



# UNIVERSITY OF SRI JAYEWARDENEPURA

## Faculty of Technology

### ITC 3052 - PROJECT MANAGEMENT

#### ASSIGNMENT

##### Part 1

The assignment requires you to provide the following information:

- Scope Statement (using the scope statement template provided in annexure)
- Gantt chart (MS Project)
- Work Break Down Structure (MS Project)
- List of activities and estimated durations (MS Project)
- Project's start and completion dates (MS Project)
- Network Diagram (MS Project)
- Critical Path (MS Project)

- Key Milestones Identified (MS Project)

### Work Breakdown Structure (WBS)

- Detail of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> (if applicable) level tasks.
- 100% of project, including milestones.
- Structure in Gantt Chart.
- MS Project Gantt chart with times and node dependencies.
- Starting and finishing times for each task
- Project's estimated start and completion dates
- Network diagram showing critical Path

### Project Scope Statement

Project Title	<b>Community Centre Construction for Youth Engagement</b>
Project Objectives	1. Construct a community centre to engage youth in arts, music, and skill development programs. 2. Provide venue hire for local community events. 3. Complete the project within the budget of Rs. 700,000. 4. Ensure the centre is operational by 9th August 2025. 5. Achieve a monthly profit of Rs. 7,000 from programs, workshops, and venue hire.
Scope Description	The project involves the construction of a community centre in a mid-income suburb in Sri Lanka to engage youth aged 12-19. The centre will feature facilities for arts, music, and skill development programs, workshops, and a venue for local community events. The

	project includes land purchase, construction, interior design, utility installation, and program development.
Project Deliverables	<p>1.Direct Output:</p> <ul style="list-style-type: none"> <li>O A fully constructed and operational community centre.</li> <li>O Interior facilities including program rooms, event space, and common areas.</li> <li>O Landscaping around the centre.</li> </ul> <p>2.Additional Outcomes:</p> <ul style="list-style-type: none"> <li>O Project plans and architectural renderings.</li> <li>O Stakeholder engagement reports.</li> <li>O Permits and approval documentation.</li> <li>O Marketing and program development plans.</li> <li>O Final inspection and approval certificates.</li> <li>O Project performance metrics and final report.</li> </ul>
Project Exclusions	<p>1.The project will not cover operational costs beyond the construction phase.</p> <p>2.The project will not include any residential facilities.</p> <p>3.Ongoing maintenance and staffing after the handover are excluded.</p> <p>4.Programs outside the scope of arts, music, and skill development are not included.</p> <p>5.Any additional land development beyond the centre’s immediate surroundings is excluded.</p>
Project Constraints	<p>1.Cost Constraint: Total project budget not to exceed Rs. 700,000.</p> <p>2.Schedule Constraint: Project start date is 2nd September 2024, with completion by 9th August 2025.</p> <p>3.Quality Constraint: Adherence to building codes and standards.</p> <p>4.Resource Constraint: Limited availability of skilled labor and materials within budget constraints.</p> <p>5.Permits and Approvals: Timely acquisition of necessary permits and approvals.</p>
Project Schedule	<p><b>Project Start Date:</b> 2nd September 2024</p> <p><b>Expected Project Completion Date:</b> 9th August 2025</p> <p><b>Project Timeline Overview:</b></p>

	<ul style="list-style-type: none"> <li>• Planning and Admin: 2nd September 2024 – 30th October 2024</li> <li>• Substructure: 4th November 2024 – 26th January 2025</li> <li>• Envelope: 13th January 2025 – 3rd April 2025</li> <li>• Finishes and Finish Carpentry: 6th April 2025 – 26th June 2025</li> <li>• Utilities and Systems: 29th June 2025 – 28th July 2025</li> <li>• Program Preparation and Marketing: 15th June 2025 – 31st July 2025</li> <li>• Construction Completion and Handover: 1st August 2025 – 9th August 2025</li> </ul>
Key Milestones	<ol style="list-style-type: none"> <li>1. Project Kickoff: 2nd September 2024</li> <li>2. Land Purchase Completed: 11th October 2024</li> <li>3. Permits and Approvals Obtained: 22nd November 2024</li> <li>4. Foundation Completion: 6th December 2024</li> <li>5. Framing Completion: 31st January 2025</li> <li>6. Exterior Envelope Completion: 3rd April 2025</li> <li>7. Interior Finishes Completion: 26th June 2025</li> <li>8. Utilities Installation Completion: 28th July 2025</li> <li>9. Programs and Marketing Ready: 31st July 2025</li> <li>10. Final Inspection and Approval: 7th August 2025</li> <li>11. Project Handover: 9th August 2025</li> </ol>
Technical Requirements	<p>Building Codes and Standards: Compliance with local building codes and safety regulations. Adherence to structural, electrical, and plumbing standards.</p> <p>Construction Specifications: Use of specified construction materials. Quality control measures throughout the construction process. Detailed architectural and engineering plans.</p> <p>Utility Systems: Installation of reliable and efficient electrical, plumbing, HVAC, and internet systems. Compliance with environmental regulations for utilities.</p> <p>Interior and Exterior Finishes: High-quality finishes for floors, walls, and ceilings.</p>

