:1-2-3-5-7-8-10

Path 4:1-2-4-7-8-10

Path 5:1-2-4-6-8-10

Path 6:1-2-4-7-9-10

c)Critical path:

Path 1:1-2-3-6-8-10=16

Path 2:1-2-3-5-7-9-10=23

Path 3:1-2-3-5-7-8-10=21

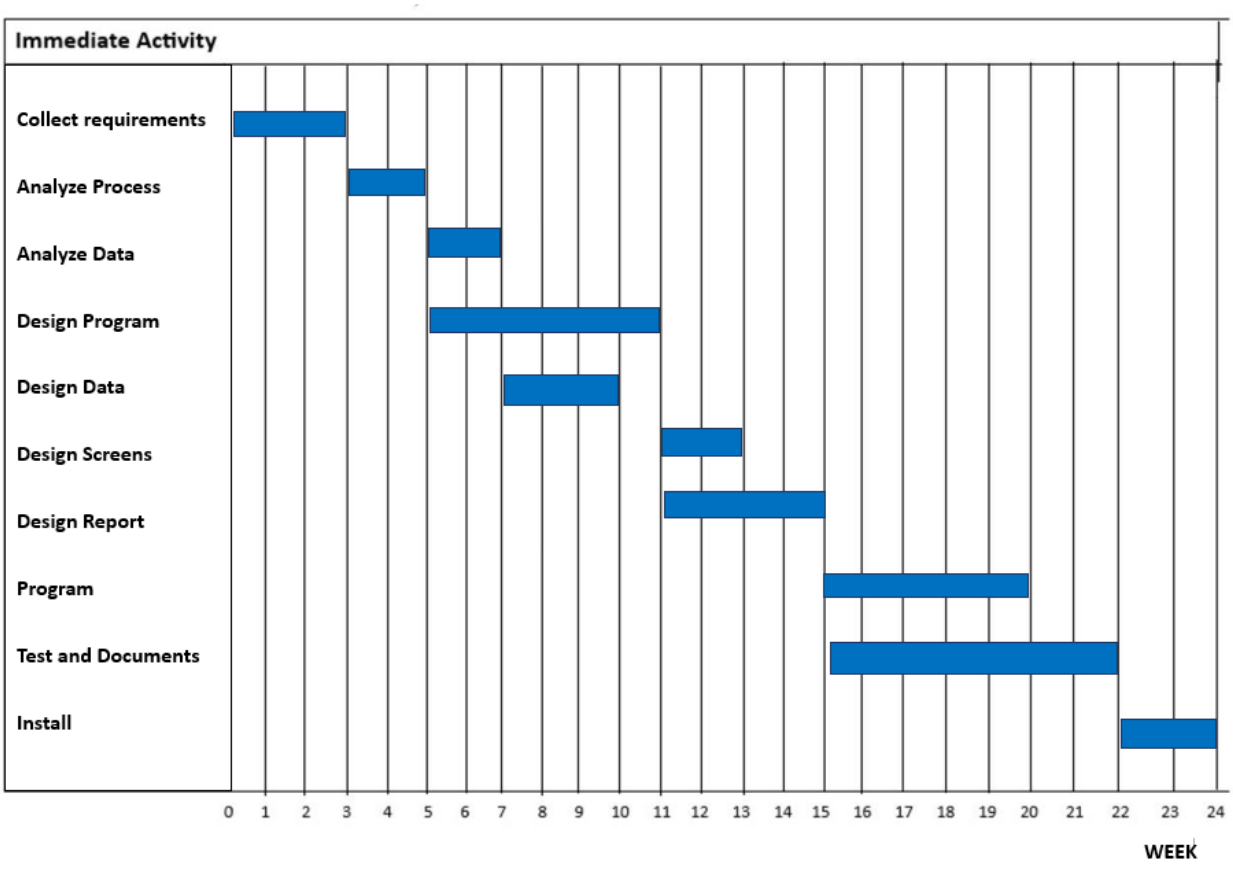
Path 4:1-2-4-7-8-10=22

Path 5:1-2-4-6-8-10=20

Path 6:1-2-4-7-9-10=24

Therefore, critical path which is longest path is path 6: 1-2-4-7-9-10

d)


Immediate Activity
Collect requirements
Analyze Process
Analyze Data
Design Program
Design Data
Design Screens
Design Report
Program
Test and Documents
Install
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
WEEK