Project Management Plan/Charter

By: Syeda Umema Hani

PROJECT MANAGEMENT PLAN TEMPLATE

Date: 4/December/ 2021

Release #: 1st

Project Manager: Syeda Umema Hani

Approvals:

Project Manager

State Organization Management

User Management- HR

Department of Finance

Other:

Project Management Plan: **29 March**

GI's HRPRL

1. *Project Summary* *(nimra humayun)*

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

Project Name:	***Employee Management system***	***Start Date:***	***1/March/2022***
State Organization::	***PAF Kiet University***	***Submitted by:***	***Group Leader***
Prime Contractor:	***University***	***Date Awarded:***	***18/December/2021***
Current Stage of Project:	***Development Life Cycle - RAD***		

Project is On Schedule:	***Yes:*** □ ✓ ***No:*** □ ***?*** ***Details:*** ***?***	***Project is within Budget:***	***Yes:*** □ ✓ ***No:*** □ ***?*** ***Comments:*** ***?***

Project Summary - Continued

Points of Contact (Stake holder)

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**		**Dr.umema@pafkiet,edu,pk**
Sponsor	**PAF KIET**		
Customers:	**ABC Business**		
Other Stakeholders:	**Member 1: Login Authentication**		
	Member 2: Employee Management		
	Member 3: Department Module		
	Member 4: Project Management		

2. Project Charter (nimra humayun)

Business Problem.

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

Conduction of business 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 **4 major subsystems or Modules** the integration of theses 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 **"Employee Management System"** only.

1. **Module 1 Login Authentication**
2. **Module 2 Employee Management**
3. **Module 3 Department Module**
4. **Module 4 Project Management**

2. Project Charter, continued (nimra humayun)

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:

Module 2 Employee Management with CRUDS

Module 3 Department Module with CRUDS

Module 4 Project Management with CRUDS

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 3,
4. Average loading = 5 ,
5. 15 (5+5+5) = E or 10 (2+2+1) = E **<Write only one after calculating from COCOMO model>**

3. Project Tradeoff Matrix & Status Summary (nimra humayun)

Project Management Plan: **29 March**

GI's HRPRL

Schedule/ Time	**Scope/ Modules**	**Resources/Effort/People**
CONSTRAINED	CONSTRAINED / **ACCEPTED**	CONSTRAINED / Need to be **IMPROVED** (need reduction) / ACCEPTED (Cocomo **Effort = 10 -15** not acceptable our constraint is max **3 members in 3 months**)
		E = 30, S = 10, per month 2 persons, 3 months 5 to 6 persons = **est 7 person**

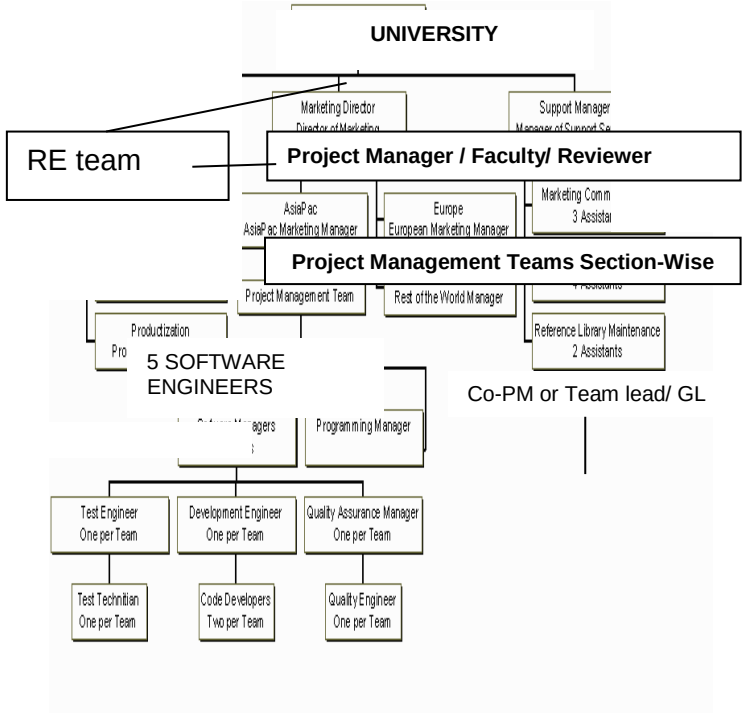
Identify variable to be CONSTRAINED, IMPROVED, ACCEPTED