	<p>Durable and aesthetically pleasing exterior finishes.</p> <p>Program Facilities: Adequate space and facilities for arts, music, and skill development programs. Necessary equipment and resources for program delivery.</p> <p>Accessibility: Ensuring the building is accessible to individuals with disabilities. Compliance with relevant accessibility standards.</p>
Project Assumptions	<p>1.The identified land for construction will be available for purchase at the estimated cost. If false, alternative land must be found, potentially delaying the project.</p> <p>2.Required permits and approvals will be granted without significant delays. If false, project timeline will be extended, affecting completion date.</p> <p>3.Sufficient skilled labor will be available within the budget constraints. If false, labor costs may increase, impacting the project budget.</p> <p>4.Materials and equipment will be available at projected costs. If false, material costs may rise, impacting the budget.</p> <p>5.The community will support and participate in the programs offered. If false, revenue projections may not be met, affecting financial viability.</p>
Project Acceptance Criteria	<p>1.The building structure must comply with all local building codes and regulations.</p> <p>2.All interior and exterior finishes must meet the specified design standards.</p> <p>3.Utility systems (electric, plumbing, HVAC, internet) must be fully operational.</p> <p>4.The facility must be inspected and approved by local authorities.</p> <p>5.All programs and services must be ready to launch by the completion date.</p> <p>6.A final walkthrough with stakeholders must be conducted and approved.</p>

Approval Process	Title and name:	Date:  07/08/2024
	Investor: Saman Perera Signature: Project manager: Samoda Charana Signature: Finance manager: Lauren Tidswell Signature:	

## Part 2

The assignment requires you to provide the following information:

### 1. Risk Analysis (MS Word)

Risk Assessment:

Risk	Probability	Impact	Description
Land Purchase Issues	High	High	Potential difficulty in acquiring suitable land or higher-than-expected costs.
Permit and Approval Delays	Medium	High	Delays in obtaining necessary permits and approvals can impact the project timeline.
Budget Overruns	Medium	High	Unexpected costs for materials, labor, or

			unforeseen expenses may exceed the budget.
Labor Shortages	Medium	Medium	Difficulty in finding skilled labor within budget constraints can delay the project.
Material Shortages	Low	Medium	Unavailability of materials can delay construction.
Weather-related Delays	Low	Medium	Adverse weather conditions can delay construction activities.
Financial Viability	Medium	High	Risk of not achieving the projected profit, impacting the financial viability of the project.

**Risk Response Plan:**

Risk	Response Strategy	Description
Land Purchase Issues	Mitigate	Conduct thorough research and due diligence before

		purchasing. Set aside contingency funds.
Permit and Approval Delays	Mitigate	Start the permit process early and maintain close communication with authorities.
Budget Overruns	Mitigate	Establish a detailed budget and include a contingency buffer. Regularly monitor expenses
Labor Shortages	Mitigate	Establish contracts with reliable labor providers early. Have backup labor resources.
Material Shortages	Accept	Maintain good relationships with multiple suppliers. Order materials well in advance.
Weather-related Delays	Accept	Monitor weather forecasts and adjust the project schedule as needed.
Financial Viability	Mitigate	Conduct a detailed financial analysis and regularly review revenue and expense projections.



