

Project Management Plan/Charter

By: Syeda Umema Hani

PROJECT MANAGEMENT PLAN TEMPLATE

Date: 26/April/2022

Release #: 1st

Project Manager: Syeda Umema Hani

Approvals:

Project Manager

State Organization Management

Department of Finance

User Management- HR

Other:

1. Project Summary

Information in the project summary areas was started during the project concept phase and should be included here.

Project Name:	<i>library Management system</i>	Start Date:	<i>26/Feb/2022</i>
State Organization::	<i>PAF Kiet University</i>	Submitted by:	<i>Group Leader</i>
Prime Contractor:	<i>University</i>	Date Awarded:	<i>17/April/2022</i>
Current Stage of Project:	<i>Development Life Cycle – RAD</i>		

Project is On Schedule:

Yes: ☺ *Yes* **No:** ☹
Details: *Yes Project is on schedule*

Project is within Budget:

Yes: ☺ *Yes* **No:** ☹
Comments: *Yes Project is within Budget.*

Project Summary - Continued

Points of Contact (Stakeholder)

This should be the list of individuals that will be involved with the project during the execution phase.

Position	Name/Organization	Phone	E-mail
Project Manager	Dr. Umema Hani/ PAF KIET		<u>Dr.umema@pafkiet.edu.pk</u>
Sponsor	PAF KIET		
Customers:	Property Sell & Purchase Clients		
Other Stakeholders:	Muhammad Asad Ahmed	03402115984	asad57409@gmail.com
	Syed Muhammad uzair	03212049075	smuzair95@gmail.com
	Mohsin Amin	03132041187	mohsinamin313@gmail.com
	Daniyal Ansari	03492195189	Daniyalahmed400@gmail.com
	Misbah Shakeel	03011220041	misbha.shakeel007@gmail.com

2. *Project Charter*

Business Problem.

All projects start with a business problem/issue to solve.

Conduction of Property tasks manually, lack of efficiency, low performance time consuming activities.

Statement of Work (Goal).

The statement should be short and to the point. It should not contain language or terminology that might not be understood.

This product aims to replace the current manual system with the automated solution. The main system will comprise of **6 major sub-systems or Modules** the integration of these sub-system will form the main system. All the sub-systems will be tightly integrated so as to give unanimity to user. The current client setup does not have any automation. Therefore, every department and the section will be developed from scratch as all departments are currently working manually. In this document we are covering **“library System”** only.

- 1. Module 1 : Login**
- 2. Module 2 :manage member**
- 3. Module 3 : manage books issuance**
- 4. Module 4 :manage books category &stock publisher**
- 5. Module 5 :manage book print figure(page + from)**
- 6. Module 6 :manage time for the books fines**

2. *Project Charter, continued*

Project Objectives:

Provide a brief, concise list of what the project is to accomplish.

The software for General International is an ERP System, which enables automation of centralized system. This system will integrate all the departments of the company. The main divisions of the system are:

- 1. manage member (Create, Review, Update, Delete, Search).**
- 2. manage books issuance (Create, Review, Update, Delete, Search).**
- 3. manage books category & stock publisher (Create, Review, Update, Delete, Search).**
- 4. manage book print figure (page + from)**
(Create, Review, Update, Delete, Search).
- 5. manage time for the books fines (Create, Review, Update, Delete, and Search).**

Success Factors:

List factors that will be used to determine the success of the project.

1. Complete deployment of all 4 modules
2. Smooth integration between all systems
3. A Tested Product

Project Dependencies/Constraints:

1. Project completion is expected in less than 3.5 months duration
2. All requirements will be 100% available during requirement phase
3. Maximum team strength 5,
4. Average loading = 1.42 ,
- 5. E=5**

3. Project Tradeoff Matrix & Status Summary

Schedule/ Time	Scope/ Modules	Resources/Effort/People
CONSTR AINED	CONSTRAINE D / ACCEPTED	CONSTRAINED / Need to be IMPROVED (need reduction) / ACCEPTED (Cocomo Effort = 10 -15 not acceptable our constraint is max 5 members in 3.5 months)
		E = 5, S = 3.5, per month 2 persons, 3 months 5 persons = est 5 person