Comments:

Accepted

4. Project Organization (nimra humayun)

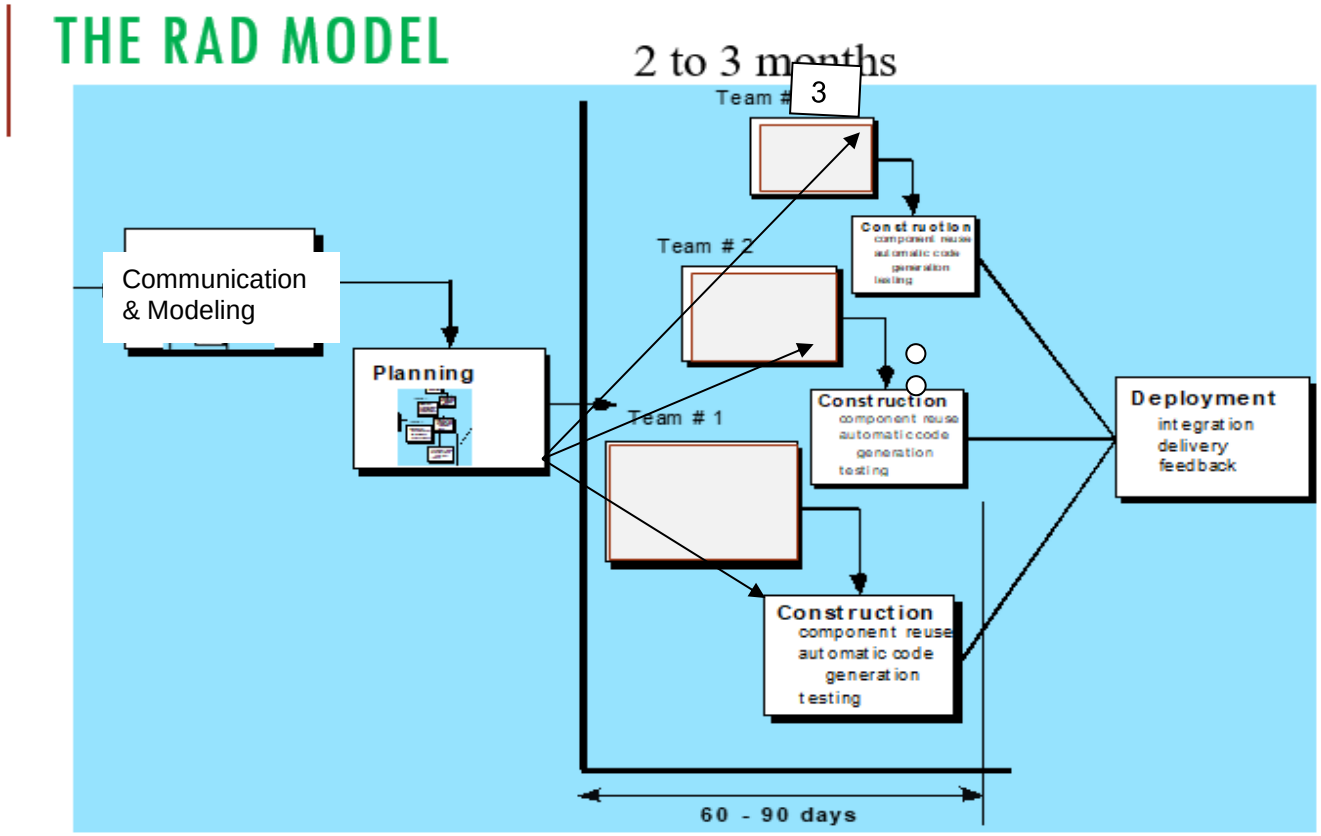
Provide an organization chart that defines the person responsible for at least the following functions: project manager, development manager, quality assurance, and configuration management.



