PUCIT
Punjab University College of Information Technology

MENTOR-HUB

First Deliverable

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1. Introduction

In the dynamic startup landscape, **Mentor-Hub stands** as a beacon of support and guidance for aspiring entrepreneurs and seasoned mentors alike. This transformative platform, aptly named Mentor-Hub, is a response to the pressing **need for an effective and purposeful connection between mentors and business startups**. Recognizing the challenges and complexities inherent in entrepreneurial journeys, we aim to empower the startup community. **Our vision** is to provide a clear roadmap for project stakeholders within the Mentor-Hub framework, ensuring shared objectives, risk assessment, and the financial framework for detailed planning. As we embark on this journey, **the dynamic vision** of Mentor-Hub continues to evolve, guided by an unwavering commitment to delivering value to both mentors and business startups.

2. Project Feasibility Report

The project's feasibility focuses on evaluating its viability and practicality. Our project feasibility report will provide a comprehensive analysis of potential feasibility-related considerations from various angles. It involves developing and integrating key components to ensure a well-rounded solution. The fundamental objective of this project is to streamline and automate the mentorship and guidance services at a foundational level, catering to the needs of both mentors and startup users.

2.1) Technical Feasibility

The technical feasibility depends upon the implementation of functional requirements, so our features are technically feasible.
Our chosen **software development tools**, including Visual Studio Code, PyCharm, Postman, MySQL, Jupyter Notebook, and Git/GitHub, ensure smooth integration and efficient collaboration. Familiarity with these tools among all team members further ensures a streamlined development process. Additionally, our team's prior experience in website development, particularly in **Python**, expedites project development.
Overall, the **mentor hub is technically feasible** and will be implemented within optimal cost solution and in time by altogether team effort.

2.2) Operational Feasibility

We're creating a website to connect new entrepreneurs with experienced mentors. Our system provides real-time communication with multiple experts, resource sharing including documents and advice throughout their entrepreneurial journey.
According to requirements of project, **our team will complete this project** on time.

2.3) Economic Feasibility

MentorHub is designed for **accessibility and cost-effectiveness**, operating smoothly on various devices (desktop, laptops and smartphones) without external hardware requirements. Subscription plans ensure **revenue generation**, supporting the platform and encouraging mentor participation. The real value lies in connecting new entrepreneurs with experienced mentors, reducing failure risks and fostering growth and innovation in the entrepreneurial landscape.
MentorHub's cost-effective and accessible approach, combined with its revenue generation and guidance, makes it a win-win solution for all stakeholders involved.

2.4) Schedule Feasibility

With a **one-year project timeline**, we have ample time for requirement analysis, design, comprehensive development, testing, and meticulous refinement.
Our project activities have been thoroughly analyzed and scheduled, with a focus on realworld scenarios and the importance of meeting deadlines and milestones, as indicated in the provided Gantt chart. As a result, **we anticipate no delays in the project schedule**.

2.5) Specification Feasibility

The specification feasibility of the MentorHub project depends on the **clarity and correctness of the requirements**. Our website will achieve user satisfaction because we are very clear about the user's requirements. Mentor Hub project requirements are complete, clear and **realistically achievable**.
Mentor-Hub platform offers a wide range of features to help users manage their profiles, find the right mentors, communicate in real-time, and manage payments and resources. The platform also incorporates essential feedback and reporting mechanisms to continuously monitor and enhance its performance.It also encounters challenges like finding mentors who are willing to participate, ensuring that users actively engage with the platform, and maintaining the delivery of high-quality mentorship.
Despite the above constraints, MentorHub is confident that it can become a valuable resource for startup founders and mentors alike. The platform's broad scope and commitment to accessibility make it a unique and promising offering in the startup community.

2.6) Information Feasibility

Information feasibility is a **critical aspect** of the MentorHub project. It focuses on ensuring that the data and **information** within the platform are **complete, reliable, and meaningful**. All the information regarding to this application development has been researched. This means that all necessary data is included, the information is accurate and trustworthy and it serves its intended purpose effectively.
By maintaining high standards of information feasibility, MentorHub ensures that users can rely on the platform's data for informed decision-making, thus enhancing the overall quality of

the mentorship experience. The information we've gathered is **good enough, dependable, and meaningful** for building our application with all its features.

2.7) Motivational Feasibility

The Mentorship Platform project emphasizes motivation as a key factor in its success. It complements broader objectives and benefits, motivating everyone involved to **work hard and achieve goals.** The platform's vision aims to make a real difference in start-up businesses and society by covering basic needs like financial stability and helping people achieve their dreams. It also **promotes teamwork**, with mentors and users working together to set and reach goals, boosting motivation and providing valuable advice. The valuable advice of mentors keeps entrepreneurs going and **reduces losses.**

2.8) Legal & Ethical Feasibility

The Mentor-Hub platform is designed to comply with all applicable **laws and regulations**, including data privacy, intellectual property, and user protection. The platform will maintain user privacy by collecting and storing personal data for profiles, and will not infringe on the intellectual property rights of mentors. The platform's Chat-bot will ensure secure communication between mentors and mentees, and will connect mentees with trusted and legal mentors.

In order to protect mentees from fraud, they can view mentors' references and licenses or certifications for verification. The subscription or **payment method** will be legal and secure. The project is open to feedback and will make ethical improvements based on user and stakeholder input. A clear **code of conduct** and ethics will be established, with unethical or illegal behavior resulting in immediate removal from the platform.

3. Project Scope

The **scope of Mentor-Hub** is to create a **global online mentoring platform** that targets startup founders. It aims to empower them throughout their entrepreneurial journey by connecting them with experienced mentors.

