Project Management Plan/Charter

By: Syeda Umema Hani

PROJECT MANAGEMENT PLAN TEMPLATE

Date: 30 /April / 2022

Release #: 1st

Project Manager: <u>Syeda Umema Hani</u>

Approvals:

_____
Project Manager

_____   _____
State Organization Management   **User Management- HR**

_____   _____
Department of Finance   *Other:*

1.   Project Summary

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

Project Name:	**School Management System (SMS)**	*Start Date:*	**26/Feb /2022**

State Organization::	**PAF Kiet University**	*Submitted by:*	**Group Leader**

Prime Contractor:	**University**	*Date Awarded:*	**17/April /2022**

Current Stage of Project:	**Development Life Cycle - RAD**

Project is On Schedule:	*Yes:* ☝ *No:* *Details:* Yes, our project is on schedule that shows all the tasks related to SMS includes Registration, Marks-Students, Faculty Courses, Notice Board & PTM & Timetable. These are the modules have subtasks in it.	*Project is within Budget:*	*Yes:* ☝ *No:* *Comments:* Yes, this project is in our budget i.e. it has zero cost, which means it has no hardware once the libraries and tools are installed in the computer, it runs easily.

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**		**Dr.umema@pafkiet,edu,pk**
Sponsor	**PAF KIET**		
Customers:	**School Management (including Accounts, Teacher, and Students etc.)**	(021) 36363629	info@mpa.edu.pk
Other Stakeholders:	**Syed Muhammad Azhar**	**+92 341 2200790**	**syedazhar12@gmail.com**
	Ali Muhammad	**+92 3152583375**	**aliqasim.am7@gmail.com**
	Muhammad Mughees	**+92 302 9254388**	**Muhammadmughees125@gmail.com**
	Syeda Raahima	**+92 332 1304351**	**rahimabatool@gmail.com**
	Shah Muhammad Azhar	**+92 331 2284327**	**Shahazhar135@gmail.com**

2.   *Project Charter (62749 - Muhammad Mughees)*

Business Problem.

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

> **Conduction or assigning of students & Teachers 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 theses sub-system will form the main system. All the sub-systems will be tightly integrated 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 **"*School Management System (SMS)*"** only.
>
> 1. **Module 1:** *Login*
>
> 2. **Module 2:** *Registration*
>
> 3. **Module 3:** *Marks - Students*
>
> 4. **Module 4:** *Faculty Courses*
>
> 5. **Module 5:** *Notice Board & PTM*
>
> 6. **Module 6:** *Timetable*

2. *Project Charter, continued (64335 - Syeda Raahima)*

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. **Module 1:** *Registration with CRUDS*

2. **Module 2:** *Marks - Students with CRUDS*

3. **Module 3:** *Faculty Courses with CRUDS*

4. **Module 4:** *Notice Board & PTM with CRUDS*

5. **Module 5:** *Timetable with CRUDS*

Success Factors:

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

1. Complete deployment of all five 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. 5 = E

3. *Project Tradeoff Matrix & Status Summary (62822 - Shah M. Azhar)*

SMS

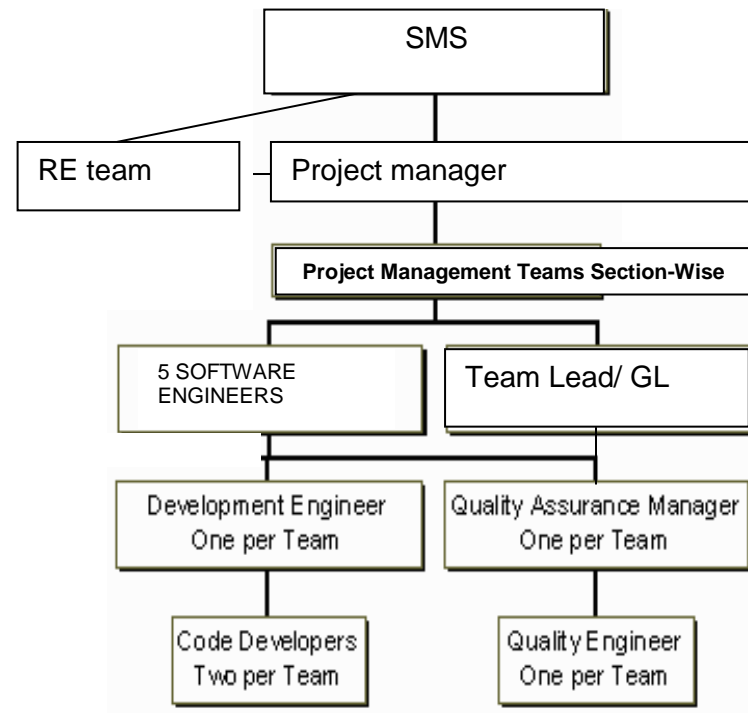| Schedule/ Time	Scope/ Modules	Resources/Effort/People
CONSTRAINED	CONSTRAINED / **ACCEPTED**	CONSTRAINED / Need to be **IMPROVED** (need reduction) / ACCEPTED (Cocomo **Effort = 10 − 15** not acceptable our constraint is max **5 members in 3.5 months**)
		E = 5, S = 3.5, per month 2 persons, 3 months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

