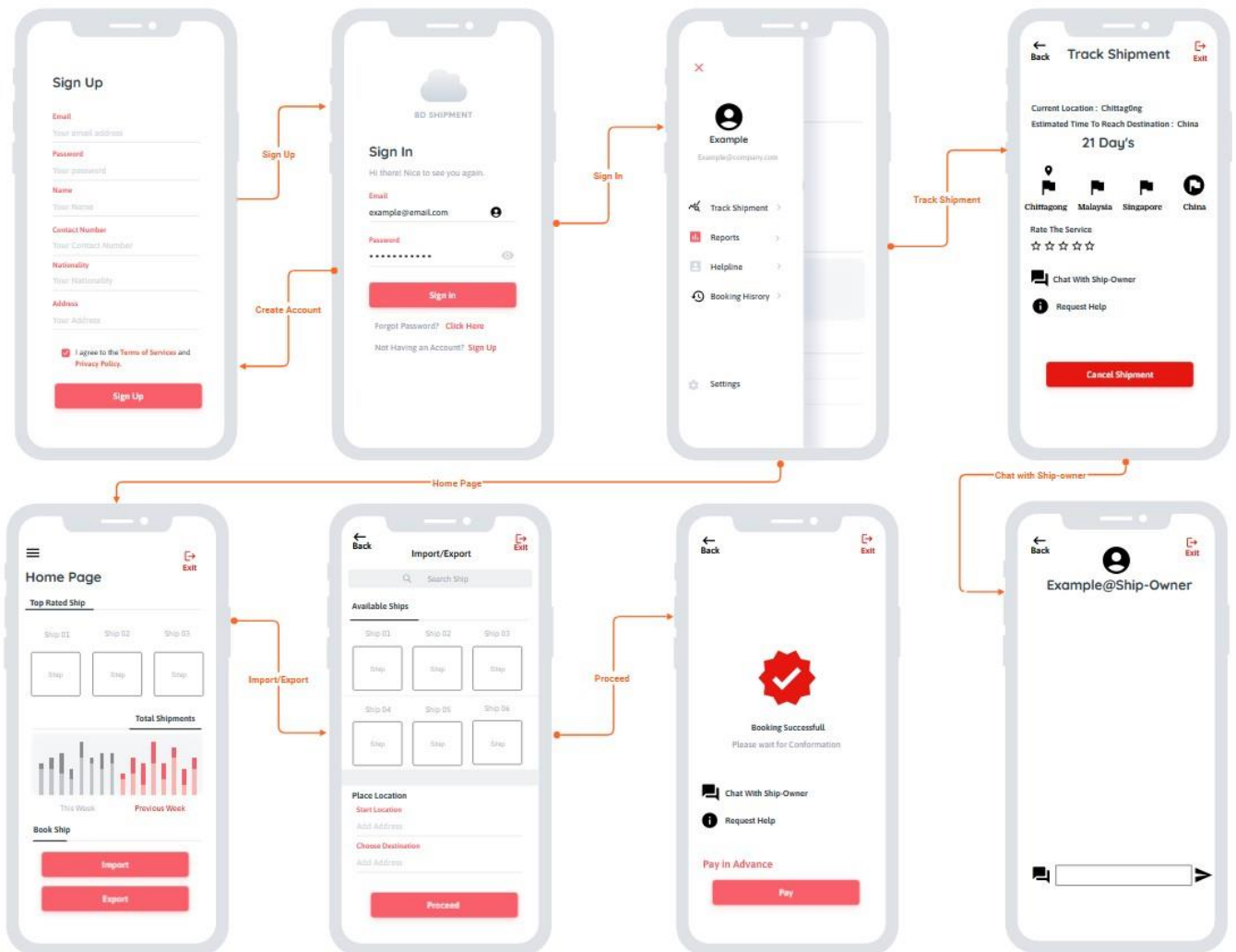