The **platform offers** essential services and resources within its scope to foster meaningful mentor-founder relationships, promote knowledge sharing, and facilitate collaboration. Its objective is to help entrepreneurs achieve their goals, ensuring accessibility to users worldwide, **regardless of their location or educational background.**

4. Project Costing

4.1) Project Cost Estimation by Function Point Analysis:

Step 1: Find Functional Types:

1. External Inputs (EIs):
   - Registration form inputs
   - Login form inputs

- Profile creation/update inputs
- Search filters (e.g., location, skills)
- Request for mentorship opportunity
- Add Advice in Mentor Column
- Share Mentor Resources **Total EOs: 7**

2. External Outputs (EOs):
- User profiles with details
- Mentorship opportunity listings in which mentors can apply
- Matched mentor-mentee pairs
- Notifications and message
- Display Mentor Columns(Regarding Advices)
- Display Mentor Resources **Total EOs: 6**

3. External Inquiries (EQs):
- User inquiries to find mentors/mentees
- Requests for information or help
- Contact support inquiries **Total EQs: 3**

4. External Interface Files (EIFs):
- User database
- Mentorship opportunity database
- Message history storage Between Mentor and User **Total EIFs: 3**

5. External Interface References (EIRs):
- Integration with payment gateway
- Integration with Email services for Registration/Login to Website
  Total EIRs: 2

Parameter	Count	Weighing factor			FC
		Simple	Average	Complex	
Number of EI	7	3	4	6	28
Number of EO	6	4	5	7	30
Number of EQ	3	3	4	6	12
Number of ILF	4	7	10	15	40
Number of EIF	2	5	7	10	14

Calculation:

Function count = FC = (7*4) + (6*5) + (3*4) + (4*10) + (2*7)

Function count = FC = 28 + 30 + 12 + 40 + 14 Function count = FC = 124

Step 3: Rate the 14 general system characteristics (0-5):

No#	System Characteristics	Description	Rating
1.	Distributed data processing	The system may involve distributed data processing when handling multiple mentorship interactions, but it is not overly complex	3
2.	Performance	The system needs to ensure high performance as it must handle a high volume of mentorship interactions, including realtime messaging and resource sharing.	4
3.	Heavily used configuration	The system may have some configuration changes related to user and mentor profiles, but they are not highly complex.	2
4.	Transaction Rate	The system may need to process a large number of mentorship interactions concurrently, especially during peak usage times	5
5.	Online data entry	Users and mentors may need to enter or update their profile information, goals, skills, and expertise, which is a standard part of the platform's operation.	3
6.	End-user efficiency	The system should provide a user-friendly interface to maximize end-user efficiency when searching for mentors, sending messages, and accessing resources.	5
7.	Online update	Information stored in the system, such as user and mentor profiles, may be updated online when new users register, new mentorship interactions occur, or when users access and utilize resources.	3
8.	Complex processing	While the core mentorship interactions may not involve complex processing, there may be some calculations involved in matchmaking and resource management.	1
9.	Reusability	Reusability may be limited to certain components like login authentication and payment processing	2

10.	Installation ease	The system may require initial configuration and integration with external services, such as payment gateways, to facilitate payment for mentorship services.	4
11.	Operational ease	The system should include features like automated mentorship management, communication handling, and error management to ensure smooth operations.	4
12.	Multiple sites	The system is designed for a single mentorship platform and does not involve multiple sites or locations	1
13.	Facilitate change	The system should be flexible to accommodate future changes, such as updates to mentorship programs, matchmaking algorithms, and additional features.	4

Step 4: Calculate value adjustment factor (VAF):

VAF = 0.65 +0.01x

$$\sum_{i=1}^{14} c_i = 3 + 4 + 2 + 5 + 3 + 5 + 3 + 1 + 2 + 4 + 4 + 1 + 4 = 41$$

VAF = 0.65 + 0.01(41) = 1.06

Step 5: Calculate function point (FP):
Function Point = FP Count * VAFFP Count
FC = 124
VAF = 1.06
FP = 124* 1.06 = 131.4
Function Point is = 131.4

Calculation in Months:

FP estimated = Count Total * VAF = 131.4
Labor Rate   = Rs 10,000/Month
Average Productivity   = 10 FP/Month

Cost per Function Point =Labor Rate/Productivity Parameter = 10,000/10 = 1,000 Rs/FP
Total Project Cost = FP estimated * Cost per FP = 131*1,000   = Rs 1,31,000
Total Estimated Effort = Estimated FP/Productivity = 131/10   = 13 PM

4.2) Project Cost Estimation by using COCOMO'81:

COCOMO stands for Constructive Cost Model, and it is a widely used software cost estimation model.

We decided to use the COCOMO '81 model to figure out how much our Mentorship Platform website will cost and how much effort it will take to build it. We picked the "**Semidetached**" development type because our website has a big codebase with 13,000 lines of code (KLOC). This choice helps us estimate how much work and money it will take to make the website. It will help us make good decisions, use our resources wisely, and make sure we finish the website on time and within our budget.

Basic COCOMO (Semidetached)
Effort :

$PM = 3.0 (KLOC)^{1.12}$ (KLOC represents thousands of lines of code.)

$PM = 3.0(13)^{1.12}$

$PM \approx 55.34$ (PM is measured in person-months.)

Schedule:

The schedule is determined using the Basic COCOMO schedule equations. $TD = 2.5(PM)^{0.35}$

$= 2.5(55.34)^{0.35}$

$TD \approx 10.18$ months   (TD is the time required for project completion.)

People Required = Effort / Duration

People Required = 55.34/10.18

People Required = 5

- This means that we would need approximately **5 people** working on the project to complete it in about 10.18 months considering 7 days per week.
- The number of days in 10 months can vary between 280 and 304 days.
- For **Business days** (5 days per week)
  When considering only 5 days per week (5-day workweek), it would take about **7.15 months**, which is approximately **217.14 days.**

5. CPM - Critical Path Method:

Seq. ID	Activity Description	Predecessors	Duration
1.	**Selection Of FYP Idea**	**-**	**1**
2.	Defining Features List	1	2
3.	Team Collaboration Meeting	2	1
4.	Instructor Consultation	2	1
5.	Defining Project Goals And Objectives	2	1
6.	Identifying And Finalizing High-Level System Components	5	2
7.	Determining Optional Functional Units	2,6	1
8.	Defining Project Overview Statement	6	2
9.	Specifying Hardware And Software Requirements	3	1