## 2. Stakeholder Management Plan (MS Word)

**Stakeholder Identification:**

<b>Stakeholder</b>	<b>Role/Interest</b>	<b>Communication Needs</b>
Saman Perera	Project Owner	Regular updates on project progress
Local Authorities	Permit and approval providers	Detailed plans and compliance reports
Community Members	Beneficiaries	Informational sessions and engagement
Contractors	Construction and utility installation	Detailed schedules and requirements
Program Coordinators	Implementation of arts, music, skill programs	Detailed program development and updates
Investors	Financial stakeholders	Financial performance and ROI updates

**Stakeholder Engagement Strategy:**

<b>Stakeholder</b>	<b>Engagement Strategy</b>
Saman Perera	Regular meetings and progress reports
Local Authorities	Compliance checks and regular updates
Community Members	Public meetings and informational brochures
Contractors	Contractual agreements and progress meetings
Program Coordinators	Collaborative planning sessions and reviews

Investors	Financial updates and performance reviews
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### 3. Communication Plan (MS Word)

#### Communication Objectives:

- Ensure all stakeholders are informed about project progress.
- Facilitate smooth communication among team members and contractors.
- Address any concerns or issues promptly.
- Maintain transparency with investors and local authorities.

#### Communication Methods:

Communication Type	Audience	Frequency	Responsible Party
Project Status Report	Saman Perera, Investors	Monthly	Project Manager
Progress Meetings	Contractors	Weekly	Project Manager
Public Meetings	Community Members	Quarterly	Community Liaison
Compliance Updates	Local Authorities	As needed	Compliance Officer
Financial Reports	Investors	Quarterly	Financial Analyst
Program Updates	Program Coordinators	Bi- weekly	Program Manager

### 4. Total Project Cost (MS Word)

Item	Cost(Rs.)
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Research and Preliminary Costs	20,000
Land Purchase and Preparation	200,000
Building Construction	300,000
Interior Costs	60,000
Landscaping	40,000
Program Development, Marketing, Advertising	15,000
Kitchen Equipment	15,000
<b>Total</b>	<b>650,000</b>

#### 5. ROI-calculated for 3 years (MS Word)

##### Monthly Revenue:

- Programs and Workshops: Rs. 2,500
- Venue Hire: Rs. 4,500
- Total Monthly Revenue: Rs. 7,000

Annual Revenue: Rs. 7,000 x 12 = Rs. 84,000

Total Revenue over 3 Years: Rs. 84,000 x 3 = Rs. 252,000

Total Project Cost: Rs. 650,000

Profit from Sale of Centre: Rs. 950,000 - Rs. 650,000 = Rs. 300,000

Total Profit over 3 Years: Rs. 300,000 + Rs. 252,000 = Rs. 552,000

##### ROI Calculation:

$$\text{ROI} = \frac{\text{Total Profit}}{\text{Total Investment}} \times 100$$

$$\text{ROI} = \frac{552,000}{650,000} \times 100 = 84.92\%$$

#### 6. Payback Period (MS Word)

$$\text{Payback Period} = \frac{\text{Total Investment}}{\text{Annual Revenue}}$$

$$\text{Payback Period} = \frac{650,000}{84,000} = 7.74 \text{ months}$$

7. A brief discussion of the results in regards to the project ( i.e. go ahead or abandon the project? Why?) (MS Word)

#### Discussion of Results

Based on the financial analysis and risk assessment, the project appears to be a viable and beneficial investment. The expected ROI of approximately 84.92% over three years is attractive, and the payback period of around 7.74 months indicates a quick recovery of the initial investment. Additionally, the community centre will provide significant social benefits by engaging the youth in productive activities, potentially reducing antisocial behaviour in the suburb.

#### Recommendation:

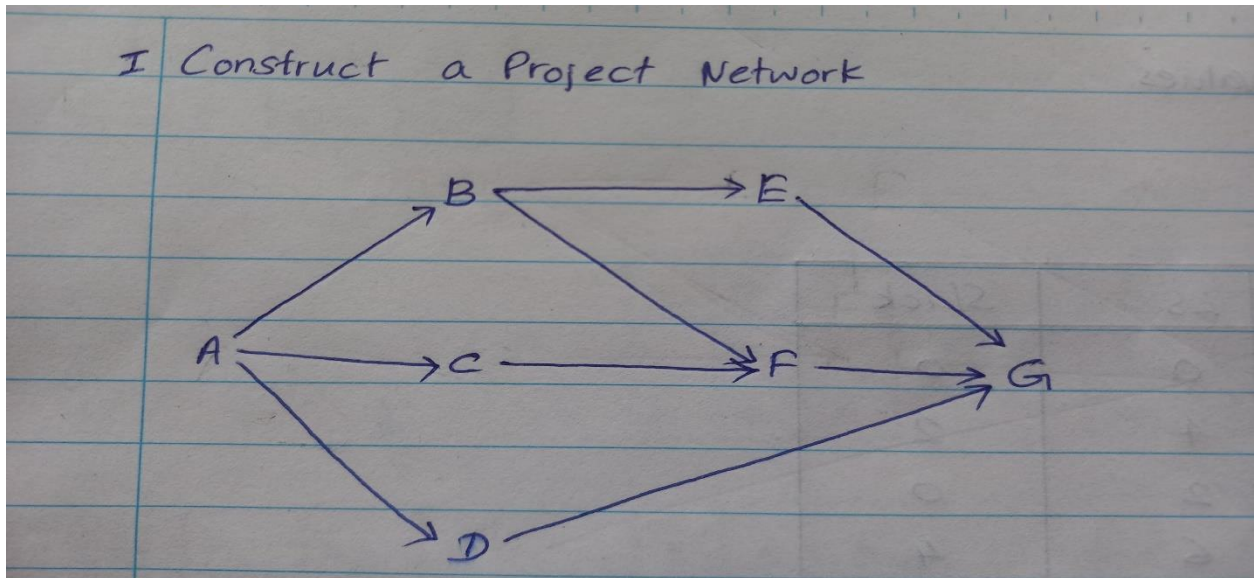
Go ahead with the project. The financial returns, combined with the positive community impact, make this a worthwhile investment. Regular monitoring and risk mitigation strategies should be in place to address any potential issues promptly.