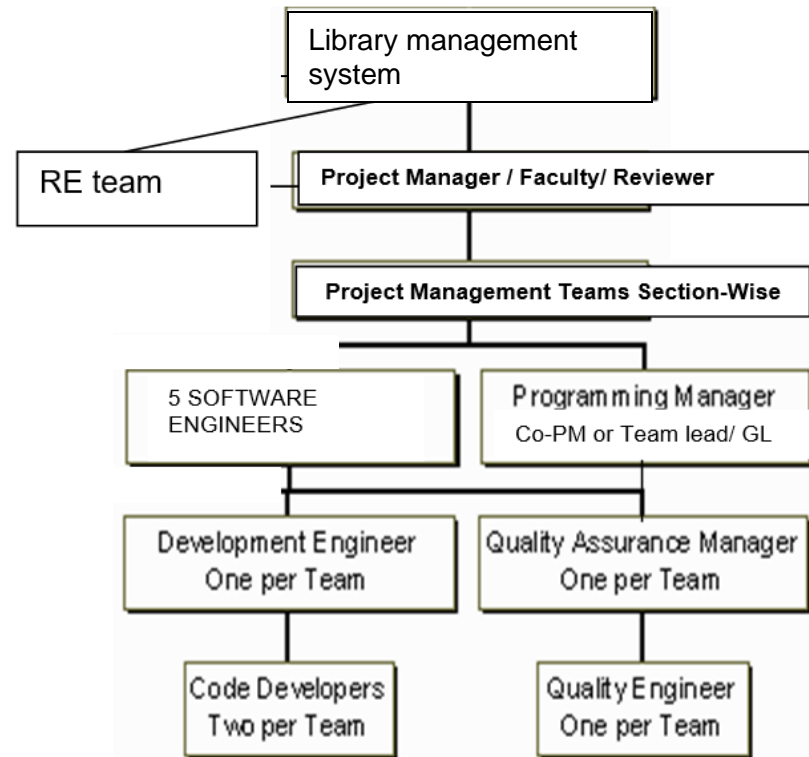
Identify variable to be CONSTRAINED, IMPROVED, ACCEPTED

Comments:

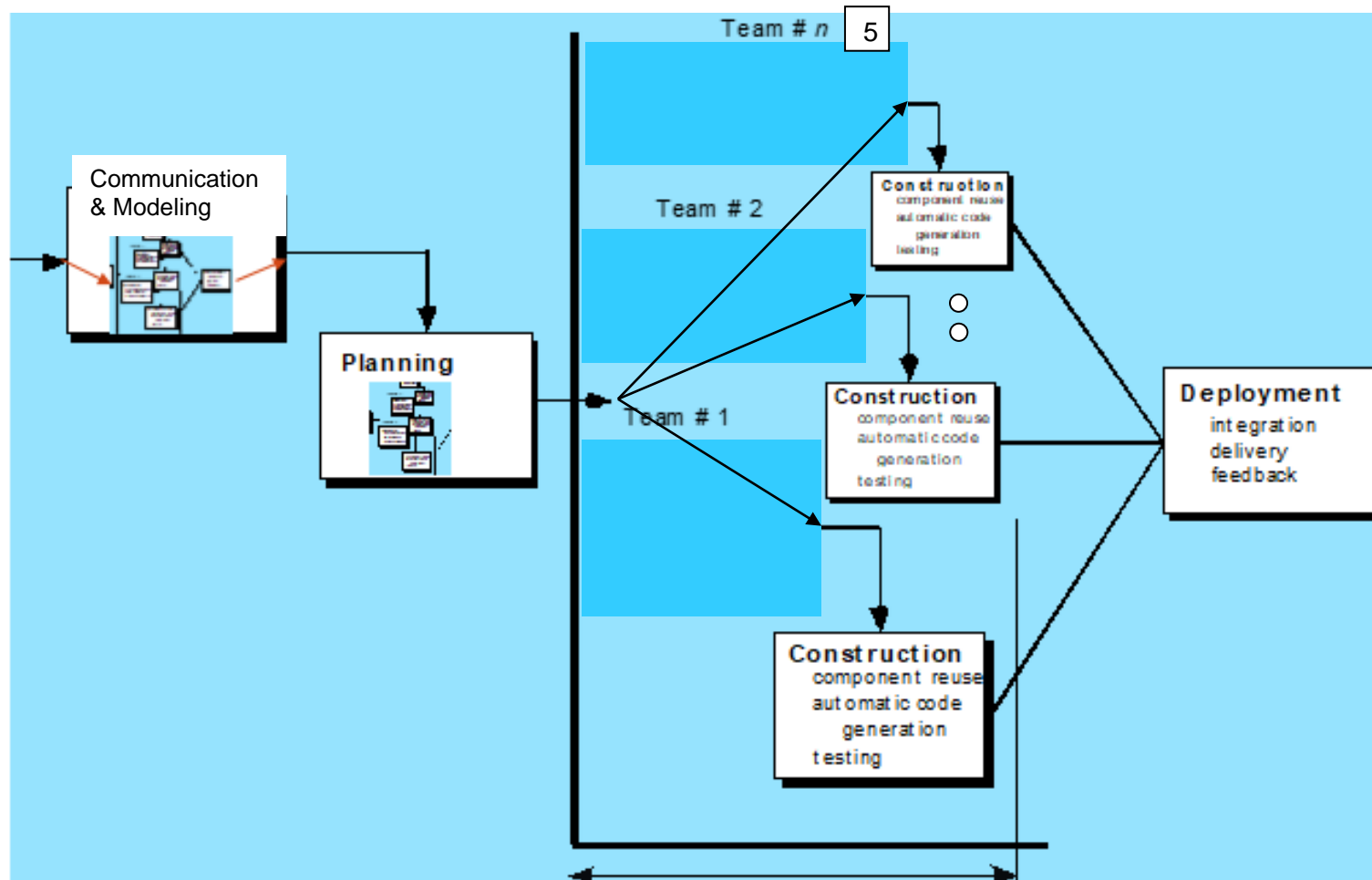
Accepted

4. Project Organization

Provide an organization chart that defines the person responsible for at least the following functions: project manager, development manager, quality assurance, and configuration management.