Identify variable to be CONSTRAINED, IMPROVED, ACCEPTED
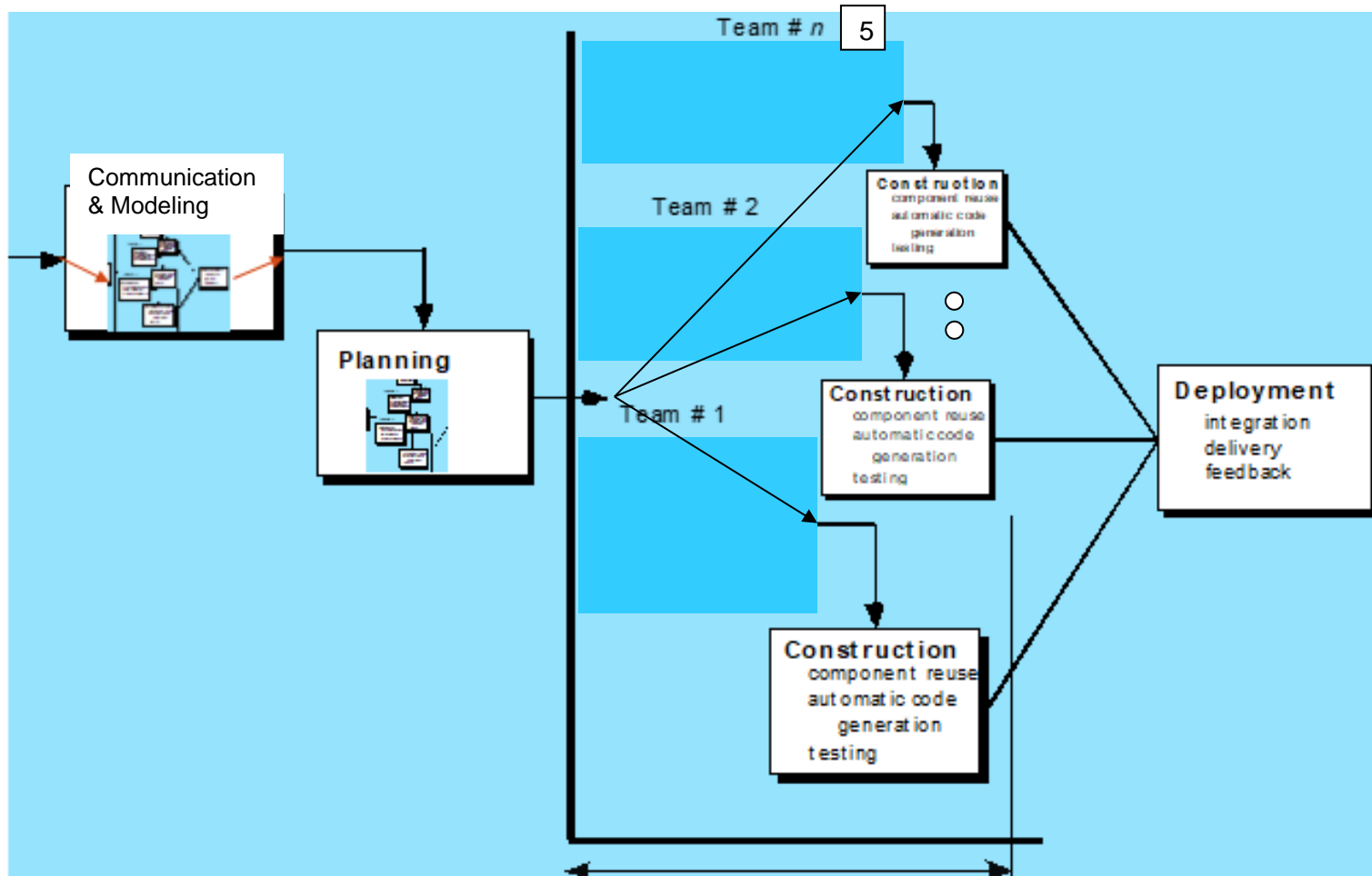
Comments:

Accepted

4.   Project Organization (62606 - Syed M. Azhar)

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

```
                          ┌─────────────┐
                          │     SMS     │
                          └─────────────┘
                         /        │
          ┌──────────┐   ┌──────────────────┐
          │ RE team  │───│ Project manager  │
          └──────────┘   └──────────────────┘
                                  │
                    ┌────────────────────────────────────┐
                    │ Project Management Teams Section-Wise│
                    └────────────────────────────────────┘
                         │
          ┌──────────────────┐   ┌──────────────────┐
          │ 5 SOFTWARE       │   │ Team Lead/ GL    │
          │ ENGINEERS        │   │                  │
          └──────────────────┘   └──────────────────┘

          ┌──────────────────┐   ┌──────────────────────┐
          │ Development Engineer│ │ Quality Assurance Manager│
          │ One per Team      │   │ One per Team         │
          └──────────────────┘   └──────────────────────┘
                 │                      │
          ┌──────────────┐       ┌──────────────┐
          │ Code Developers│     │ Quality Engineer│
          │ Two per Team  │       │ One per Team  │
          └──────────────┘       └──────────────┘
```

SDLC Process Model:

5.   *Activity List (Work Breakdown Structure) (64413 - Ali Muhammad - GL)*

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>**

<table>
<tr><td colspan="6" align="center">Software Size Estimation using Function Point Method</td></tr>
<tr><td colspan="6" align="center">A)   Detail of 5 Transaction Types, at most 5 under each category</td></tr>
<tr><td></td><td colspan="5">Write down exact Screen or Forms names, or Tables, or Reports name for each count value.</td></tr>
<tr><td>EI</td><td>1. Registration</td><td>2. Marks - Students</td><td>3. Faculty Courses</td><td>4. Notices & PTM</td><td>5. Timetable</td></tr>
<tr><td>EO</td><td>1. View Portal</td><td>2. View Marks</td><td>3. View Courses</td><td>4. View Notices</td><td>5. View Timetable</td></tr>
<tr><td>EQ</td><td>1. Student</td><td>2. Check Marks</td><td>3. Std. Courses</td><td>4. Notice</td><td>5. Student</td></tr>
<tr><td>ILF</td><td>1. Faculty</td><td>2. Upload Marks</td><td>3. Faculty Courses</td><td>4. Fac. Notices</td><td>5. Class Timetable</td></tr>
<tr><td>ELF</td><td>1.   8</td><td>2.   0</td><td>3.   1</td><td>4.   0</td><td>5.   0</td></tr>
</table>

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	2	4	8	1	6	6	23
EO	3	4	12	2	5	10	1	7	7	29

EQ	3	3	9	2	4	8	1	6	6	23
ILF	3	7	21	4	0	0	3	15	45	66
ELF	0	5	0	0	7	0	0	10	0	0

Unadjusted Function Point Value =	**141**

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.		3	8.		3
2.		2	9.		2
3.		1	10.		4
4.		4	11.		1
5.		5	12.		3
6.		0	13.		2
7.		1	14.		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

$$AFPV = \_ \text{ Unadjusted Function Point} * TCF$$
$$= 141 * 0.96$$
$$= 135.36$$