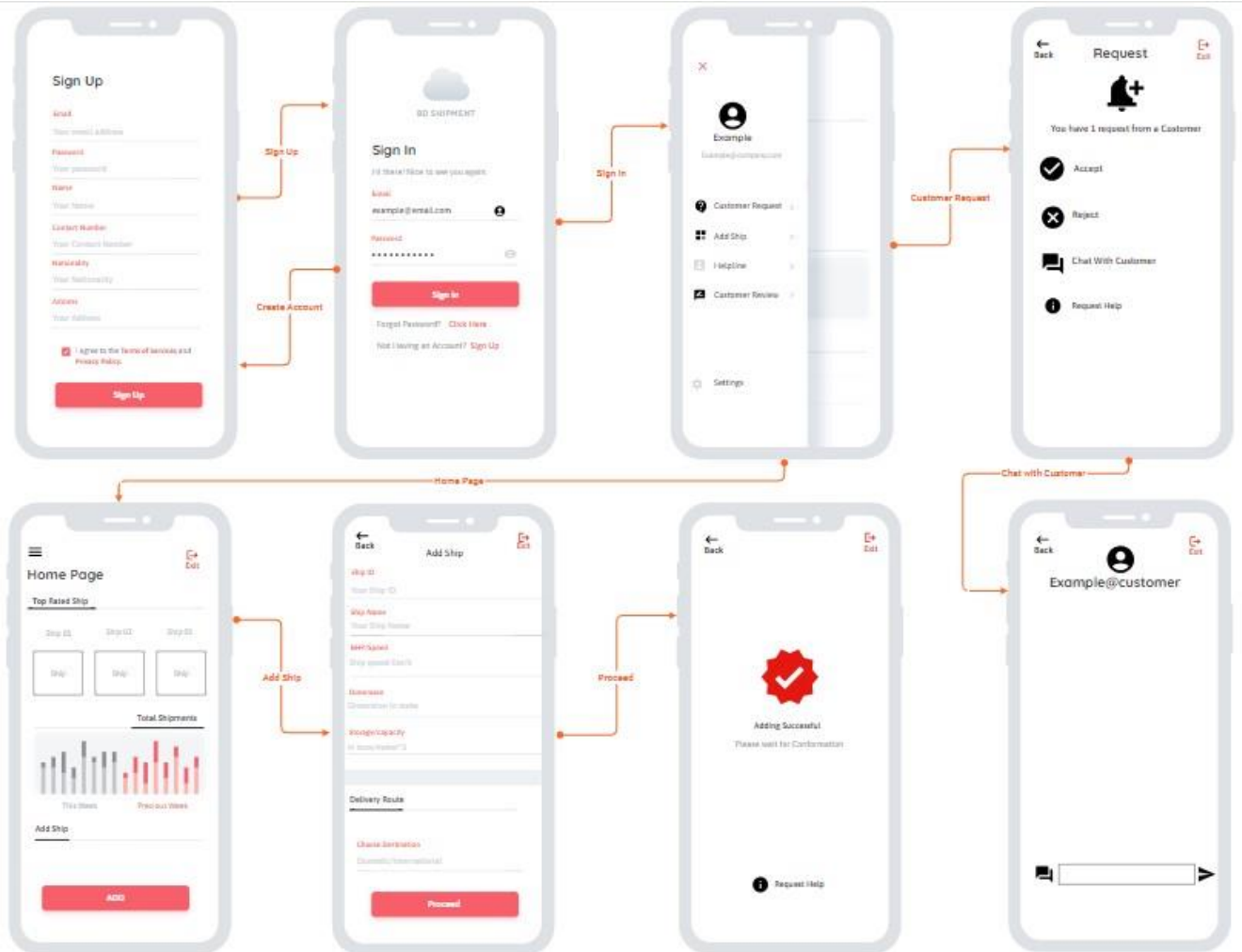