10.	Gantt Chart Development	8	1
11.	**Proposal Review**	**1-10**	**1**
12.	**Proposal Submission**	**11**	**1**
13.	**Proposal Acceptance**	**12**	**1**
14.	Gathering And Analyzing Requirements	8	3
15.	Conducting Feasibility Analysis	8	1
16.	Defining Project Scope	8	1
17.	Estimating Project Costs	14	1
18.	Performing CPM Analysis	14	3
19.	Gantt Chart Refinement	10	1
20.	Defining Vision And Risks	14,16	1
21.	Requirements Specification And Validation	14	3
22.	Context Level Data Flow Diagram	21	1
23.	Requirements Trace-ability Matrix	21	2
24.	Creating High Level Use-Case Diagram	21	2
25.	**Deliverable-1 Review**	**14 - 24**	**1**
26.	**Deliverable-1 Submission And Evaluation**	**25**	**1**
27.	Use-Case Description	24	3
28.	Refining Use-Case Diagram	24	2
29.	Design Sequence and Collaboration Diagram	21	6
30.	Operation Contracts Specification	21	2
31.	Design Class Diagram	21	3
32.	Domain and Data Model Construction	21	4
33.	**Deliverable-2 Review**	**27 -32**	**1**
34.	**Deliverable-2 Submission And Evaluation**	**33**	**1**
35.	UI/UX Research for Prototypes	21	2
36.	User Flow in Prototypes	28	2
37.	Low-Fidelity Prototyping Development	36	3
38.	User interface Design	37	4
39.	**Prototypes Review**	**38**	**1**
40.	Refining Prototypes	39	2
41.	**Prototypes Submission and Evaluation**	**40**	**1**
42.	Developing Database Schema	8	5
43.	Development and Coding	42	123
44.	Components Testing and System Refine	43	8
45.	Integration and Testing	44	10
46.	Deployment	45	5
47.	**Final Review**	**46**	**2**
48.	Final Refining	47	12
49.	**Final Evaluation and Submission**	**48**	**1**

In this project we will prioritize legal compliance and ethical responsibility from its inception and throughout its operation.

CPM Diagram:
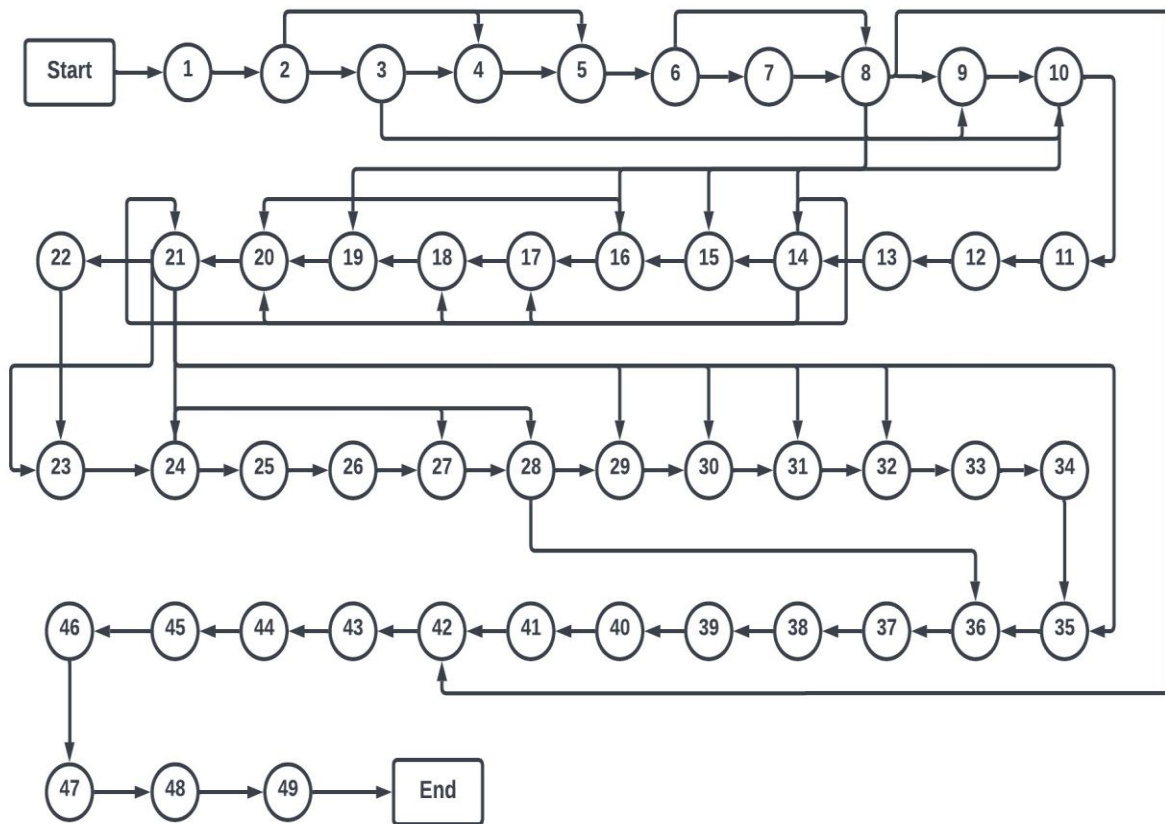
CPM Table

Formulas:

    1. Early start (ES)   =   ES + Duration   (for 1st Activity ES=0)

    2. Early Finish(EF) =   ES + Duration

    3. Late Start(LS)   =   LF - Duration

    4. Late Finish(LF)   =   LS + Duration

    5. Total Slack(TS)   =   LS - ES

    6. Free Slack(FS)   =   ES - EF

If we assumed that our project complete without any delay then the value of TS in table will be 0 and our critical path will cover all activities and our critical time will be same as our project Timeline.

The critical path (without delay):

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→29→30→31→32→33→34→35→36→37→38→39→40
→
41→42→43→44→45→46→47→48→49

The critical time (without delay):

1+2+1+1+1+2+1+2+1+1+1+1+1+3+1+1+1+3+1+1+3+1+2+2+1+1+3+2+6+2+3+4+
1+1+2+2+3+4+1+2+1+5+123+8+10+5+2+12+1 = **240 days**

But due to some unexpected scenarios there can be delay in some activities therefore our Total Slack (TS) will be more than 0(positive value) and less than 0(negative value). Total Slack = Late Start – Early Start.