Project Management Plan: **29 March**

GI's HRPRL

SDLC Process Model:



5. Activity List (Work Breakdown Structure) (nimra humayun)

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. Login 2. Register Employee 3. Create Project 4 Create Department
EO	1. Profile 2. View Department 3. View Employee 4 View project
EQ	1. Search Employee 2. Search Department 3. Search projects
ILF	1. Update Department 2. Update Project 3. Update Employee info
ELF	1. _____-_____ 2. _____-_____ 3. _____-_____ 4. _____-_____ 5. _____-_____

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	4	3	12	4	4	16	4	6	24	44

EO	4	4	16	4	5	20	4	7	28	64
EQ	3	3	3	3	7	21	3	6	18	42
ILF	3	7	21	3	0	0	3	15	45	66
ELF	0	5	0	0	7	0	0	10	0	0
Unadjusted Function Point Value =										**216**

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.	Data Communications	3	8.	Online Update	3
2.	Distributed Data Processing	2	9.	Complex Processing	2
3.	Performance	1	10.	Reusability	4
4.	Heavily Used Configuration	4	11.	installation Ease	1
5.	Transaction Rate	5	12.	Operational Ease	3
6.	Online Data Entry – DB	0	13.	Multiple Sites	2
7.	End-User Efficiency	1	14.	Facilitate Change	0
Value Adjustment Factor (VAF) = 31					

D) Technology Complexity Factor calculation

TCF = 0.65 + (VAF * 0.01)
= 0.65 +(31*0.01)
= 0.96

E) Adjusted Function Point Value (AFPV) or Function Point Value (FP) Calculation

AFPV = _ Unadjusted Function Point * TCF = 216 * 0.96 = 207.36
F) Conversion of AFPV in to LOC Size metric the number of LOCs per FP for **C# language 54** and check other languages from https://www.qsm.com/resources/function-point-languages-table, **ASP 51** and **VB.net 52, python 48** Project Size in LOC = AFPV * LOC/FP Project Size in LOC = 207.36 * 54 = 11197.44 LOC
G) Software Size: 11197.44 Software Size for COCOMO: 11.19744 **KLOC** Software Type: **Business**/ Utility/Embedded Model Mode: Cocomo I – Basic – **ORGANIC (0 – 50 KLOC)** / Semi detached/ Embedded
a) **Effort Estimation:** Equation 2.4 * 6.117 ^ 1.05 = **E = 30 persons month**
b) **Schedule Estimation:** Equation 2.5 * 30 ^ 0.38 months = **S = 10 months**
c) **Productivity Estimation:** Equation Loc/E = 335923.2
d) **Average Loading Estimation:** Equation E/S = 3
e) **Average Salary of Technical Staff (AS):** Equation Assume = 50,000 RS
f) **Cost for Salary (Cs):** Equation E * Avg salary = 1500000
g) **Budgeted Cost of Project (Cb):** Equation Cs + Cs * X% = 1500000 + 1500000 * 0.5 = 2250000

