

Task	Planned Effort	Actual Effort
1	5.0	6.0
2	5.0	7.0
3	5.0	4.5
4	5.0	5.5
5	5.0	6.0
6	5.0	6.5
7	10.0	8.5
8	5.0	4.0
9	10.0	-
10	5.0	-

Diagram illustrating Earned Value Management (EVM) metrics for tasks 1 through 10. The table shows Planned Effort (BCWS) and Actual Effort (ACWP). A bracket labeled BCWP spans tasks 4 through 6, and a bracket labeled ACWP spans tasks 4 through 8.

Total Working days = PM*22

= 13 * 22

= 286

BAC = 286.00

BCWP = 45.00

BCWS = 60.00

ACWP = 48.00

SPI = BCWP / BCWS = 45.00 / 60.00 = 0.75

SV = BCWP - BCWS = 45.00 - 60.00 = -15 person-day

CPI = BCWP / ACWP = 45.00 / 48.00 = 0.9375

CV = BCWP - ACWP = 45.00 - 48.00 = -3.00 person-day

% schedule for completion = BCWS / BAC = 60.00 / 286.00 = 20.98 %

[% of work scheduled to be done at this time]

% complete = BCWP / BAC = 45.00 / 286.00 = 15.73 %

[% of work completed at this time]

Risk Table

Risk	Category	Probability	Impact
Limited User Adoption	BU	40%	3
Technical Challenges	PS	60%	2
Data Privacy and Security Risks	PS	50%	2
Government Bureaucracy	PR	70%	1
Lack of Continuous Funding	BU	40%	3
Negative Public Perception	CU	40%	3
Dependency on government Support	PS	50%	3
Staff Inexperienced	ST	30%	2
Technology will not Meet Expectations	TE	30%	1
Lack of training on tools	DE	60%	3
Less reuse than planned	PS	55%	2
Delivery Deadline will be tightened	BU	35%	2
Size estimate may be significantly low	PS	50%	2
Natural Disaster	BU	36%	3
Scope Overlap	PS	50%	3
Integration Challenge	TE	25%	2
Lack of shareholder involvement	BU	55%	1
Ineffective communication	ST	15%	3
Larger number of users than planned	PS	25%	3
Staff turnover will be high	ST	50%	2
End users resist system	BU	35%	3
Customer will change requirement	PS	70%	2

Impact Values,

1 = Catastrophic.

2 = Critical

3 = Marginal

4 = Negligible

Risk Reduction Techniques

Risk	Risk Reduction Techniques
Limited User Adoption	Conduct extensive awareness campaigns through various channels, collaborate with local communities and leaders to promote the app, ensure user-friendly design and accessibility features, provide incentives for early adopters, and continuously gather feedback to improve user experience.
Technical Challenges	Conduct thorough technical feasibility studies before development, hire experienced developers with relevant expertise, follow best practices for security and scalability, implement robust testing procedures, regularly update, and maintain the app to address emerging technical issues and have contingency plans in place for rapid response to critical issues.
Data Privacy and Security Risks	Implement strong encryption protocols, adhere to data protection regulations such as GDPR, conduct regular security audits and vulnerability assessments, provide clear privacy policies, and obtain user consent for data collection, educate users on best practices for data security, and establish a dedicated team to monitor and respond to security incidents promptly.
Government Bureaucracy	Foster close collaboration with government agencies at all levels, engage with key stakeholders to advocate for the project's importance, streamline approval processes through clear communication and documentation, allocate sufficient resources and personnel for project management, and maintain flexibility to adapt to changing regulatory requirements or administrative procedures.
Lack of Continuous Funding	Develop a comprehensive funding strategy that includes diverse sources such as government grants, corporate sponsorships, and user subscriptions or donations, demonstrate the app's value proposition and return on investment to potential funders, establish partnerships with relevant organizations for financial support, and explore revenue-generating opportunities such as premium features or partnerships with commercial entities.
Negative Public Perception	Proactively engage with the public and media to address concerns and misconceptions, maintain transparency in project activities and decision-making processes, respond promptly and constructively to feedback and criticism, highlight success stories and positive impacts of the app through effective communication channels, and continuously strive to build and maintain trust with all stakeholders.
Dependency on Government Support	Diversify partnerships and sources of support beyond government agencies, establish clear agreements and memoranda of understanding to formalize commitments, engage with multiple government departments or agencies to reduce dependency on individual entities, and build resilience by maintaining flexibility and adaptability to changes in the political or administrative landscape.
Staff Inexperienced	Provide comprehensive training and mentoring programs for inexperienced staff members. Assign experienced team leads or mentors to guide and support less experienced team members. - Encourage continuous learning and professional development opportunities for all team members. - Consider outsourcing certain tasks to experienced contractors or consulting firms if necessary
Technology will Not Meet Expectations	Conduct thorough research and analysis of available technologies before making decisions. - Involve stakeholders in the selection and evaluation of technologies to ensure alignment with expectations. - Prototype and test technology solutions early in the development process to