- For positive value (>0) It
  means our project start late.
  It means the project is delayed compared to the baseline schedule
- For negative value (<0)
  It means our project start early than estimated Starting Time. It
  means the project is ahead of schedule

CPM Calculation Table (with delay)

Activity ID	Duration	ES	EF	LS	LF	TS	FS
1.	1	0	1	0	1	**0**	0
2.	2	1	3	1	3	**0**	0
3.	1	3	4	3	4	**0**	0
4.	1	4	5	4	5	**0**	0
5.	1	5	6	5	6	**0**	0
6.	2	6	8	6	8	**0**	0
7.	1	8	9	8	9	**0**	0
8.	2	9	11	9	11	**0**	0
9.	1	11	12	11	12	**0**	0
10.	1	12	13	12	13	**0**	0
11.	1	13	14	13	14	**0**	0
12.	1	14	15	14	15	**0**	0
13.	1	15	16	15	16	**0**	0
14.	3	16	19	16	19	**0**	0
15.	1	19	20	19	20	**0**	0
16.	1	20	21	20	21	**0**	0
17.	1	21	22	21	22	**0**	0
18.	3	22	25	22	25	**0**	0
19.	1	25	26	25	26	**0**	0
20.	1	26	27	26	27	**0**	0

21.	3	27	30	27	30	**0**	0
22.	1	30	31	30	31	**0**	0
23.	2	31	33	31	33	**0**	0
24.	2	33	35	33	35	**0**	0
25.	1	35	36	35	36	**0**	0
26.	1	36	37	36	37	**0**	0
27.	3	37	40	37	40	**0**	0
28.	2	40	42	40	42	**0**	0
29.	6	42	48	42	48	**0**	0
30.	2	48	50	48	50	**0**	0
31.	3	50	53	50	53	**0**	0
32.	4	53	57	53	57	**0**	0
33.	1	57	58	57	58	**0**	0
34.	1	58	59	58	59	**0**	0
35.	2	59	61	59	61	**0**	0
36.	2	61	63	61	63	**0**	0
37.	3	63	66	63	66	**0**	0
38.	4	66	70	66	70	**0**	0
39.	1	70	71	70	71	**0**	0
40.	2	71	73	71	73	**0**	0
41.	1	73	74	73	74	**0**	0
42.	5	74	79	74	79	**0**	0
43.	123	79	202	80	203	**1**	0
44.	8	202	210	203	211	**1**	0
45.	10	210	220	211	221	**1**	0
46.	5	220	225	221	226	**1**	0
47.	2	225	227	226	228	**1**	0
48.	12	227	239	228	240	**1**	0
49.	1	239	240	240	241	**1**	0

According to our Table, CPM Calculation Table (with delay)

The critical path (with delay):

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→29→30→31→32→33→34→35→36→37→38→39→40 → 41→42

The critical time (with delay):