Customer



Ship-Owner



```

graph TD
    SignUp[Sign Up] -- Sign Up --> SignIn[Sign In]
    SignIn -- Sign In --> Home[Home Page]
    SignIn -- Sign In --> Terminals[Operating Terminals]
    Home -- Home Page --> Terminals
    Terminals -- Operating Terminals --> Emergency[Emergency Response]
    Terminals -- Emergency Response --> ManageDock[Manage Dock]
    ManageDock -- Manage Dock --> Emergency
    Emergency -- Emergency Response --> Home
    Emergency -- Emergency Response --> Terminals
    ManageDock -- Manage Dock --> Home
    ManageDock -- Manage Dock --> Terminals
    
```

Test Plan for Shipping Port Management

The test plan for the "Shipping Port Management" project outlines a comprehensive strategy involving functional, performance, security, usability, and regression testing across key modules, including Terminal Operations, Shipping Line Management, Ship Tracking, Add New Ship, Customer Request Handling, Emergency Response, Booking ship for Import/Export, and Dock Management. A total of four testers, including a test lead and three test analysts, will conduct unit, integration, system, and user acceptance testing (UAT) in a dedicated environment. The plan includes a detailed schedule, risk management, and entry/exit criteria to ensure the system meets all specified requirements before final stakeholder approval and release.

Project Name : Shipping Port Management			Test Designed by : Bishal Paul	
Test Case ID : FR_A3			Test Designed date : 02.09.2024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Emergency Response Session			Test Execution date :	
Test Title : Verify Emergency Response Functionality				
Description : Test the functionality of the Emergency Response system.				
Precondition (If any) : Necessary equipment and resources (e.g., alarms, communication tools) are connected and operational.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. Initiate an Emergency Alert 2. Verify Notification to Authorities 3. Activation of Emergency Protocols	Emergency Request: 1 request from customer@example	Admin should send all emergency protocol to rescue customer.		
Post Condition : Ensure that the system resets the emergency status after resolving the incident				

Project Name : Shipping Port Management			Test Designed by : Bishal Paul	
Test Case ID : FR_A2			Test Designed date : 02.09.2024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Shipping Line Management			Test Execution date :	
Test Title : Verify admin can add/update/remove shipping lines.				
Description : Test the functionality to ensure that the admin can successfully add, update, and remove shipping lines within the Shipping Line Management module				
Precondition (If any) : Admin user is logged into the system with the necessary privileges to manage shipping lines.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. Click on “Shipping Line” 2. Add a New Shipping Line 3. Update an Existing Shipping Line 4. Remove a Shipping Line	Name: To Country X Route: Choose from map.	The shipping line list should reflects all recent changes accurately.		
Post Condition : Ensure that the system's database is updated with all recent changes.				

Project Name : Shipping Port Management			Test Designed by : Kazi Tanzizul Haque	
Test Case ID : FR_A1			Test Designed date : 02.09.02024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Management Functionality			Test Execution date :	
Test Title : Verify Dock Management Functionality				
Description : This test case verifies that the Dock Management module effectively handles the assignment of ships to docks and ensures that dock-related operations.				
Precondition (If any) : The Admin must be logged into the system. Dock and ship data must be present in the system.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1.Click on “Manage Dock”. 2. Update Dock Schedule and availability. 3. Search or select Dock from the Dashboard. 4.Assign a Ship information 5. Assign Check in/out date. 6.Complete Dock Operation	Port Location: City X, Country Y Dock ID: A1 Cargo ID: 7890, Check in Date: 2024-09-01 Check out Date: 2024-09-05	The system should successfully save the cargo shipment with all provided details. The shipment status should be updated to "Scheduled" or the appropriate status indicating that the shipment is in the system.		
Post Condition :				

Project Name : Shipping Port Management			Test Designed by : Kazi Tanzizul Haque	
Test Case ID : FR_C6			Test Designed date : 02.09.2024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Book Available Ship for Import/Export			Test Execution date :	
Test Title : Verify Import/Export Functionality for Available Ships				
Description : This test case verifies that the "Import/Export Available Ship" functionality.				
Precondition (If any) : The user must be logged into the system.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. Click on Import/Export 2.Select a ship from the list of available ships. 3. Choose the desired booking date. 4. Choose the desire location and destination 5.Confirm the booking by clicking on the "Proceed" button.	Ship ID: 12345 Booking Date: 2024-09-02 Location: Bangladesh Destination: USA	User should be redirected to the payment page. The booking details should be logged as "pending" in the system until payment is confirmed.		
Post Condition :				