SDLC Process Model:



5. Activity List (Work Breakdown Structure)

Provide an activity list (work breakdown structure) that describes each task required by the project, with a reference to the statement of work. For large projects, work packages might be included that describe in detail how specific tasks will be completed by specific project teams. These work packages describe required schedule, identify requirements to be completed and describe specific work to be performed

1. First Estimating FP then from it E and S. <Correctly Re calculate for your Project>

Software Size Estimation using Function Point Method										
A) Detail of 5 Transaction Types, at most 5 under each category										
	Write down exact Screen or Forms names, or Tables, or Reports name for each count value.									
EI	1. User	2. Print option	3. compatibility	4. access	5. support					
EO	1. Admin	2. Print option	3. compatibility	4. access	5. support					
EQ	1. book publishers	2. Print option	3. compatibility.	4. access	5. support					
ILF	1. multimedia	2. Print option	3. compatibility.	4. access	5. support					
ELF	1. 8	2. 0	3. 0	4. 0	5. 0					
B) Unadjusted Function Point Value calculation										
Definition of Complexities: Your Transactions which are derived from only from 1 Table are to be categorized as Low and if they are derive from 2 tables they can be categorized in Mid-level complexity, and in case of >= 3 they will be placed under High level of complexity.										
	Count for screens of Low level complexity (C)	Multiplier Low level complexity (M)	V1 = C * M	Count for screens of Mid-level complexity (C)	Multiplier Mid-level complexity (M)	V2 = C * M	Count for screens of High-level complexity (C)	Multiplier High-level complexity (M)	V3 = C * M	Category wise sum V1+V2+V3
EI	3	3	9	1	4	4	0	6	0	13

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EO	3	4	12	1	5	5	1	7	7	20
EQ	3	3	9	1	7	7	1	6	6	22
ILF	3	7	21	1	0	0	1	15	15	36
ELF	0	5	0	1	7	7	1	10	10	17
Unadjusted Function Point Value =									108	

C) Value Adjustment Factor (VAF) calculation					
Note: Calculate Value Adjustment Factor, where any 5 "General System Characteristics (GSC) must have a value above 2. Also show respect Quality Characteristic mapping of these 5 factors.					
	Quality Characteristic	Weight (0-5)		Quality Characteristic	Weight (0-5)
1.		1	8.		2
2.		2	9.		3
3.		3	10.		4
4.		2	11.		1
5.		1	12.		3
6.		1	13.		2
7.		4	14.		1
Value Adjustment Factor (VAF) = 30					

D) Technology Complexity Factor calculation
$TCF = 0.65 + (VAF * 0.01)$ $= 0.65 + (30 * 0.01)$ $= 0.95$

E) Adjusted Function Point Value (AFPV) or Function Point Value (FP) Calculation
$AFPV = \text{Unadjusted Function Point} * TCF$ $= 108 * 0.95$ $= 102.6$

F) Conversion of AFPV in to LOC Size metric
<p>the number of LOCs per FP for C# language 54 and check other languages from https://www.qsm.com/resources/function</p>