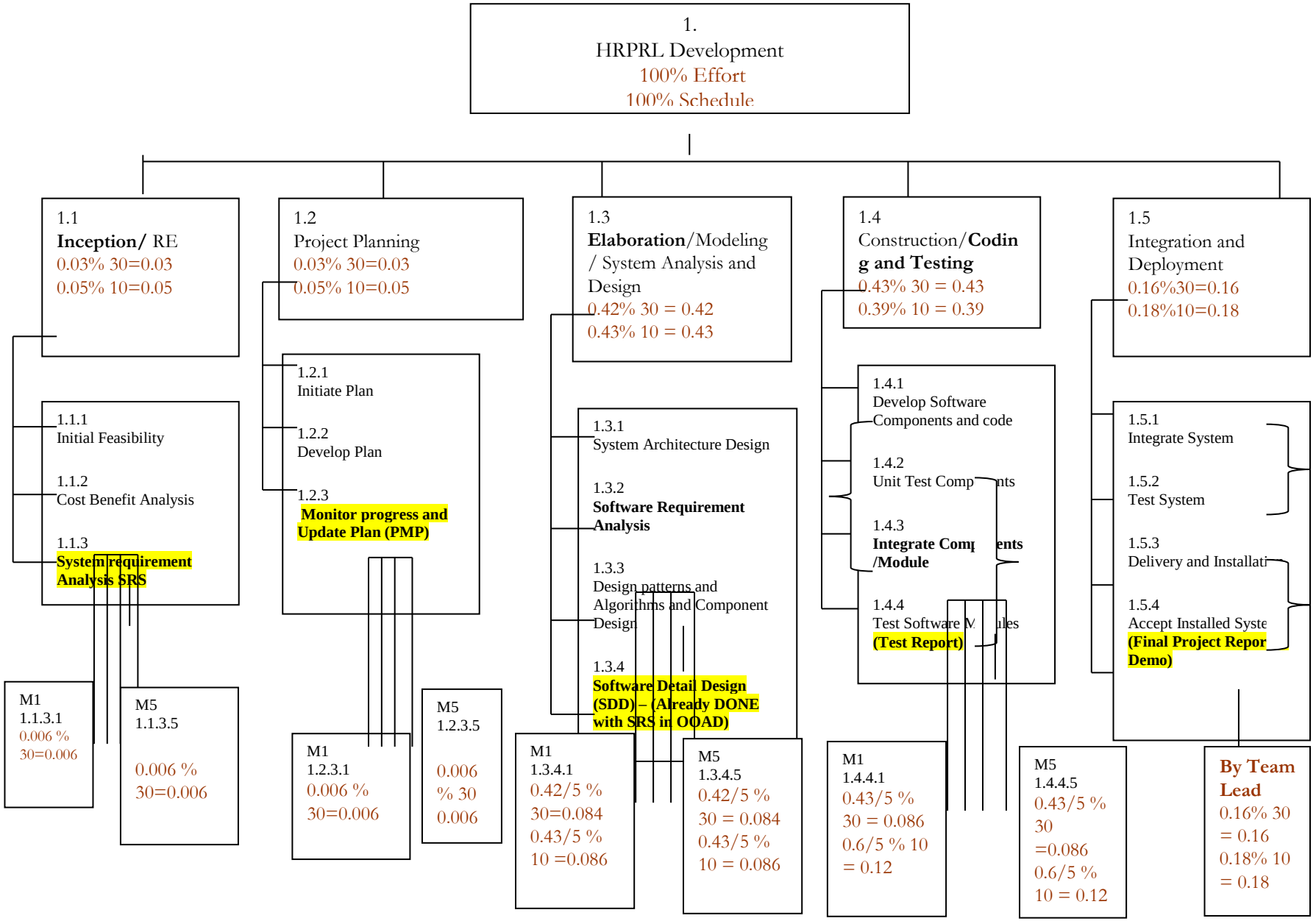
2. **Calculate the phase-wise percentage distribution wise E and S values as given in detailed COCOMO detailed model.**

H) Distribution of Effort and Schedule among Different phases of SDLC

E = ____30_____
S = _____10_____

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 * 30 = 1.8	0.10 * 10 = 1	(0.16+0.26) * 30 = 12.6	(0.19+0.24) 10 =4.3	0.42 * 30 =12.6	0.39 * 10 =3.9	0.16 * 30 =4.8	0.18 * 10 =1.8

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> (nimra humayun)**



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**	**23/11/2021**	**none**	**30/11/2021**
1.1.1	Initial Feasibility		1			
1.1.2	Cost Benefit Analysis		2			
1.1.3	System requirement Analysis SRS		3			
1.1.3.1	System requirement Analysis SRS **for Module 1**		3			
1.1.3.2	System requirement Analysis SRS **for Module 2**		3			
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**	**11/12/2021**	**1.1**	**18/12/2021**