1+2+1+1+1+2+1+2+1+1+1+1+1+3+1+1+1+3+1+1+3+1+2+2+1+1+3+2+6+2+3+4+ 1+1+2+2+3+4+1+2+1+5 = **79 days**
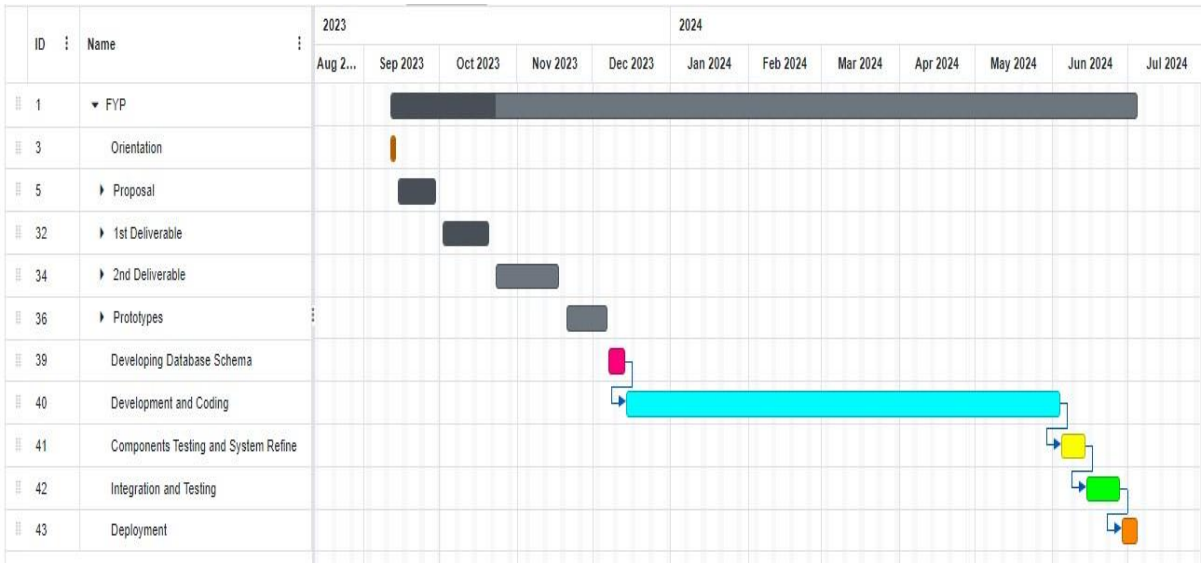
The 79 days are the total days of those activities which are completed on estimated time The numbers of activities which are delayed according to our assumption are 7 activities (43 to 49).
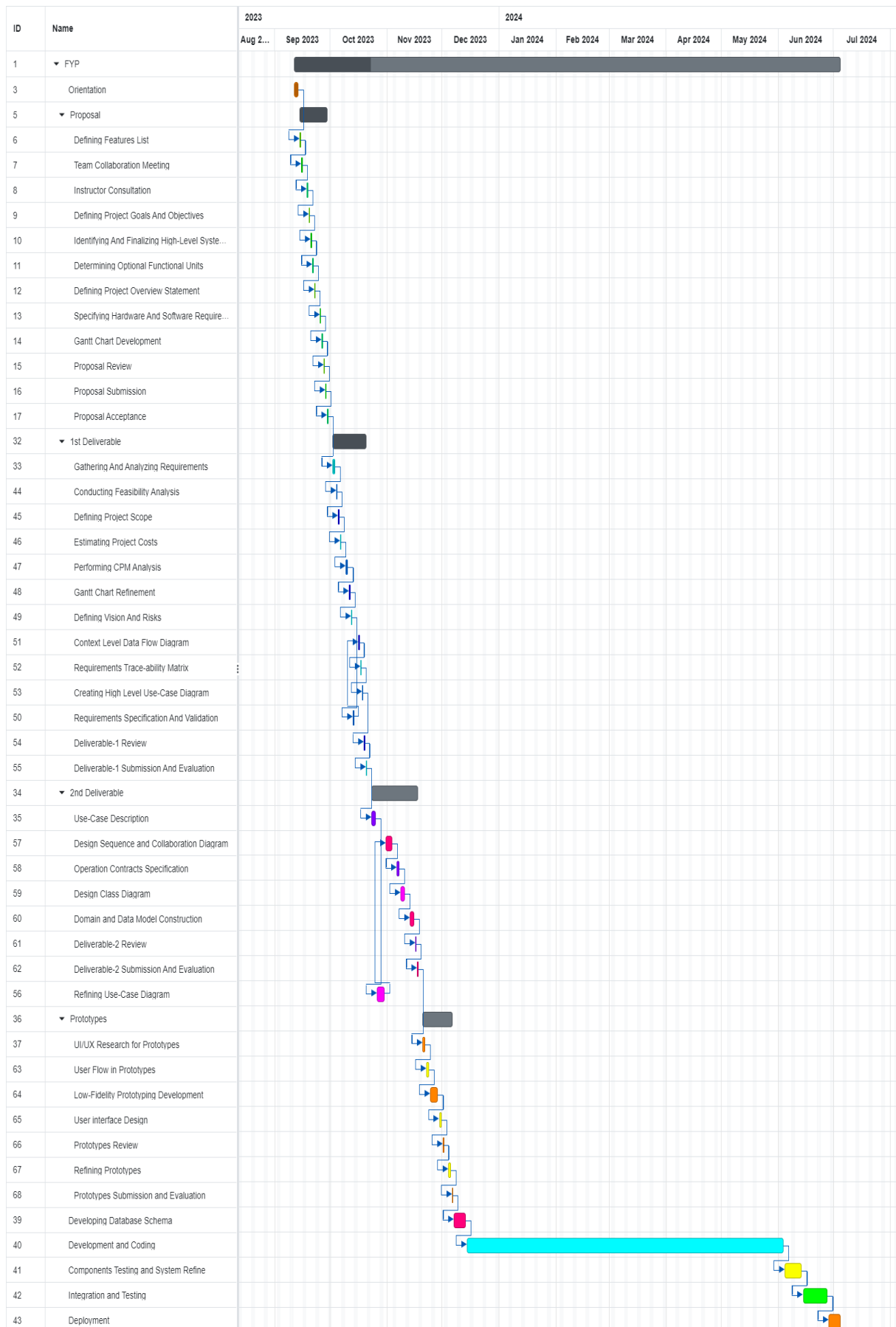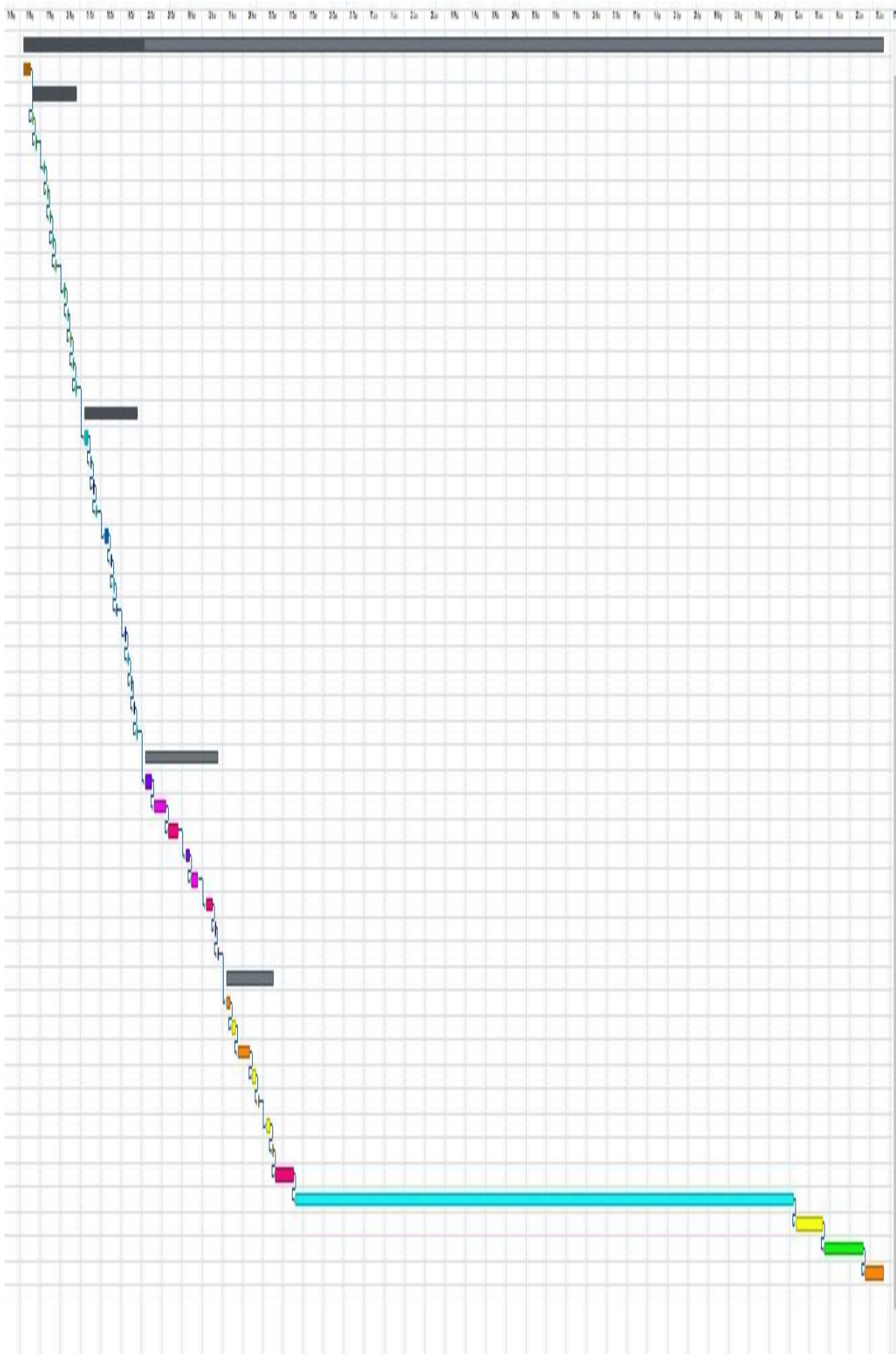
6. Gantt chart:

Our project timeline is detailed in the Gantt chart provided, outlining key milestones and their respective timeframes.