Project Management Plan: PMS

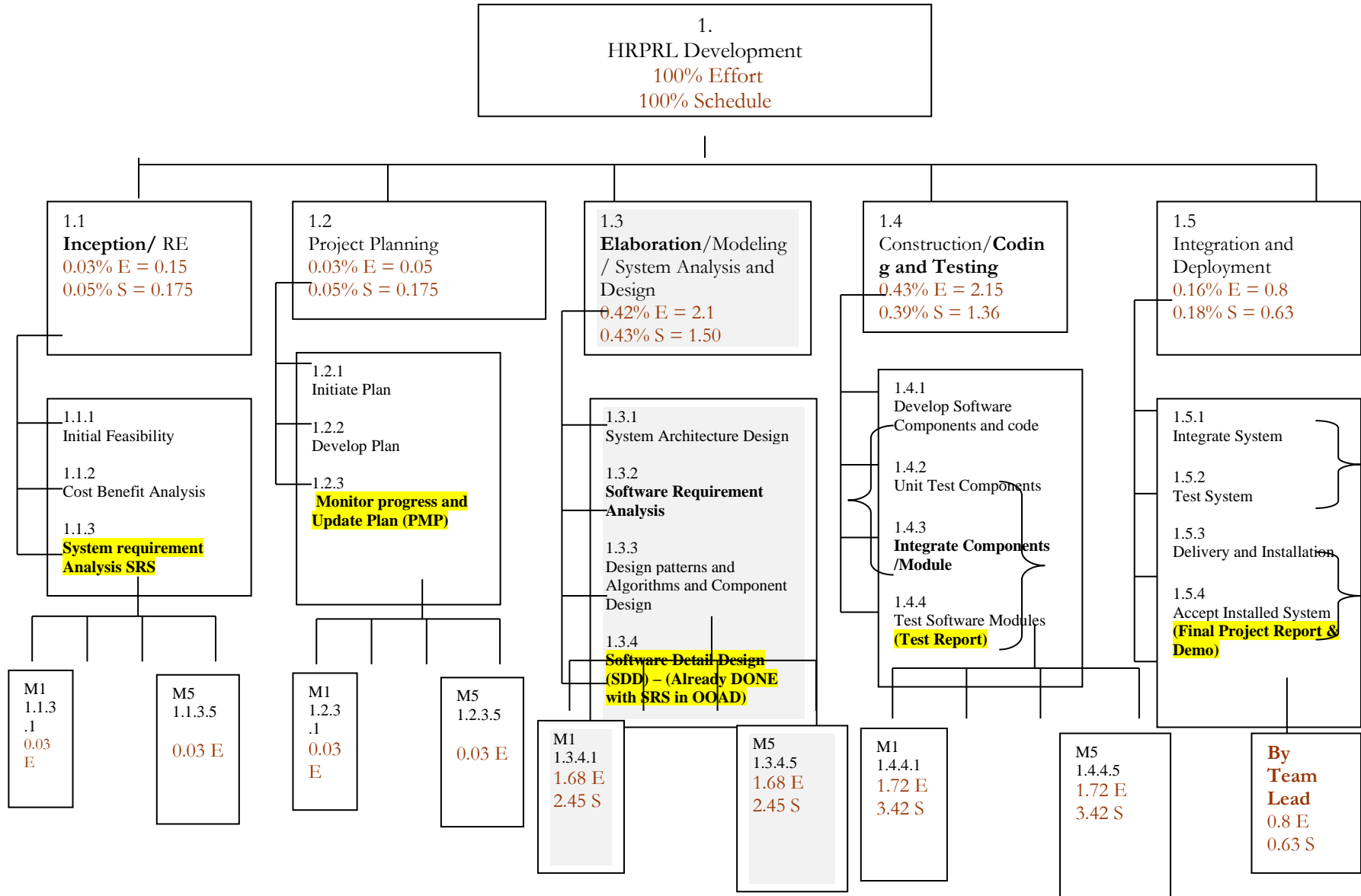
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<p><u>point-languages-table, c#.net 54</u></p> <p>Project Size in LOC = AFPV * LOC/FP</p> <p>Project Size in LOC = 102.6* 54 = 5540.4 LOC.</p>
<p>G) Software Size: 5540.4</p> <p>Software Size for COCOMO: 5.540 KLOC</p> <p>Software Type: Business/ Utility/Embedded</p> <p>Model Mode: Cocomo I – Basic – ORGANIC (0 – 50 KLOC) / Semi detached/ Embedded</p>
<p>a) Effort Estimation: Equation $2.4 * 5.540^{1.05} = E = 14 \text{ persons month}$</p>
<p>b) Schedule Estimation: Equation $2.5 * E^{0.38} \text{ months} = S = 7 \text{ months}$</p>
<p>c) Productivity Estimation: Equation $Loc/E = 5540.4/14=396$</p>
<p>d) Average Loading Estimation: Equation $E/S = 14/7=2$</p>
<p>e) Average Salary of Technical Staff (AS): Equation Assume = 50,000 RS</p>
<p>f) Cost for Salary (Cs): Equation $E * \text{Avg salary} = 700000$</p>
<p>g) Budgeted Cost of Project (Cb): Equation $Cs + Cs * X\% = 700000+(700000*10\%)=770000$</p>

2. Calculate the phase-wise percentage distribution wise E and S values as given in detailed COCOMO detailed model.

H) Distribution of Effort and Schedule among Different phases of SDLC							
E = <u>5</u> S = <u>3.5</u>							
Plan and Requirement (E S)		Modeling / System Design & Detailed Design (E S)		Module Coding and Unit Testing (E S)		Integration & Deployment (E S)	
0.06 * 5 = 0.3	0.10 * 3.5 = 0.3	(0.16+0.26) * 5 = 2.1	(0.19+0.24) * 3.5 = 1.5	0.42 * 5 = 2.1	0.39 * 3.5 = 1.3	0.16 * 5 = 0.8	0.18 * 3.5 = 0.63

3. Now adding percentage distribution as given in detailed COCOMO model in the WBS phase-wise. <Write exact E/S values after multiplying with distribution percentages>



Now convert above WBS contents in a Tabular format in order to make a GANTT CHART. <Complete>

22 days are taken from COCOMO detailed model's Schedule Distribution done in Class for Project Planning and Requirement Engineering Phase. Where 40% of 22 goes in RE and 60% in Planning.