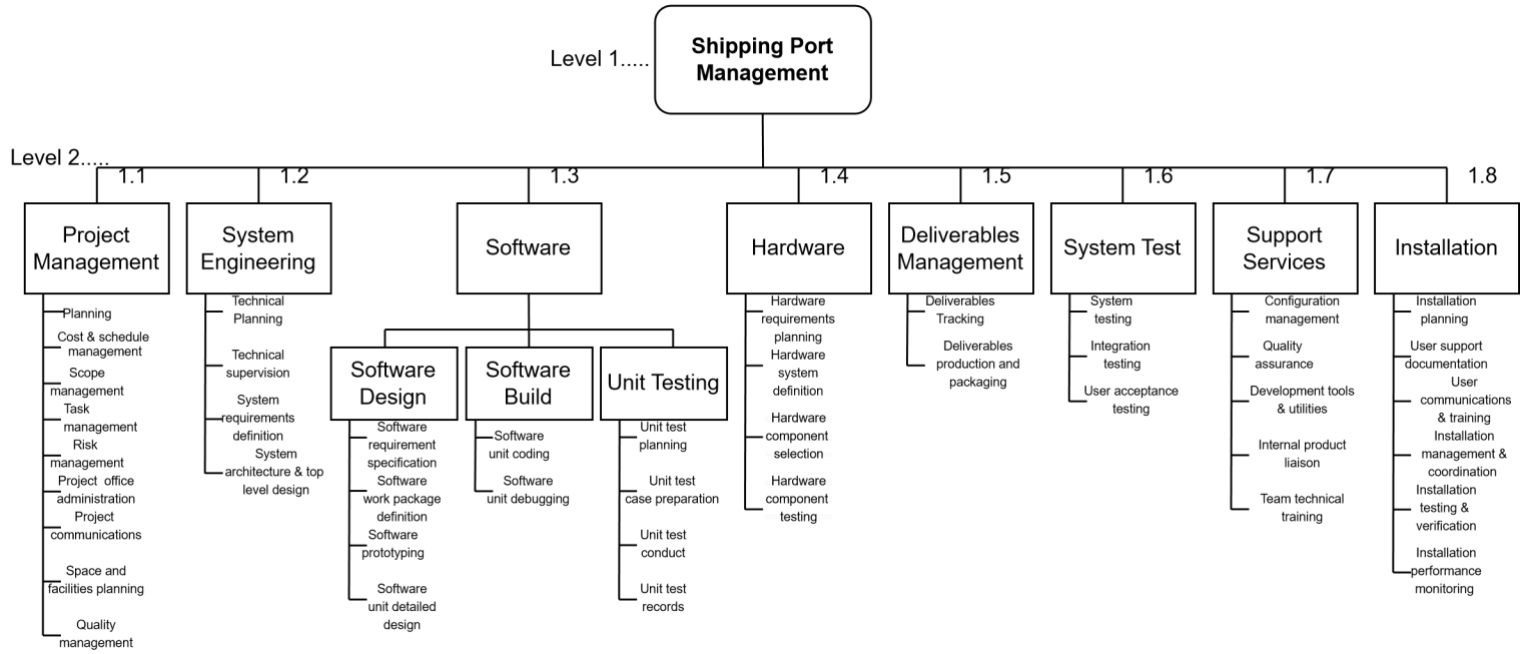
Project Name : Shipping Port Management			Test Designed by : Lida khan Mukti	
Test Case ID : FR_A1			Test Designed date : 02.09.2024	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Operating Terminals			Test Execution date :	
Test Title : Verify Operating Terminals Functionality				
Description : This test case verifies that the Operating Terminals Functionality.				
Precondition (If any): The Admin must be logged into the system. Dock and ship data must be present in the system.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1.Click on “Operating terminals”. 2. Click on cargo handling 3. Click on live camera 4 Click on scheduling 5. Click on activities 6. Click on cargo capacity	Cargo ID : C12345 Cargo Capacity: 10000 cubic meters. Current Usage: 6000 cubic meters. Available Capacity: 4000 cubic meters. Destination Port: Port A Shipment Date: 2024-09-01 Expected Arrival Date: 2024-09-05 Camera ID: CAM001 Location: Dock 5 Camera Status: Online Live Feed URL: [URL for Live Feed] Activity ID: ACT001 Description: Maintenance Check	The system should successfully save the cargo shipment record. The camera with Camera ID CAM001 should be listed as online. The system should save and display the activity details and cargo capacity details.		
Post Condition:				