Sr#	Task	Start Time	End Time	Duration 5 day per week
1.	Orientation	Sep 11, 2023	Sep 13, 2023	3
2.	Defining Features List	Sep 14, 2023	Sep 14, 2023	2
3.	Team Collaboration Meeting	Sep 15, 2023	Sep 15, 2023	1
4.	Instructor Consultation	Sep 18, 2023	Sep 18, 2023	1
5.	Defining Project Goals And Objectives	Sep 19, 2023	Sep 19, 2023	1
6.	Identifying And Finalizing HighLevel System Components	Sep 20, 2023	Sep 20, 2023	1
7.	Determining Optional Functional Units	Sep 21, 2023	Sep 21, 2023	1
8.	Defining Project Overview Statement	Sep 22, 2023	Sep 22, 2023	1
9.	Specifying Hardware And Software Requirements	Sep 25, 2023	Sep 25, 2023	1
10.	Gantt Chart Development	Sep 26, 2023	Sep 26, 2023	1
11.	Proposal Review	Sep 27, 2023	Sep 27, 2023	1
12.	Proposal Submission	Sep 28, 2023	Sep 28, 2023	1
13.	Proposal Acceptance	Sep 29, 2023	Sep 29, 2023	1
14.	Gathering And Analyzing Requirements	Oct 02, 2023	Oct 03, 2023	1
15.	Conducting Feasibility Analysis	Oct 04, 2023	Oct 04, 2023	1
16.	Defining Project Scope	Oct 05, 2023	Oct 05, 2023	1
17.	Estimating Project Costs	Oct 06, 2023	Oct 06, 2023	1
18.	Performing CPM Analysis	Oct 09, 2023	Oct 09, 2023	2
19.	Gantt Chart Refinement	Oct 11, 2023	Oct 11, 2023	1
20.	Defining Vision And Risks	Oct 12, 2023	Oct 12, 2023	1
21.	Requirements Specification And Validation	Oct 13, 2023	Oct 13, 2023	1
22.	Context Level Data Flow Diagram	Oct 16, 2023	Oct 16, 2023	1
23.	Requirements Trace-ability Matrix	Oct 17, 2023	Oct 17, 2023	1

24.	Creating High Level Use-Case Diagram	Oct 18, 2023	Oct 18, 2023	1
25.	Deliverable-1 Review	Oct 19, 2023	Oct 19, 2023	1
26.	Deliverable-1 Submission And Evaluation	Oct 20, 2023	Oct 20, 2023	1
27.	Use-Case Description	Oct 23, 2023	Oct 25, 2023	3
28.	Refining Use-Case Diagram	Oct 26, 2023	Oct 30, 2023	3
29.	Design Sequence and Collaboration Diagram	Oct 31, 2023	Nov 03, 2023	4
30.	Operation Contracts Specification	Nov 06, 2023	Nov 07, 2023	2
31.	Design Class Diagram	Nov 08, 2023	Nov 10, 2023	3
32.	Domain and Data Model Construction	Nov 13, 2023	Nov 15, 2023	3
33.	Deliverable-2 Review	Nov 16, 2023	Nov 16, 2023	1
34.	Deliverable-2 Submission And Evaluation	Nov 17, 2023	Nov 17, 2023	1
35.	UI/UX Research for Prototypes	Nov 20, 2023	Nov 21, 2023	2
36.	User Flow in Prototypes	Nov 22, 2023	Nov 23, 2023	2
37.	Low-Fidelity Prototyping Development	Nov 24, 2023	Nov 28, 2023	3
38.	User interface Design	Nov 29, 2023	Nov 30, 2023	2
39.	Prototypes Review	Dec 01, 2023	Dec 01, 2023	1
40.	Refining Prototypes	Dec 04, 2023	Dec 05, 2023	2
41.	Prototypes Submission and Evaluation	Dec 06, 2023	Dec 06, 2023	1
42.	Developing Database Schema	Dec 07, 2023	Dec 13, 2023	5
43.	Development and Coding	Dec 14, 2023	Jun 03, 2024	123
44.	Components Testing and System Refine	Jun 04, 2024	Jun 13, 2024	8
45.	Integration and Testing	Jun 14, 2024	Jun 27, 2024	10
46.	Deployment	Jun 28, 2024	Jul 04, 2024	5

ID	Name
1	▼ FYP
3	Orientation
5	▼ Proposal
6	Defining Features List
7	Team Collaboration Meeting
8	Instructor Consultation
9	Defining Project Goals And Objectives
10	Identifying And Finalizing High-Level Syste…
11	Determining Optional Functional Units
12	Defining Project Overview Statement
13	Specifying Hardware And Software Require…
14	Gantt Chart Development
15	Proposal Review
16	Proposal Submission
17	Proposal Acceptance
32	▼ 1st Deliverable
33	Gathering And Analyzing Requirements
44	Conducting Feasibility Analysis
45	Defining Project Scope
46	Estimating Project Costs
47	Performing CPM Analysis
48	Gantt Chart Refinement
49	Defining Vision And Risks
51	Context Level Data Flow Diagram
52	Requirements Trace-ability Matrix
53	Creating High Level Use-Case Diagram
50	Requirements Specification And Validation
54	Deliverable-1 Review
55	Deliverable-1 Submission And Evaluation
34	▼ 2nd Deliverable
35	Use-Case Description
57	Design Sequence and Collaboration Diagram
58	Operation Contracts Specification
59	Design Class Diagram
60	Domain and Data Model Construction
61	Deliverable-2 Review
62	Deliverable-2 Submission And Evaluation
56	Refining Use-Case Diagram
36	▼ Prototypes
37	UI/UX Research for Prototypes
63	User Flow in Prototypes
64	Low-Fidelity Prototyping Development
65	User interface Design
66	Prototypes Review
67	Refining Prototypes
68	Prototypes Submission and Evaluation
39	Developing Database Schema
40	Development and Coding
41	Components Testing and System Refine
42	Integration and Testing
43	Deployment

7. Tools and Technology with reasoning:

Tools	Reasons
PyCharm	Use as IDE for backend (Django) development.
Postman	Use for API testing.
VS Code	Use as IDE for front end development with React.
GIT and GitHub	Use for collaboration of team.
MS Word	Use for documentation.
Figma/Adobe XD	Use for Screen's design/Prototyping.
Lucid chart/Edraw	Use for Pictorial representation of Mentorship Platform.