Activity #	Activity Name	Activity Name Description	# of Days	Start Date	Dependency on previous tasks	Milestone
1.1	RE	Requirement Engineering	8-9	8/3/2022	none	16/3/2022
1.1.1	Initial Feasibility		1			
1.1.2	Cost Benefit Analysis		1			
1.1.3	System requirement Analysis SRS		1			
1.1.3.1	System requirement Analysis SRS for Module 1		1			
1.1.3.2	System requirement Analysis SRS for Module 2		2			
1.1.3.3	System requirement Analysis SRS for Module 3		3			
1.1.3.4	System requirement Analysis SRS for Module 4		3			
1.1.3.5	System requirement Analysis SRS for Module 5		3			
1.1.3.6	Merging of all parallel Modules 1,2,3,4,5		1-2			
1.1.4	Milestone (SRS) and Review meeting		0			
1.2	Project Planning	Project Management Planning	14 Days	8/3/2022	1.1	26/4/2022
1.2.1	Initial Feasibility		1			
1.2.2	Project Management Plan PMP		5			

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1.2.2.1	Project Management Plan PMP for Module 1		5			
1.2.2.2	Project Management Plan PMP for Module 2		5			
1.2.2.3	Project Management Plan PMP for Module 3		5			
1.2.2.4	Project Management Plan PMP for Module 4		5			
1.2.2.5	Project Management Plan PMP for Module 5		5			
1.2.2.6	Merging of all parallel Modules 1,2,3,4,5		2			
1.2.4	Milestone (PMP) and Review meeting		0			
1.3	Modeling	Done in SRS now ERD with Implementation	14 days	27/4/2022	1.2	9/5/2022
1.3.1	Initial Feasibility		1			
1.3.2	Project Design Document SDD		9			
1.3.2.1	Project Design Document SDD for Module 1		9			
1.3.2.2	Project Design Document SDD for Module 2		9			
1.3.2.3	Project Design Document SDD for Module 3		9			
1.3.2.4	Project Design Document SDD or Module 4		9			
1.3.2.5	Project Design Document SDD for Module 5		9			
1.3.2.6	Merging of all parallel Modules 1,2,3,4,5		2			
1.3.4	Milestone (SDD) and Review meeting		0			
1.4	Implementation and Testing	Database and Code, Test Report	24 days	10/5/2022	1.3	30/5/2022
1.4.1	Initial Feasibility		2			
1.4.2	Project Testing Report PTR		16			
1.4.2.1	Project Testing Report PTR for Module 1		16			

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1.4.2.2	Project Testing Report PTR for Module 2		16			
1.4.2.3	Project Testing Report PTR for Module 3		16			
1.4.2.4	Project Testing Report PTR for Module 4		16			
1.4.2.5	Project Testing Report PTR for Module 5		16			
1.4.2.6	Merging of all parallel Modules 1,2,3,4,5		2			
1.4.4	Milestone (PTR) and Review meeting		0			
1.5	Deployment/Demo	Demo and Report	1 days	31/5/2022	1.4	15/6/2022
1.5.1	Initial Feasibility		1			
1.5.2	Project Release Document PRM		13			
1.5.2.1	Project Release Document PRM for Module 1		13			
1.5.2.2	Project Release Document PRM for Module 2		13			
1.5.2.3	Project Release Document PRM for Module 3		13			
1.5.2.4	Project Release Document PRM for Module 4		13			
1.5.2.5	Project Release Document PRM for Module 5		13			
1.5.2.6	Merging of all parallel Modules 1,2,3,4,5		2			
1.5.4	Milestone (PRM) and Review meeting		0			

6. Work Product Identification

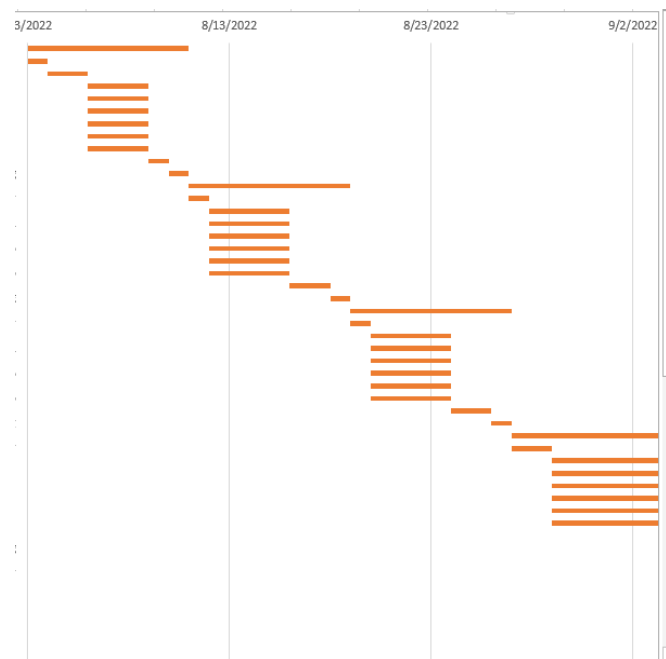
Provide a list of all deliverables required by the project, the date due and the person responsible for the deliverable. Pick Last activities from each phase they are deliverables. <Complete>