### Part 3

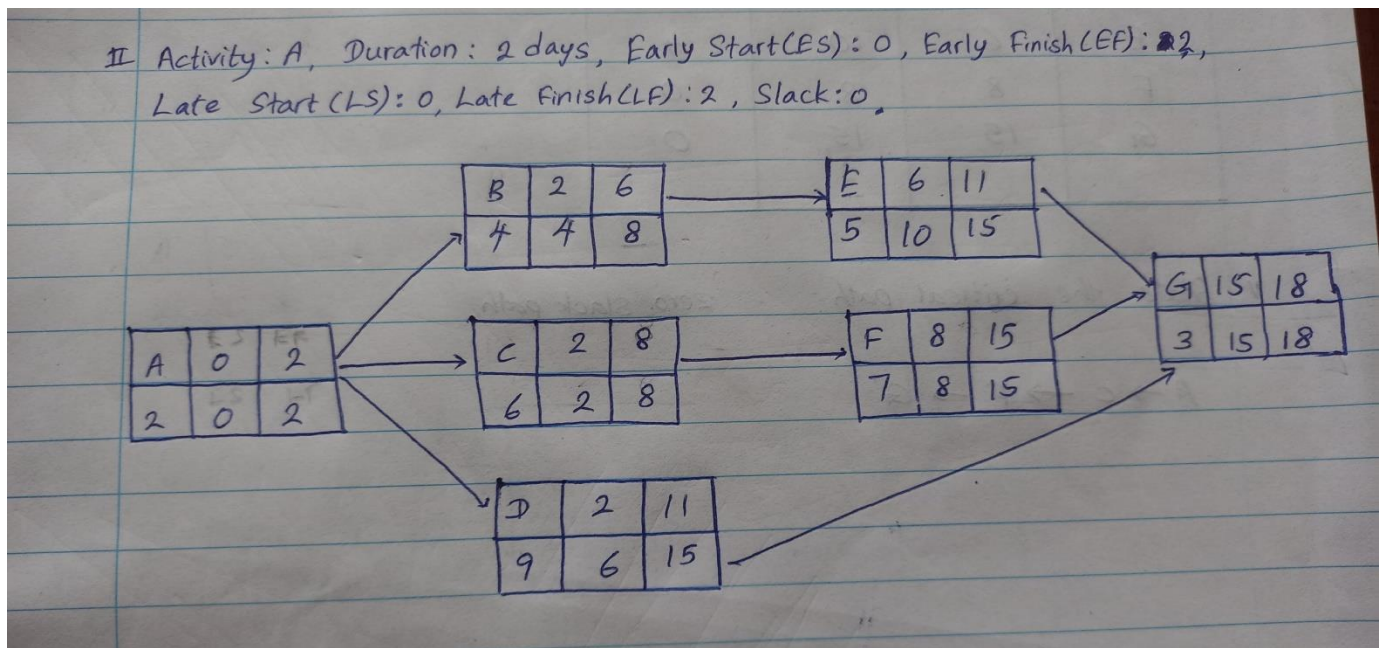
The following details are available for a project.