Technology	Reasons
MySQL	Use for database management
Django	Use for backend development
ReactJS	Use for frontend development
RESTful API	Use to enable communication and data exchange between a client (such as a web browser) and a server.

8. Vision Document:

Our vision is to create a dynamic software solution connecting mentors and business startups, serving as the initial blueprint for our project. We aim to foster clarity and consensus among mentors and startup founders, outlining potential alternatives, risks, and financial aspects for stakeholder approval during detailed planning. **Our project vision remains flexible** to adapt to evolving requirements, architecture, and technology. To actualize the vision, we use evolving use cases and primary scenarios as the foundation for a comprehensive test case suite. This vision guides our project journey.

Additionally, our vision underscores the importance of identifying and **addressing the root issues behind the challenges mentors and business startups encounter**. It emphasizes a shared understanding of the system's scope, involving all relevant stakeholders. By continuously exploring and validating constraints and features, our vision ensures that the software will effectively meet the identified needs and constraints. This vision is a driving force for a **successful partnership between mentors and startups**.

9. Risk List:

- Poor/Failure of **Internet** Connection.
- Mentor **shortage**
- There can be **risk in resources** of mentors, if the resources are not up-to-date and valuable to users.
- There can be risk if the mentor is **not available to the user after payment** and the user can't access the resources of the mentor.
- Users may **not provide enough feedback** for the mentor and this may cause the mentor's profile to be down-ranked.
- **System failure** due to technical problems or malfunctions
- **Incompatibility** of tools and environment (Website is not compatible with all browsers and browser versions)

11-System Introduction:

11.1) Systems Specifications:

11.1.1) Introduction:

In the world of startup businesses, Mentor-Hub is like a **guiding star** for new entrepreneurs and experienced mentors. It's a direct response to the urgent need for a **strong connection** between mentors and startups. We understand the challenges of starting a business, and our mission is to support the **startup community**.

At Mentor-Hub, we have a **clear plan** that brings everyone involved together. It helps us set goals, evaluate risks, and plan our finances. As we move forward on this journey, MentorHub's vision keeps growing, all fueled by our unwavering commitment to benefit both mentors and startups.

11.1.2) Existing System:

Existing systems for mentorship are following:
- Growth mentor
- Mentor pass
- Sparrow mentor **1- Growth mentor:**

Growth Mentor is a platform that connects startup founders with experienced mentors who have a proven track of success in the startup world. In this website, mentees search for a mentor and connect with him through call and pay him per minute and hour rate. **The mentee pays twice in Growth Mentor**, first for the website and then for the call with the mentor. The website has mentor blogs available on some hot industry topics and video lectures are also available.

2- Mentor pass:

Mentor Pass is a platform that connects startup founders with mentors who can help them scale their business. Basically, **this platform provides 1:1 calls with the mentors**. Users discover mentors on the basis of their skills and pay twice just like a growth mentor.

3- Sparrow Mentor:

Sparrow Mentor is a platform for **naive actors, producers and directors in the industry**. The platform provides expert directors, writers, producers, actors and lighting designers for mentees. The platform provides 6 months of training to mentees. Mentees select the program for training and pay according to the mentor.

> ➢ Unlike these websites, **In our website** start-up founders pay once and connect with the mentor through **chat-bot**. Mentors can **share their helping resources** with mentees. We connect mentors with mentees by using matchmaking algorithms and suggest top rated mentors to mentees. We also provide a **Mentor Column feature** where users can read the advice and insights of multiple mentors on various start-up topics. We also gather user feedback on the quality of mentorship and platform performance and on the basis of feedback we **improve the profile of mentors**.

11.1.3) Organizational Chart:

Organizational charts typically depict an organization's structure, including its departments, hierarchy, and reporting relationships.
For our Mentor-Hub project that is proposal at Punjab University, the traditional **organizational chart might not be directly applicable.**

11.1.4) Scope of the System:

The scope of Mentor-Hub is to establish a worldwide **online mentoring platform**, empowering startup founders. It is committed to ensuring accessibility for users globally, **regardless of their location or educational background**.
This encompasses **offering essential services and resources** dedicated to promoting knowledge sharing and facilitating collaboration among users

11.1.5) Summary of Requirements (Initial Requirements):

1. User Registration
2. User Login
3. User profile management
4. Search or discover mentors
5. Dashboard for mentors and mentees
6. Dashboard for Admin
7. Payment and billing
8. Communication between mentor and mentee
9. Resource sharing by mentor
10. Mentor column
11. Feedback and Rating
12. Remove mentor on bad rating
13. Notification system
14. FAQ
15. Logout

Summary

1. User Registration

User registration is mandatory for accessing the platform. Users will need to provide a username, email, password, and additional detail according to their role.
1.1: Mentee sign-up: skills, goals and educational background.
1.2: Mentor sign-up: skills, educational background, work history and mentoring experience

2. User Login

Only after successfully logging in, the user will be rendered to the home page of the website.
2.1: Registered Users: can log in with their username and password. For new users, there should be an option for registration.
2.2: Admin Login: Admin login in his account to manage systems feature.

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3. User Profile Management

3.1.Mentee profile management:

Mentees can create and manage profile by mentioning their field of study, skills, goals and business plan information.

3.1.1: Change password: mentee can change password for security reasons.

3.1.2: Edit Profile details: mentee can change and update his/her skills for improvement. After achieving certain goals, mentee can change/Update his/her goals.

3.2.Mentor profile management:

Mentors can create profile by mentioning their field of study, skills, goals and business plan strategies. Mentor can also mention his/her previous projects. **3.2.1: Change password**: mentor can change password for security reasons.