<i>Deliverable Name</i>	<i>Due Date</i>	<i>Date Delivered</i>	<i>Point of Contact</i>
SRS by Asad	3/3/2022	3/3/2022	64238
SRS by Uzair	4/3/2022	4/3/2022	64239
SRS by Mohsin	5/3/2022	5/3/2022	64293
SRS by Daniyal	5/3/2022	5/3/2022	64299
SRS by Misbha	5/3/2022	5/3/2022	63924
PMP by Asad	8/3/2022	8/3/2022	64238
PMP by Uzair	10/3/2022	10/3/2022	64239
PMP by Mohsin	12/3/2022	12/3/2022	64293
PMP by Daniyal	14/3/2022	14/3/2022	64299
PMP by Misbha	16/3/2022	16/3/2022	63924
Design (DB+GUI) by Asad	8/3/2022	8/3/2022	64238
Design (DB+GUI) by Uzair	10/3/2022	10/3/2022	64239
Design (DB+GUI) by Mohsin	12/3/2022	12/3/2022	64293
Design (DB+GUI) by Daniyal	14/3/2022	14/3/2022	64299
Design (DB+GUI) by Misbha	16/3/2022	16/3/2022	63924

7. *SCHEDULE*

Provide the project schedule, using a **Gantt chart**. The schedule must include milestones, task dependencies (predecessors), task duration, **work product delivery** dates, quality milestones (reviews/**audits**/inspections), configuration management milestones, and action items (with deadlines and responsibilities). (in order to keep the project (T | C |S) in **CONTROL**).

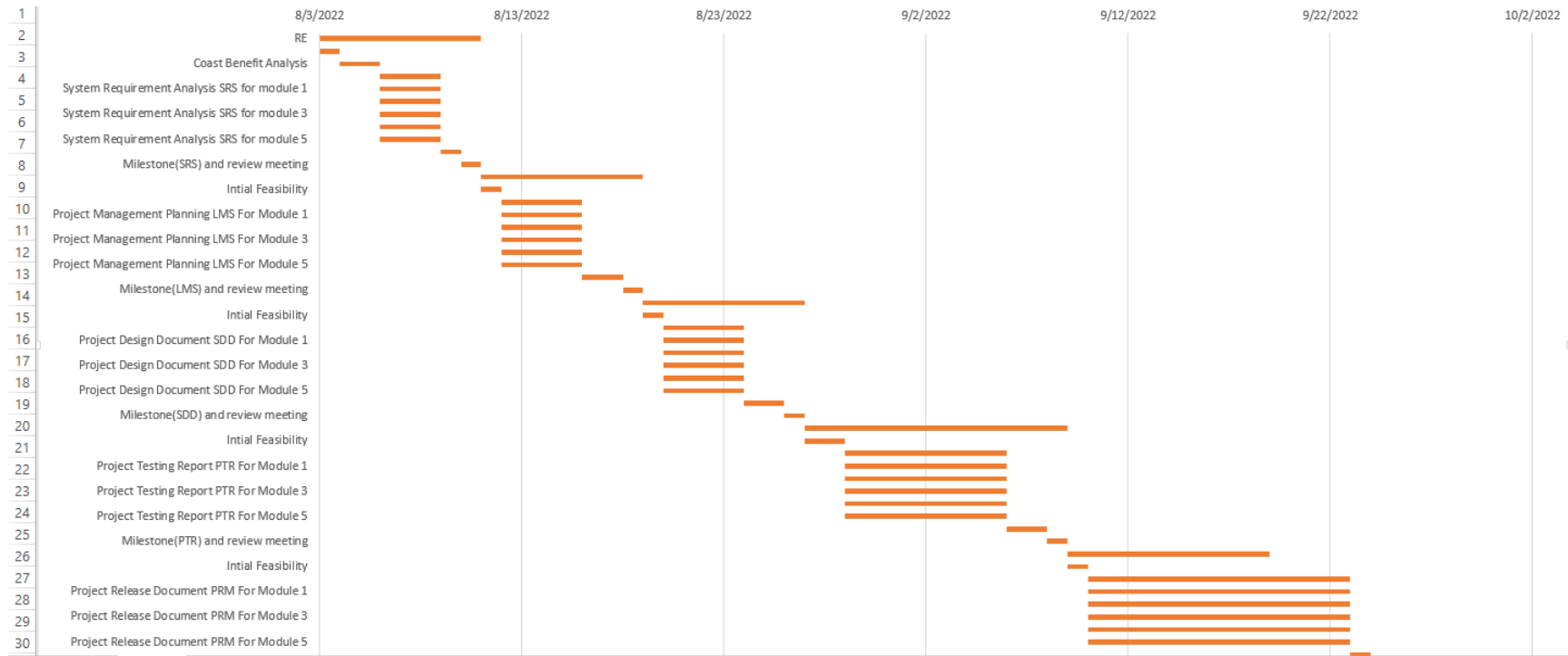
<MUST IMPLEMENT GANTT CHART ON ANY SOFTWARE OR WEBAPPLICATION>



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<Add % completion in it after submission of PMP expected on 18/12/2021, and also paste screen capture of Tracking Gantt Chart view>