	identify and address potential issues. - Maintain flexibility to adapt technology choices based on evolving requirements and feedback from users and stakeholders.
LACK OF TRAINING ON TOOLS	Provide comprehensive training sessions tailored to the team's skill level and roles. Develop detailed and easy-to-follow documentation for tools and processes. Encourage hands-on learning through workshops and practical exercises. Allocate mentors or experienced team members to guide others during the initial phase. Regularly assess the team's proficiency and address gaps through refresher training.
LESS REUSE THAN PLANNED	Encourage modular design practices to maximize component reusability. Develop and maintain a repository of reusable components with proper documentation. Train the team on reuse strategies and the benefits of leveraging existing assets. Periodically review and update reusable assets to align with evolving project needs. Incorporate reuse objectives in project planning and evaluate progress against goals.
DELIVERY DEADLINE WILL BE TIGHTENED	Prioritize critical tasks and eliminate non-essential activities. Adopt agile methodologies to deliver features incrementally. Increase resource allocation if feasible, such as hiring temporary staff. Automate repetitive tasks to save time and enhance efficiency. Communicate proactively with stakeholders to set realistic expectations.
SIZE ESTIMATE MAY BE SIGNIFICANTLY LOW	Perform detailed size estimation using multiple techniques such as Function Point Analysis or expert judgment. Conduct regular reviews and updates of size estimates during the project lifecycle. Add contingency buffers to account for underestimation. Engage experienced team members or external consultants for accurate estimation. Break down tasks into smaller components for better size prediction.
NATURAL DISASTER	Develop a comprehensive disaster recovery and business continuity plan. Invest in cloud-based infrastructure to ensure data accessibility and security. Conduct regular drills to test disaster readiness and response protocols. Identify and secure alternate work locations or remote working solutions. Ensure adequate insurance coverage for project-related risks.
SCOPE OVERLAP	Clearly define and document the scope of each team or project. Maintain a centralized repository of project documentation to avoid duplication. Facilitate regular coordination meetings to align on roles and responsibilities. Assign a dedicated project manager to oversee scope boundaries. Conduct periodic scope reviews to identify and address overlaps promptly.
INTEGRATION CHALLENGE	Establish clear integration standards and protocols early in the project. Use an integration platform or middleware to simplify connectivity between components. Perform thorough compatibility testing before integration. Involve cross-functional teams in planning and implementing integration. Set up a dedicated team to manage integration tasks and troubleshoot issues.
LACK OF SHAREHOLDER INVOLVEMENT	Engage stakeholders early by involving them in the project initiation phase. Provide regular updates through meetings, reports, or dashboards. Highlight the project's benefits and potential ROI to secure commitment. Address stakeholder concerns promptly to maintain trust and interest. Establish formal agreements or contracts to ensure continued involvement.
INEFFECTIVE COMMUNICATION	Adopt a structured communication plan with clear channels and protocols. Utilize collaboration tools to ensure timely and transparent information sharing. Encourage open and active feedback through regular team meetings.

	Train team members on effective communication skills, especially in remote setups. Appoint a dedicated communication coordinator to manage and streamline interactions.
LARGER NUMBER OF USERS THAN PLANNED	Design the system for scalability from the outset to handle additional users. Conduct stress testing to identify performance bottlenecks. Allocate sufficient infrastructure resources to accommodate increased demand. Monitor system usage patterns and adjust capacity dynamically if needed. Implement load balancing to distribute user traffic effectively.
STAFF TURNOVER WILL BE HIGH	Develop a knowledge management system to capture critical project information. Offer competitive benefits and career development opportunities to retain staff. Create a positive and inclusive work environment to boost morale. Have a succession plan in place for key roles. Engage external consultants or temporary staff to mitigate disruptions.
END USERS RESIST SYSTEM	Involve end-users early in the design and development process. Provide training and demonstrations to highlight system benefits. Address user concerns and feedback to improve system acceptance. Offer incentives or rewards for adopting the new system. Ensure ongoing support and resources to ease the transition.
CUSTOMER WILL CHANGE REQUIREMENT	Adopt agile practices to accommodate changing requirements flexibly. Maintain a detailed change management process to assess and integrate changes. Establish clear communication channels to understand the reasons behind changes. Prioritize changes based on their impact and feasibility. Include buffer time and resources to handle evolving customer needs.

Group#	Lab Task#	Student Name and ID	Assigned Task	Date assigned	Due Date	Comment
4	6	Ahasan Habib (22-48877-3)	Table, % complete, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Md. Sajib Mondol (22-48824-3)	ACWP, CV, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Abul Bashar Sourov (22-48823-3)	BCWS, CPI, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Ujjoyeni Dey (22-49001-3)	BCWP, SV, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	
		Anik Ben Alamgir (22-47941-2)	BAC, SPI, Equal Contribution in Risk table and risk reduction techniques	1/15/2025	1/21/2025	