F) Conversion of AFPV in to LOC Size metric

the number of LOCs per FP for **C# language 54**, **ASP 51**

Project Size in LOC = AFPV * LOC/FP
Project Size in LOC = 135.36 * 51 = 6,903.36 LOC

G) Software Size: **6,903.36**
Software Size for COCOMO: **6.90336 KLOC**
Software Type: **Business**/ Utility/Embedded
Model Mode: Cocomo I – Basic – **ORGANIC (0 – 50 KLOC)** / Semi detached/ Embedded

a)	**Effort Estimation:** Equation 2.4 * **6.90336 ^ 1.05 = E = 18 persons month**	
b)	**Schedule Estimation:** Equation 2.5 * 18 ^ 0.38 months = **S = 7 months**	
c)	**Productivity Estimation:** Equation Loc/E =6,903.36 /18 = 384	
d)	**Average Loading Estimation:** Equation E/S = 18/7 = 2.5 ≈ 3	
e)	**Average Salary of Technical Staff (AS):** Equation Assume = 50,000 RS	
f)	**Cost for Salary (Cs):** Equation E * Avg salary = 18 * 50000 = 900,000	
g)	**Budgeted Cost of Project (Cb):** Equation Cs + Cs * X% = Cb => 900000 + (900000*10%) = > 990,000	

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 = ____18_____ S = _____7_____							
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 * E = 1.08	0.10 * S = 0.7	(0.16+0.26) * E = 7.56	(0.19+0.24) S= 3.01	0.42 * E = 7.56	0.39 * S = 2.73	0.16 * E = 2.88	0.18 *S =1.26

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>**

```
                    ┌─────────────────────────┐
                    │           1.            │
                    │    SMS Development       │
                    │    100% Effort           │
                    │    100% Schedule         │
                    └─────────────────────────┘
```