8. *Estimated Cost at Completion*

Provide an estimated cost at completion, which is an assessment of the total effort at completion of the contract.

Analysis in Hours / Cost						
WBS No.	Activity Description	Budget Hours B	Actual Hours A	Est. to Complete the remaining work – milestone-wise ETC B - A EAC - A	Est. @ Completion EAC A + ETC	Variance (+ = More) V = (A-B/A)
1 st miles tone		8 workin g days 60 hours	40	60 - 40 = 20	40 + 20 = 60	(40 - 60)/ 40 = - 0.5 Under the budget 20V
2nd miles tone		8 workin g days 8 x 7.5 = 60 hours	50	60 - 50 = 10	50 + 10 = 60	(50-60)/ 50 = -0.2 Under the budget 20V

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3rd milest one		12 workin g days 12 x 7.5 = 90 hours	115	153 – 115 = 20	115 + 20 = 135	(115 – 135)/115 = -0.17 Under the budget 17V
4th Mile stone		20 workin g days 20 x 7.5 = 150 hours	140	150 – 140 = 10	140 + 10 = 150	(140 - 150)/140 = - 0.07 Under the budget 7V
5th miles tone		16 workin g days 16 x 7.5 = 120 hours	100	120 – 100 = 20	100 + 20 = 120	(100 - 120)/100 = - 0.2 Under the budget 20V

9. Resource Loading Profiles - Staffing

Provide a staffing plan that shows the number of personnel, by type, that will be required on the project on a monthly basis.

Resource Loading Profiles							
<p>E = 5</p> <p>S = 3.5</p> <p>Avg Loading = 2 person per month</p> <p>Since loading gives same value of effort for all months, therefore, we have used Detailed COCOMO's Effort distribution as already done in part 5.2</p>							
Plan and Requirement		Modeling / System Design & Detailed Design		Module Coding and Unit Testing		Integration & Deployment	
$0.06 * E = 0.3$	$0.10 * S = 0.35$	$(0.16+0.26) * E = 2.1$ approx. 2	$(0.19+0.24) S = 1.5$	$0.42 * E = 2.1$ approx. 2	$0.39 * S = 1.365$	$0.16 * E = 0.8$	$0.18 * S = 0.63$
Designation: PM, BA, Domain Expert = 0.3 person		BA, Analyst, Domain Expert=2		Coders and Testers 2		Senior Tester, TL 0.8	
Job Description: Assisting in building SPMP, SRS and prototype, as well as doing the necessary requirement and risk analysis for the project		Job Description: A Domain Expert is an expert in the domain of Spice management.		Job Description: They are involved in performing automated and manual tests to ensure the software created by developers is fit for purpose. Some of the duties include analysis of software, and systems, mitigate risk and prevent software issues.		Job Description: Senior Tester will be responsible for quality process in a project. Tasks will include test case design, test planning, testing of systems developed by the company, test automation and reporting of test results.	

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Contact information: email:asad57409@gmail.com mobile:03402115984	Contact information: Email: smuzair95@gmail.com Mobile: 03212049075	Contact information: email: mohsinamin313@gmail.com Mobile: 03132041187	Contact information: email: daniyalahmed400@gmail.com Mobile: 03492195189
Contact information: email:misbha.shakeel007@gmail.com mobile: 03011220041			

11. Risk Identification

Provide a description of all risks identified for the project. A risk is anything that might detrimentally affect the successful completion of the project if left unaddressed. The contractual, management, and technical risks associated should be **identified** and **assessed** as to the **probability of the risk occurring**, the **cost to correct** if the risk occurs, the impact of the risk on the project, and the suggested mitigation activities and cost of mitigation.