1.3	**Modeling**	**Done in SRS now ERD with Implementation**		**18/12/2021**	**1.1**	**25/12/2021**
1.4	**Implementation and Testing**	**Database and Code, Test Report**		**18/12/2021**	**1.1**	**25/12/2021**
1.5	**Deployment/Demo**	**Demo and Report**		**25/1/2022**	**1.1**	**1/1/2022**

6. Work Product Identification

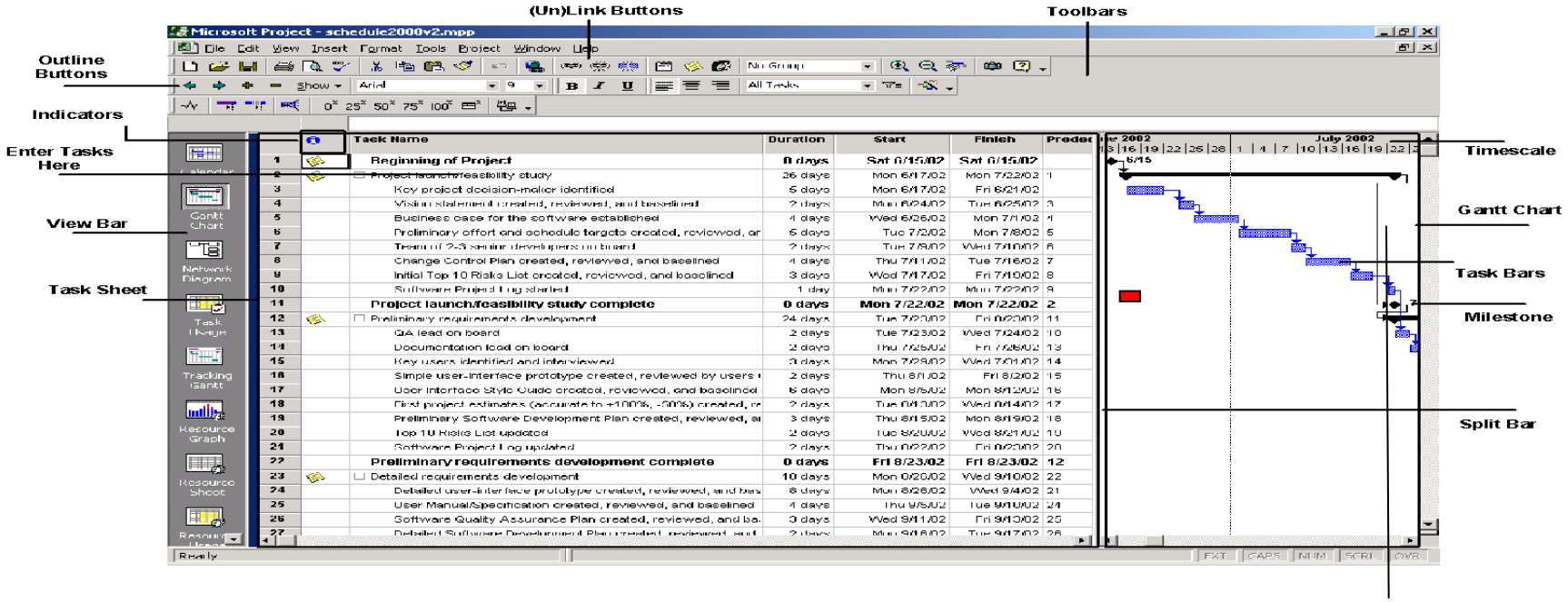
Provide a list of all deliverables required by the project, the date due and the person responsible for the deliverable. Pick Last activities from each phase they are deliverables. **<Complete>**

Deliverable Name	***Due Date***	***Date Delivered***	***Point of Contact***
SRS by Member 1	30/11/2021	6/12/2021	**Student ID**
SRS by Member 2			Student ID
SRS by Member 3			
SRS by Member 4			
SRS by Member 5			
PMP by Member 1			
PMP by Member 2			
PMP by Member 3			
PMP by Member 4			Student ID
PMP by Member 5			
Design (DB+GUI) by Member 1			
Design (DB+GUI) by Member 1			
Design (DB+GUI) by Member 1			
Design (DB+GUI) by Member 1			Student ID
Design (DB+GUI) by Member 1			

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 CONTROLL.