Activity	Duration (Days)	Preceding Activity	Labours
A	2	-	3
B	4	A	2
C	6	A	4
D	9	A	3
E	5	B	4
F	7	B,C	2
G	3	D,E,F	4

## I. Construct a project network



## II. Calculate forward and backward passes using following activity format



## III. Determine project completion time.

### III Determine Project Completion time

The project completion time is the EF of the last activity, which is Activity G.

Project completion time : 18 days.

### IV. Calculate slack values.

#### IV Calculate Slack values.

Slack = LS - ES

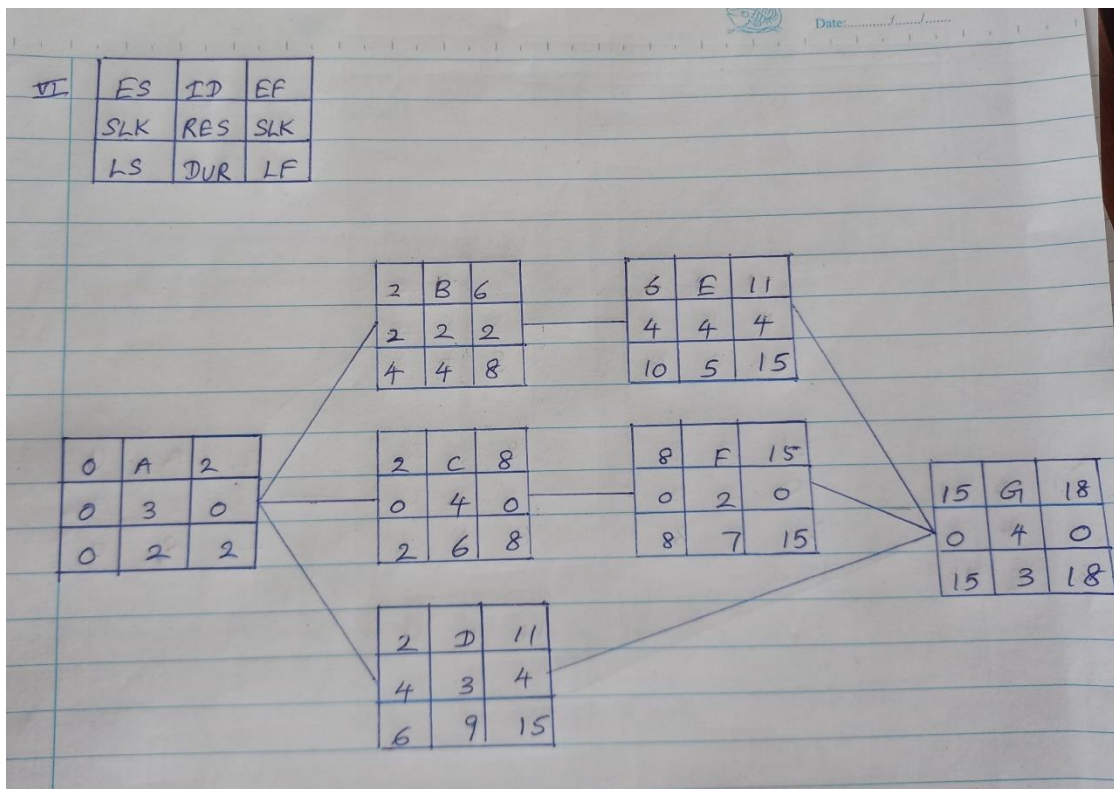
Activity	ES	LS	Slack
A	0	0	0
B	2	4	2
C	2	2	0
D	2	6	4
E	6	10	4
F	8	8	0
G	15	15	0



V. State the critical path.

III Determine Project Completion time  
 The project completion time is the EF of the last activity, which is Activity G.  
 Project completion time : 18 days.

VI. Assume, you cannot use more than 9 labours per day and based on that limitation, manually level your resources in the above network diagram.



VII. Construct a new project network after adjusting the dates according to the resource constrain.

A c t i v i t y																		
A	3 p	3 p																
B			2 p	2 p	2 p	2 p												
C			4 p	4 p	4 p	4 p	4 p	4 p										
D			3 p	3 p	3 p	3 p	3 p	3 p	3 p	3 p	3 p							
E									4 p	4 p	4 p	4 p	4 p					
F									2 p	2 p	2 p	2 p	2 p	2 p	2 p			
G																4 p	4 p	4 p
D a y s	1	2	3	4	5	6	7	8	9	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8
R e s o u r c	3 p	3 p	9 p	9 p	9 p	9 p	7 p	7 p	9 p	9 p	9 p	6 p	6 p	2 p	2 p	4 p	4 p	4 p



e																			
s																			