Project Name : Shipping Port Management			Test Designed by: Lida Khan Mukti	
Test Case ID : FR_S1			Test Designed date :9/2/24	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Add Ship			Test Execution date :	
Test Title : Verify add ship with valid ship details				
Description : Test add ship function for ship-owner				
Precondition (If any) : Ship-owner must login				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1. Enter to the app 2.Click add ship 3.Enter all the ship details 4.Click proceed	Ship Name: WATER_X9 Dimensions: 118x330 m Storage: 10 Tons Destination Range: International	User should be able to add the ship		
Post Condition : All the information stored in the database for further verification.				

Project Name : Shipping Port Management			Test Designed by : Sk. Shahed Ali	
Test Case ID : FR_S2			Test Designed date : 9/2/24	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Accept/Reject Request from a customer			Test Execution date :	
Test Title : Verify a ship-owner can accept or reject a request from a customer				
Description : Test acceptance or rejection of a request				
Precondition (If any) : Ship-owner must login and have a request from a customer				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1.Enter to the app 2.Click Customer Request 3.Click Accept to accept the request or click Reject to reject the request	Request: 1 request from customer@example	Ship-owner accepted the request		
Post Condition : Notification of the acceptance request transfer to the customer				

Project Name : Shipping Port Management			Test Designed by :SK. Shahed Ali	
Test Case ID : FR_C6			Test Designed date :9/2/24	
Test Priority(Low, Medium, High) : High			Test Executed by :	
Module Name : Tracking Ship Location			Test Execution date :	
Test Title : Verify tracking ship location which is booked by a customer				
Description : Test tracking of the ship location				
Precondition (If any) : Customer must login and must book a ship				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass / Fail)
1.Enter to the app 2.Click Track Shipment 3. Click desired ship to track	Current Booked Ship: Ship_ID 0129x8	Customer can successfully view the current location and estimated date to reach destination		
Post Condition : The user can request help for further information.				