1.1
Inception/ RE
0.03% E = 0.54
0.05% S = 0.35

1.2
Project Planning
0.03% E = 0.54
0.05% S = 0.35

1.3
Elaboration/Modeling / System Analysis and Design
0.42% E = 7.56
0.43% S = 3.01

1.4
Construction/**Coding and Testing**
0.43% E = 7.74
0.39% S = 2.73

1.5
Integration and Deployment
0.16% E = 2.88
0.18% S = 1.26

1.1.1
Initial Feasibility

1.1.2
Cost Benefit Analysis

1.1.3
System requirement Analysis SRS

1.2.1
Initiate Plan

1.2.2
Develop Plan

1.2.3
Monitor progress and Update Plan (PMP)

1.3.1
System Architecture Design

1.3.2
Software Requirement Analysis

1.3.3
Design patterns and Algorithms and Component Design

1.3.4
Software Detail Design (SDD) – (Already DONE with SRS in OOAD)

1.4.1
Develop Software Components and code

1.4.2
Unit Test Components

1.4.3
Integrate Components /Module

1.4.4
Test Software Modules **(Test Report)**

1.5.1
Integrate System

1.5.2
Test System

1.5.3
Delivery and Installation

1.5.4
Accept Installed System **(Final Project Report & Demo)**

M1
1.1.3.1
0.06 % E=0.108

M5
1.1.3.5
0.006 % E = 0.108

M1
1.2.3.1
0.006 % E=0.108

M5
1.2.3.5
0.006 % E = 0.108

M1
1.3.4.1
0.084 % E =1.512
0.086 % S = 0.602

M5
1.3.4.5
0.084 % E =1.512
0.086 % S = 0.602

M1
1.4.4.1
0.086 % E =1.548
0.12 % S = 0.84

M5
1.4.4.5
0.086 % E =1.548
0.12 % S = 0.84

By Team Lead
0.16% E = 2.88
0.18% S=1.26

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**	**26/02/2022**	**none**	**05/03/2022**
1.1.1	**Initial Feasibility**	Starting requirements	1	**27/2/2022**	**none**	**01/3/2022**
1.1.2	**Cost Benefit Analysis**	Determining the costs	1	**01/3/2022**	**none**	**02/3/2022**
1.1.3	**System requirement Analysis SRS**	**Understanding the business and module**	**1**	**02/3/2022**	**none**	**03/3/2022**
1.1.3.1	System requirement Analysis SRS **for Module 1**	**Understanding the business and module 1**	1	**03/3/2022**	**none**	**04/3/2022**
1.1.3.2	System requirement Analysis SRS **for Module 2**	**Understanding the business and module 2**	1	**04/3/2022**	**none**	**05/03/2022**
1.1.3.3	System requirement Analysis SRS **for Module 3**	**Understanding the business and module 3**	1	**05/03/2022**	**none**	**05/03/2022**
1.1.3.4	System requirement Analysis SRS **for Module 4**	**Understanding the business and module 4**	1	**05/03/2022**	**none**	**05/03/2022**
1.1.3.5	System requirement Analysis SRS **for Module 5**	**Understanding the business and module 5**	1	**05/03/2022**	**none**	**05/03/2022**
1.1.3.6	Merging of all parallel Modules 1,2,3,4,5	Combining all the modules	1	**05/03/2022**	**none**	**05/03/2022**

1.1.4	Milestone (SRS) and Review meeting	Finalizing and meeting	0	**05/03/2022**	none	**05/03/2022**
1.2	**Project Planning**	**Project Management Planning**	**14 Days**	**06/03/2022**	**1.1**	**20/03/2022**
1.2.1	Planning for module 1	Planning the management for module 1	2	**8/3/2022**	**1.1**	**10/3/2022**
1.2.2	Planning for module 2	Planning the management for module 2	2	**10/3/2022**	**1.1**	**12/3/2022**
1.2.3	Planning for module 3	Planning the management for module 3	2	**12/3/2022**	**1.1**	**14/3/2022**
1.2.4	Planning for module 4	Planning the management for module 4	2	**14/3/2022**	**1.1**	**16/3/2022**
1.2.5	Planning for module 5	Planning the management for module 5	2	**16/3/2022**	**1.1**	**20/3/2022**
1.2.6	Merging the planning of all modules	Combining all the modules planning	4	**20/3/2022**	**1.1**	**20/3/2022**
1.3	**Modeling**	**Done in SRS now ERD with Implementation**	**14 Days**	**06/03/2022**	**1.1**	**20/03/2022**
1.3.1	Modeling and designing for module 1	Designing of GUI for module 1	2	**8/3/2022**	**1.1**	**10/3/2022**
1.3.2	Modeling and designing for module 2	Designing of GUI for module 2	2	**10/3/2022**	**1.1**	**12/3/2022**
1.3.3	Modeling and designing for module 3	Designing of GUI for module 3	2	**12/3/2022**	**1.1**	**14/3/2022**
1.3.4	Modeling and designing for module 4	Designing of GUI for module 4	2	**14/3/2022**	**1.1**	**16/3/2022**
1.3.5	Modeling and designing for module 5	Designing of GUI for module 5	2	**16/3/2022**	**1.1**	**20/3/2022**
1.3.6	Merging all the modeling of all the modules	Combining all the GUI in the software	4	**20/3/2022**	**1.1**	**20/3/2022**

1.4	Implementation and Testing	Database and Code, Test Report	24 Days	21/03/2022	1.1	15/04/2022
1.4.1	Implementation for module 1	Coding for module 1	4	21/3/2022	1.1	25/3/2022
1.4.2	Implementation for module 2	Coding for module 2	4	25/3/2022	1.1	29/3/2022
1.4.3	Implementation for module 3	Coding for module 3	4	29/3/2022	1.1	03/4/2022
1.4.4	Implementation for module 4	Coding for module 4	4	03/4/2022	1.1	07/4/2022
1.4.5	Implementation for module 5	Coding for module 5	4	07/4/2022	1.1	11/4/2022
1.4.6	Testing, Finalizing and combining the implementation of all the modules	Combining all the code and files into one application	4	11/4/2022	1.1	15/4/2022
1.5	Deployment/Demo	Demo and Report	1 Day	30/4/2022	1.1	01/5/2022
1.5.1	Deployment of the project	Giving the final application to the customer	1	01/5/2022	1.1	01/5/2022