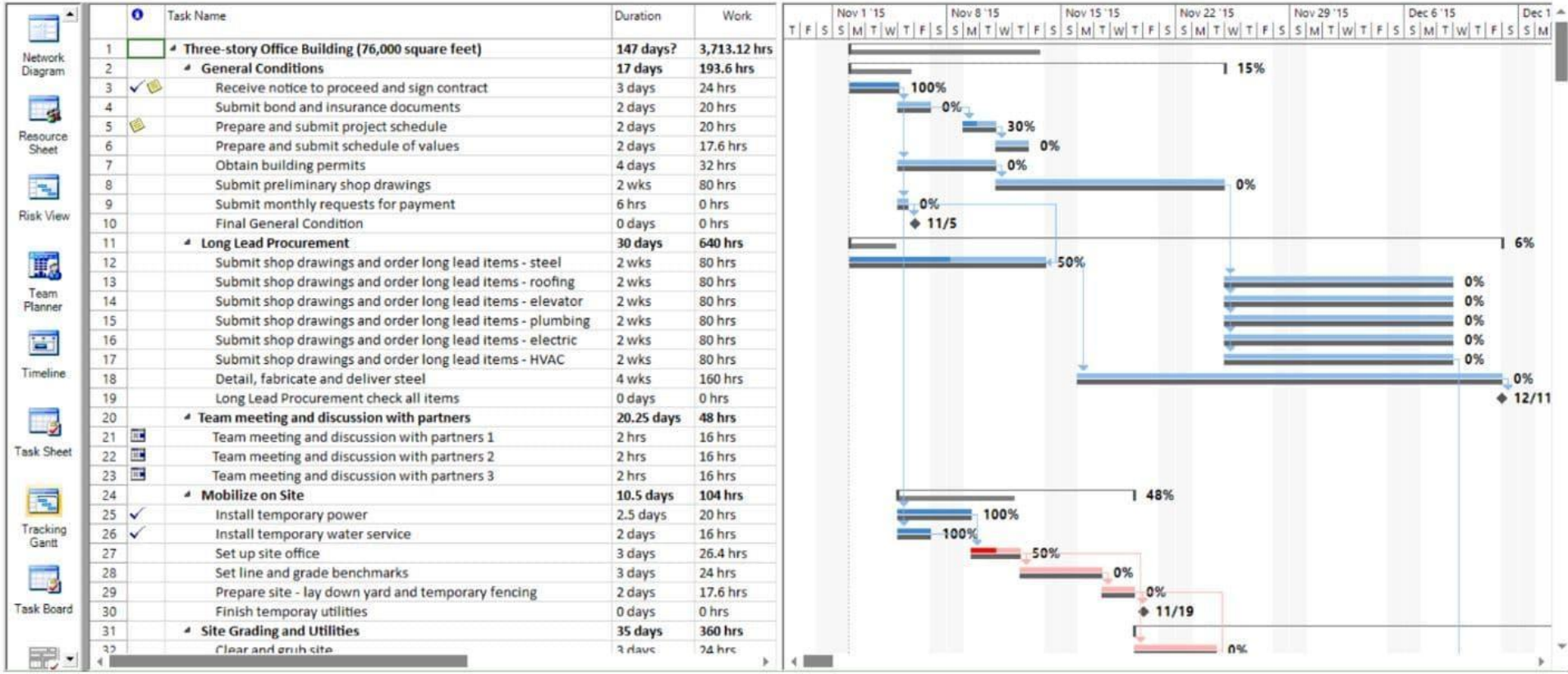
<MUST IMPLEMENT GANTT CHART ON ANY SOFTWARE OR WEBAPPLICATION>



Project Management Plan: **29 March**

GI's HRPRL

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



		Task Name	Duration	Work
1		**Three-story Office Building (76,000 square feet)**	**147 days?**	**3,713.12 hrs**
2		**General Conditions**	**17 days**	**193.6 hrs**
3		Receive notice to proceed and sign contract	3 days	24 hrs
4		Submit bond and insurance documents	2 days	20 hrs
5		Prepare and submit project schedule	2 days	20 hrs
6		Prepare and submit schedule of values	2 days	17.6 hrs
7		Obtain building permits	4 days	32 hrs
8		Submit preliminary shop drawings	2 wks	80 hrs
9		Submit monthly requests for payment	6 hrs	0 hrs
10		Final General Condition	0 days	0 hrs
11		**Long Lead Procurement**	**30 days**	**640 hrs**
12		Submit shop drawings and order long lead items - steel	2 wks	80 hrs
13		Submit shop drawings and order long lead items - roofing	2 wks	80 hrs
14		Submit shop drawings and order long lead items - elevator	2 wks	80 hrs
15		Submit shop drawings and order long lead items - plumbing	2 wks	80 hrs
16		Submit shop drawings and order long lead items - electric	2 wks	80 hrs
17		Submit shop drawings and order long lead items - HVAC	2 wks	80 hrs
18		Detail, fabricate and deliver steel	4 wks	160 hrs
19		Long Lead Procurement check all items	0 days	0 hrs
20		**Team meeting and discussion with partners**	**20.25 days**	**48 hrs**
21		Team meeting and discussion with partners 1	2 hrs	16 hrs
22		Team meeting and discussion with partners 2	2 hrs	16 hrs
23		Team meeting and discussion with partners 3	2 hrs	16 hrs
24		**Mobilize on Site**	**10.5 days**	**104 hrs**
25		Install temporary power	2.5 days	20 hrs
26		Install temporary water service	2 days	16 hrs
27		Set up site office	3 days	26.4 hrs
28		Set line and grade benchmarks	3 days	24 hrs
29		Prepare site - lay down yard and temporary fencing	2 days	17.6 hrs
30		Finish temporay utilities	0 days	0 hrs
31		**Site Grading and Utilities**	**35 days**	**360 hrs**
32		Clear and grub site	3 days	24 hrs

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)**