Work Breakdown Structure



Project Estimation

Project Name: Shipping port management

Project Type: Organic

Where,

$$P = 1.05$$

$$T=0.38$$

$$\text{Coefficient} = 2.4$$

$$\text{SLOC}=6000$$

Now,

$$\text{PM} = \text{Coefficient} \times (\text{SLOC}/1000)^P$$

$$= 2.4 (6000/1000)^{1.05}$$

$$= 15.75$$

$$\text{DM} = 2.50 \times (15.75)^{0.38}$$

$$= 7.127 \sim 7$$

Required number of people = ST

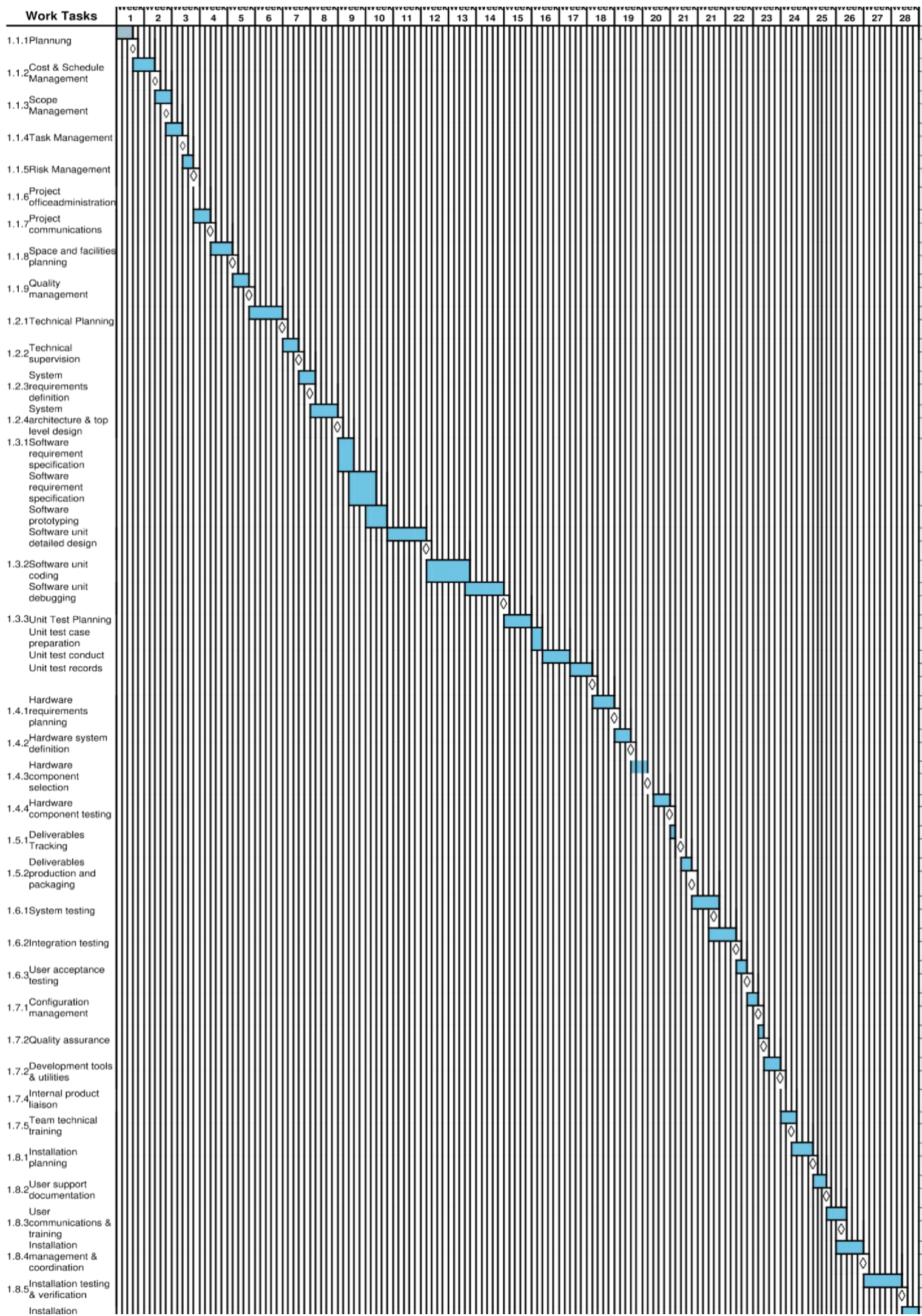
$$= \text{PM}/\text{DM}$$

$$= 15.75/7$$

$$= 2.25 \sim 3$$

Weeks & Task : Person	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
	Pre Game					Development																				Post Game		
						Sprint-1					Sprint-2					Sprint-3					Sprint-4							
A:Gus																												
B:Walter																												
C:Gus																												
D:Jesse																												
E:walter																												
F:Gus																												
G:Gus																												
H:Jesse																												
I:Walter																												
J:Gus																												
K:Gus																												
L:Jesse																												
M:Walter																												
N:Gus																												
O:Gus																												
P:Jesse																												
Q;Walter																												
R:Gus																												
S:Gus																												
T:Jesse																												
U:Walter																												
V:Gus																												
W:Jasse																												
X:Walter																												
Y:Gus																												