6. Work Product Identification (64335 – Syeda Raahima)

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	03/3/2022	03/3/2022	**64413**
SRS by Member 2	04/3/2022	04/3/2022	64335
SRS by Member 3	05/3/2022	05/3/2022	62749
SRS by Member 4	05/3/2022	05/3/2022	62822
SRS by Member 5	05/3/2022	05/3/2022	62606
PMP by Member 1	08/3/2022	08/3/2022	**64413**
PMP by Member 2	10/3/2022	10/3/2022	64335
PMP by Member 3	12/3/2022	12/3/2022	62749
PMP by Member 4	14/3/2022	14/3/2022	62822
PMP by Member 5	16/3/2022	16/3/2022	62606
Design (DB+GUI) by Member 1	08/3/2022	08/3/2022	**64413**
Design (DB+GUI) by Member 1	10/3/2022	10/3/2022	64335
Design (DB+GUI) by Member 1	12/3/2022	12/3/2022	62749
Design (DB+GUI) by Member 1	14/3/2022	14/3/2022	62822
Design (DB+GUI) by Member 1	16/3/2022	16/3/2022	62606

7.   *SCHEDULE (62749 – Muhammad Mughees)*

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.
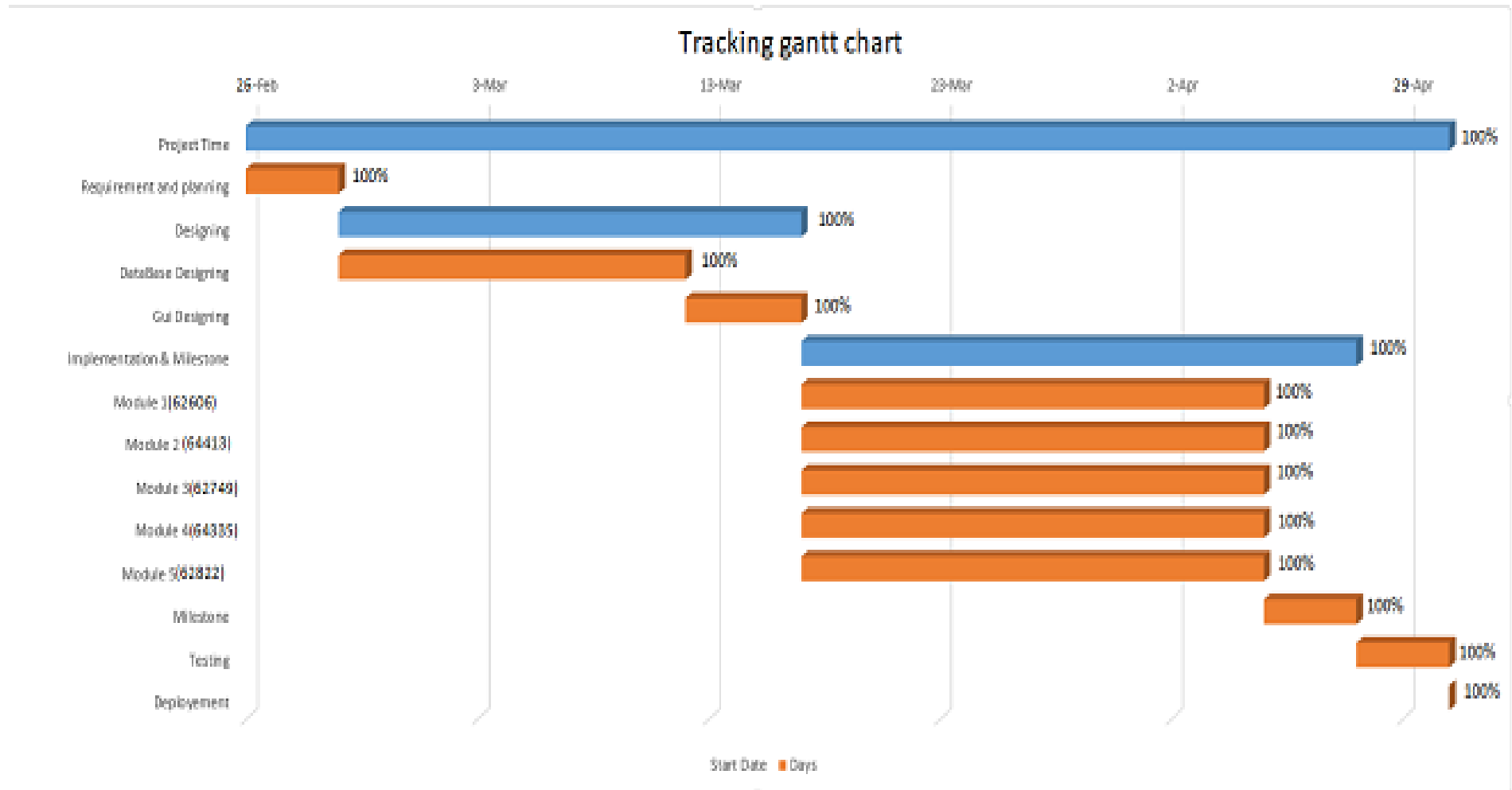
<MUST IMPLEMENT GANTT CHART ON ANY SOFTWARE OR WEBAPPLICATION>