1st miles tone		**8 workin g days** **60**	**40**	**60 – 40 = 20**	**40 + 20 = 60**	**(-1 -- 0 -- +1)** **(40 - 60)/ 40 = - 0.5** **Under the budget 50V** **60-60 / 60 = 0/60 = 0** **100% completion 0V** **(70 – 60)/70 = + .14** **Ahead of budget 14V**

2nd miles tone		**60**	**40**	**60 – 40 = 20**	**40 + 20 = 60**	**(40-60)/ 40 = - 0.5** **Under the budget 50** **60-60 / 60 = 0/60 = 0 100% completion** **(70 – 60)/70 = + .14** **Ahead of budget 14**
					%remaining	

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							
E = ____16_____ **S = _____7.1_____** Avg Loading = 2 person per month 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							
Plan and Requirement		**Modeling / System Design & Detailed Design**		**Module Coding and Unit Testing**		**Integration & Deployment**	
0.06 * E = **0.96**	0.10 * S = **0.71**	(0.16+0.26) * E = 7	(0.19+0.24) S = 3	0.42 * E = 7	0.39 * S = 2.76	0.16 * E = 2.56	0.18 * S = 1.2
Designation: PM, ~~BA, Domain Expert~~ = 0.96 1 person		BA, Analyst, Domain Expert = 7 names		Coders and Testers 7 names		Senior Tester, TL 2.5	
Job Description: Assisting in building SPMP, SRS and prototype, as well as doing the necessary requirement and risk analysis for the project							
Contact information: email, mobile							

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

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** = 60000 *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.		
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.		

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**		
5.	**Technology** will not meet **expectation**	Constantly reviewing **project progress reports** by Project Development Manager and software managers	**Exploring alternatives** for the outdated technologies		
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**		
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		

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:

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

No.	Item	Comments
1.		
2.		
3.		

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

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:

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.		
2.		
3.		

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.