<p>A:Create and prioritize the Product Backlog.</p> <p>B:Support preparation and environment setup.</p> <p>C:Conduct Sprint 1 planning and backlog refinement.</p> <p>D:developing Sprint 1 features.</p> <p>E:Integrate and review sprint-1 code, provide feedback.</p> <p>F:Test Sprint 1</p> <p>G:Conduct Sprint 2 planning and backlog refinement.</p> <p>H:developing Sprint 2 features.</p> <p>I:Integrate and review sprint-3 code, provide feedback.</p> <p>J:Test Sprint 2</p> <p>K:Conduct Sprint 3 planning and backlog refinement.</p> <p>L:developing Sprint 3 features.</p> <p>M:Integrate and review sprint-3 code, provide feedback.</p> <p>N:Test Sprint 3</p>	<p>O:Conduct Sprint 4 planning and backlog refinement.</p> <p>P:developing Sprint 4 features.</p> <p>Q:Integrate and review sprint-4 code, provide feedback.</p> <p>R:Test Sprint 4</p> <p>S:Conduct Sprint 5 planning and backlog refinement.</p> <p>T:developing Sprint 5 features.</p> <p>U:Integrate and review sprint-5 code, provide feedback.</p> <p>V:Test Sprint 5</p> <p>W:Deploy the final product.</p> <p>X:Assist with integration testing to handle technical issues.</p> <p>Y:Final system testing and validate.</p>
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EVA EXERCISE

Task	Planned Effort	Actual Effort
1	3.0	3.0
2	4.0	3.5
3	3.0	2.5
4	3.0	4.0
5	2.0	3.0
6	3.0	4.0
7	4.0	3.5
8	3.0	3.0
9	6.0	5.5
10	3.0	3.5
11	3.0	--
12	5.0	--
13	3.0	--
14	5.0	--
15	4.0	--

Given total task=43; Effort estimation = 315 Person Days

- $BAC = PM \times 20 = 15.75 \times 20 = 315$
- $SPI = BCWP/BCWS = 34/54 = 0.629629$
- $SP = BCWP - BCWS = -20 \text{ Person-day}$
- $CPI = BCWP/ACWP = 34/35.5 = 0.96$
- $CV = BCWP - ACWP = 34 - 35.5 = -1.5 \text{ Person-day}$

% schedule for completion = $BCWS/BAC = 54/315 = 17.14\%$
 [% of work scheduled to be done at this time]

% complete = $BCWP/BAC = 34/315 = 10.79\%$
 [% of work completed at this time]

Risks	Category	Probability	Impact	RMMM
Size estimate may be significantly low	PS	60%	2	
Larger number of users than planned	PS	30%	3	
Less reuse than planned	PS	70%	2	
End-users resist system	BU	40%	3	
Delivery deadline will be tightened	BU	50%	2	
Funding will be lost	CU	40%	1	
Customer will change requirements	PS	80%	2	
Technology will not meet expectations	TE	30%	1	
Lack of training on tools	DE	80%	3	
Staff inexperienced	ST	30%	2	
Staff turnover will be high	ST	60%	2	
Location tracking error	ST	30%	1	
Lack of skilled developers	ST	40%	3	
Insufficient development resources (hardware, licenses)	DE	40%	2	

Impact Values:

1-Catastrophic

2-Critical

3-Marginal

4-Negligible

Risks	Risk reduction techniques
Size estimate may be significantly low	Adjust project scope or budget as needed; communicate change
Larger number of users than planned	Monitor user base closely; allocate additional resources if necessary
Less reuse than planned	Encourage modular design and code reuse; review during design phases
End-users resist system	Provide user training, collect feedback, and iterate on design
Delivery deadline will be tightened	Break project into smaller milestones to manage timelines effectively
Funding will be lost	Secure alternative funding sources or adjust project priorities
Customer will change requirements	Establish clear communication channels; document all changes
Technology will not meet expectations	Conduct proof of concept and prototype before full implementation
Lack of training on tools	Provide comprehensive training and support to all staff
Staff inexperienced	Provide mentoring and on-the-job training
Staff turnover will be high	Improve retention programs, ensure knowledge transfer documentation
Location tracking error	Implement robust location algorithms (e.g., GPS fallback, triangulation methods) and use redundant data sources to improve accuracy
Lack of skilled developers	Upskill through training; hire experienced consultants for critical components
Insufficient development resources (hardware, licenses)	Ensure early procurement of resources; plan for extra capacity where possible