Tracking gantt chart
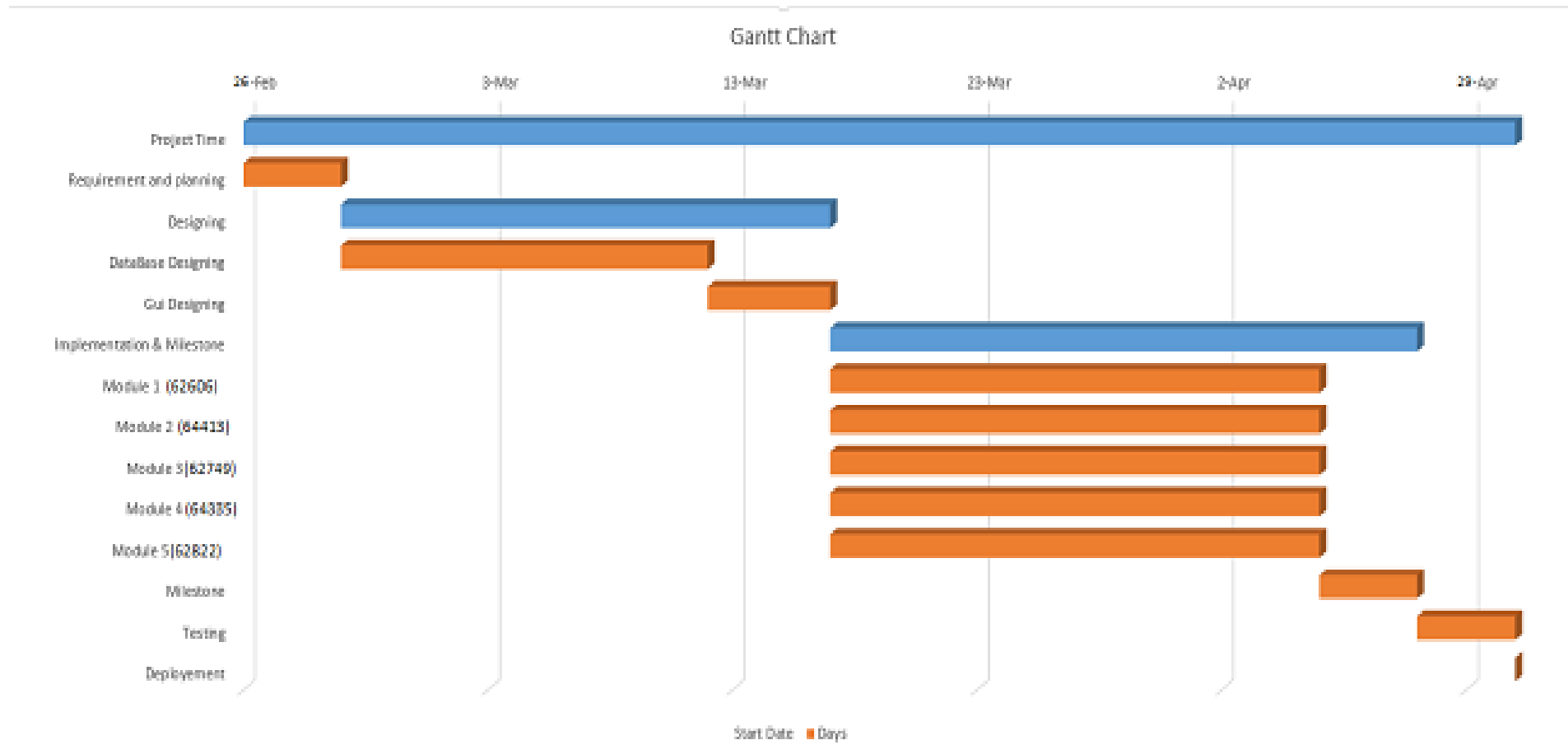
8. *Estimated Cost at Completion (62606 – Syed Azhar)*