Risk Worksheet

Risk Management Steps:

1	Identify the project's top10 risk items
2	Present a plan for resolving each risk item
3	Update list of top risk items, plan, and results monthly
4	Highlight risk-item status in monthly project reviews. Compare with previous month's ranking status
5	Initiate appropriate corrective actions

Top 10 Risk Items	
Risk Items	Risk Management Techniques
Personnel Shortfalls	Staffing with top talent, job matching; team building; morale building; cross training; pre-scheduling key people
Unrealistic schedules and budgets	Detailed, multi-source cost and schedule estimation; design to cost; incremental development; software reuse; requirement scrubbing
Developing the wrong software functions	Organizational analysis; mission analysis; ops-concept formulation; user surveys; prototyping; early users' manuals
Developing the wrong user interface	Task analysis; prototyping; scenarios; user characterization (functionality, style, workload)
Gold Plating	Requirement scrubbing; prototyping; cost-benefit analysis; design to cost

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Continuing stream of requirement changes	High change threshold; information hiding; incremental development (defer changes to later increments)
Shortfalls in externally furnished components	Benchmarking; inspections; reference checking; compatibility analysis
Shortfalls in externally performed tasks	Reference checking; pre-award audits; award-fee contracts; competitive design or prototyping team building
Real-time performance shortfalls	Simulation; benchmarking; modeling; prototyping; instrumentation; tuning
Straining computer-science capabilities	Technical analysis; cost-benefit analysis; prototyping; reference checking

	Potential Risk	Risk Monitoring Preventive measures	Risk Management and mitigation	Risk Exposure = Probability of Risk Occurrence * Cost of Risk	Prioritize Till next Review
1.	Size of the software being very large and larger number of users than planned due to using eval SDLC and no confirmation of Requirements in RE phase. (Fp→Loc→Effort)	Reviewing constant feedbacks from the customers in project meetings	Being flexible in the software design to accommodate the necessary changes	Cost * Probability of Risk Occurrence = Salary for 2 programmer for 1 month * 0.8 = 1,00,000 * 0.8 0.4 = 48000 24000	
2.	The software not being accepted by the CRM	Response from the CRM , reviewed on every project meeting	Early and intensive interaction with the customer for the success of project.	Cost * Probability of Risk Occurrence = Salary for 1 project manager for 1 month * 0.3 = 60,000 * 0.3 = 18000	
3.	Cost factor involved in this project	Reviewing reports on expenditure and other cost related to the estimated cost in the SPMP	Have additional funding allocated for it in advance and using it in case of emergencies.	Cost * Probability of Risk Occurrence = Salary for financial officer for 1 month * 0.5	

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				= 50,000 *0.5=25,000	
4.	Customer requirements may change	CRM participation in design process and reviewing feedback information in group meetings	A new prototype will replace the previous one to accommodate the change	Cost * Probability of Risk Occurrence = Salary for Project manager for 1 month * 0.4 = 60,000 *0.4 =24,000	
5.	Technology will not meet expectation	Constantly reviewing project progress reports by Project Development Manager and software managers	Exploring alternatives for the outdated technologies	Cost * Probability of Risk Occurrence = Salary for technologist for 1 month * 0.7 = 50,000 *0.7 =35,000	
6.	Lack of training on tools and staff being inexperienced	Reviewing progress report by software managers to determine the status of the project	Providing adequate training that is necessary for the completion of the project	Cost * Probability of Risk Occurrence = Salary for job hirer for 1 month * 0.6 = 50,000 *0.6 =30,000	
7.	The prototype not being delivered on time	Constant reviews among team members to ensure continuous progress on the prototype	Setting deadline before the actual time for submission of the project	Cost * Probability of Risk Occurrence = Salary for project manager for 1 month * 0.2 = 60,000 *0.2 =12,000	

12. Configuration Management Plan

Provide a configuration management plan that defines the person responsible for project configuration management, the procedures that will be used, the planned configuration items, planned release dates for configuration items, and resources required to conduct CM.

CCB members: Asad., Daniyal

Procedures: Resources: Quality Assurance Software

Configuration Items: Ensure that CM is implemented throughout the project's life cycle.

No.	Item	Comments
1.	SRS	Updated According To The New Changed Requirements
2.	PMP	Made Changes In The PMP According To Additional Requirements
3.	Modeling	Made Changes In The PMP Due To The Change In Team
4.	Code Files	Configuration In The Code Files After New Requirements

Ensure that project has a repository for storing configuration items and associated CM records. Briefly describe.

<https://github.com/asad-prog/library-managment-system>

13. Quality Plan

Provide a quality plan that defines the person responsible for project quality assurance, the procedures that will be used and resources required to conduct quality assurance.

QA Manager and Staff: uzair, mohsin and misbha

*Procedures: **Identification, control, audit, and status accounting** will be done.*

Resources: Quality Assurance Software

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Planned Quality Event: Ensure that QA is implemented throughout the project's life cycle. Dates include QA audits and reviews, design walkthroughs and other project activities that QA staff will participate in.

No.	Item	Comments
1.	SRS	Reviewed SRS For Quality Checking
2.	PMP	Reviewed PMP For Quality Checking
3.	PTR	Reviewed PTR After Testing of Project
4	Code Files	Reviewed Code Files After Construction of Project
	Project Release Document	Reviewed Project Release Document Before Deployment of Project

Ensure that project has a repository for storing configuration items and associated QA records.

Ensure that QA audits the baselines and CM activities on a regular basis.