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**	**60**	**60 – 60 = 0**	**60 + 0 = 60**	**60-60 / 60 = 0/60 = 0** **100% completion 0V**
2nd miles tone		**60**	**60**	**60 – 60 = 0**	**60 + 00 = 60**	**60-60 / 60 = 0/60 = 0** **100% completion**
					%remaining	

9. *Resource Loading Profiles – Staffing (62822 – Shah M. Azahr)*

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

<table>
<tr><td colspan="8" align="center">Resource Loading Profiles</td></tr>
<tr><td colspan="8">

E = ____18_____

S = _____7_____

Avg Loading = 3 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

</td></tr>
<tr>
<td colspan="2">Plan and Requirement</td>
<td colspan="2">Modeling / System Design & Detailed Design</td>
<td colspan="2">Module Coding and Unit Testing</td>
<td colspan="2">Integration & Deployment</td>
</tr>
<tr>
<td>0.06 * E = 1.08
approx 1</td>
<td>0.10 * S =
0.7</td>
<td>(0.16+0.26)
* E = 7.56</td>
<td>(0.19+0.24)
S = 3.01</td>
<td>0.42 * E = 7.56</td>
<td>0.39 * S = 2.73</td>
<td>0.16 * E =
2.88</td>
<td>0.18 * S
= 1.26</td>
</tr>
<tr>
<td colspan="2">Designation: PM, ~~BA, Domain Expert~~ = 1.08 1 person</td>
<td colspan="2">BA, Analyst, Domain Expert = 7 names</td>
<td colspan="2">Coders and Testers 7 names</td>
<td colspan="2">Senior Tester, TL 2.8</td>
</tr>
<tr>
<td colspan="2">Job Description: Assisting in building SPMP, SRS and prototype, as well as doing the necessary requirement and risk analysis for the project</td>
<td colspan="2">Creating a detailed business analysis, outlining problems, Planning and monitoring. Pricing. Reporting. Defining business requirements and reporting them back to stakeholders.</td>
<td colspan="2">A typical unit test contains 3 phases: First, it initializes a small piece of an application it wants to test (also known as the system under test, or SUT), then it applies some stimulus to the system under test.</td>
<td colspan="2">Development and integration services support the implementation and rollout of new network infrastructure, including consolidation of established software infrastructure.</td>
</tr>
</table>

Contact information: email:aliqasim.am7@gmail.com @gmail.com mobile:03152583375	Contact information: Email: rahimabatool@gmail.com Mobile: 03321304351	Contact information: email: muhammadmughees125@gmail.com Mobile: 03029254388	Contact information: email: shahazhar135@gmail.com Mobile: +92 331 2284327
Contact information: Email:syedazhar12@gmail.com mobile: +92 341 2200790			

11.   Risk Identification (62749)

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

	Probability of loss	*Size of loss*	*Risk exposure weeks*
Addition of unknown feature	*35%*	*8*	*2.8*
Additional requirement	*5%*	*20*	*1.0*
Facilities no ready on time	*10%*	*2*	*0.2*
Overlay schedule	*50%*	*5*	*2.5*

	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	*Example*
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	*Example*
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** = 50,000 *0.5=25,000	*Example*
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	*Example*
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	*Example*

				=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	*Example*
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	*Example*

12.   Configuration Management Plan (64335 - Syeda Raahima & 64413 – Ali Muhammad)

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: Ali, Raahima

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 Requirments**

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

https://github.com/AliMuhammad229/School-Management-System-SMS-

13.   Quality Plan (62749, 62822 & 62606)

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: Mughees, Shah M. Azhar and Syed M. Azhar

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

Resources: Quality Assurance Software

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**

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.