3.2.2: Edit profile details: Permits mentors to edit his/her skills for improvement and other details like services payment amount, available time, business experience, and future goals in their profiles.

3.2.3: Add Start-up/projects details: mentor can add more projects/start-up detail in his/her profile after completing projects.

4. Search or discover mentors

The platform will offer a search function allowing start-up founders to find mentors based on various criteria such as names, subjects, skills, and tools

4.1) Recommendation: Mentors with high ratings and relevance to the mentee's field, skills, and needs will be recommended to the mentees.

5. Dashboard for Mentors and Mentees

Personalized dashboards will be provided to both users and mentors. The dashboard will enable users to track interactions, access resources, and receive notifications about new opportunities.

6. Dashboard for Admin

The dashboard will enable Admin to track interactions, view details of every Mentor, view list of Mentors

7. Payment and Billing:

After selecting a mentor, mentees should have a seamless payment process.
Payment processing may involve a third-party processor or an in-house system.

8. Communication between Mentor and Mentee

A chatbot or messaging system should facilitate communication between mentors and mentees for advice and guidance.

9. Resource sharing

Mentor can share his/her useful resources for mentee. This requirement manages the storage and delivery of mentorship resources, such as documents, and notes. It allows users to access and utilize these resources for learning and guidance.

10. Mentor column

In mentor column section mentees can read the advice and insights of multiple mentors on various start-up topics.
10.1: Explore Mentor Column: Allow mentees to access and read the advice and insights.
10.2: Add Advices: Mentor can share advice, rules and plan for start-up business.

11. Feedback and Ratings

User can give feedback about certain mentor and those feedbacks enhance the quality of mentorship and platform performance. We utilize feedback to continuously improve the platform. Positive feedback can ranked-up the profile of mentor. Ratings and reviews will be critical for informed decision-making by new founders.

12. Mentor Removal on Bad Rating

In the case of persistent bad ratings, a system for warning mentors should be implemented. After three warnings, a mentor will be removed to maintain quality.

13. Notification system

The system is responsible for delivering notifications to users. Mentor review and accept mentee requests. This is to ensure that users stay informed about relevant updates and opportunities within the platform.
13.1: Receive Notification: Users will receive notifications about new opportunities and when mentors share resources.

14. FAQ

There will be a section of Frequently Asked Questions available in website.

14.1: User Queries: From this section user can get help about the privacy policy, mentors details, payment methods and many other common queries according to their role.

15. Logout

The web application shall provide logout functionality for users, including Mentors and Mentees.

15.1: Allow Logout: Users (Admin/Mentor/Mentee) who are logged in the web application will be able to log out from the website when they're done.

15.2: Terminate User's Session: Upon logging out, the system will terminate the user's session and return them to the login or home page as appropriate.

11.2) Identifying External Entities

Over Specify Entities from Abstract: The external entities (actors) interacting with our system is identified as follows:

1. **Mentors:** Experienced individuals who provide guidance, advice and support to startup founders and other users.
2. **Start-up Founders:** Aspiring entrepreneurs and start-up founders seeking guidance and mentorship to navigate the challenges of launching and growing their businesses.
3. **System Admin:** The system administrator is responsible for configuring and maintaining the platform, ensuring it runs smoothly and managing user accounts and permissions. Perform Refinement
1. Mentors
2. Mentee
3. Admin

11.3) Context Level Data Flow Diagram
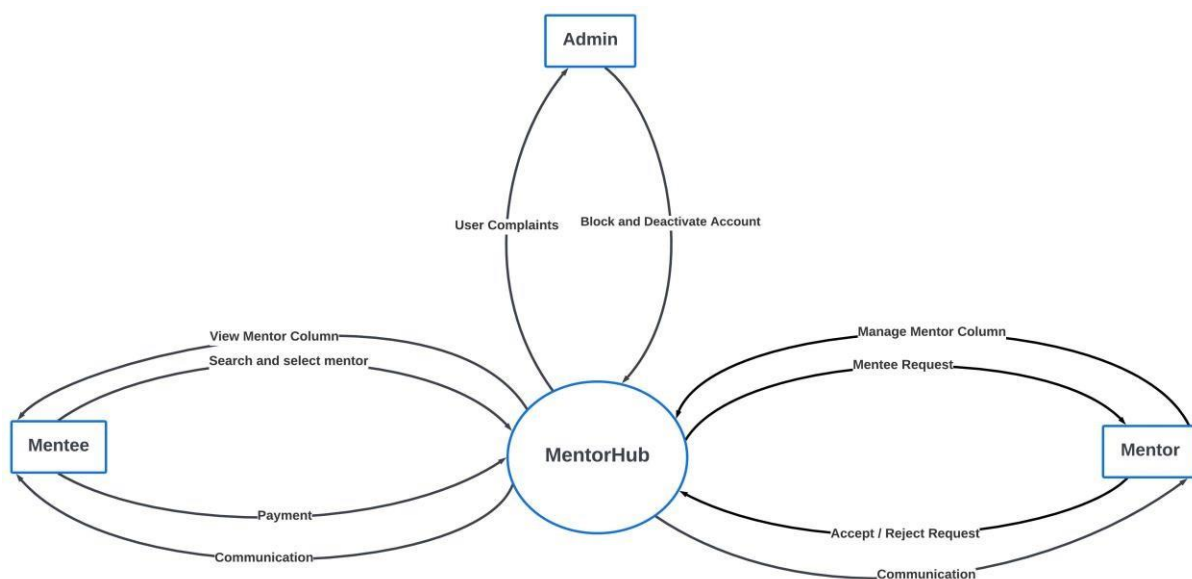
11.4) Capture "shall" Statements

Para#	External Entity	Initial Requirements
1	System	The System "shall" **only allow the registered user** to access website platform.
1.1	Mentee	Mentees "shall" **Register** to access the platform, by providing a username, email, password, and additional details such as information about their skills, goals, and educational background.
1.2	Mentor	Mentors "shall" **Register** to access the platform, by providing a username, email, password, and additional details such as information about their skills, educational background, work history, and mentoring experience.
2	System	The System "shall" **allow the user** to rendered the home page of the website after successful login
2.1	Mentee/Mentor	Registered user "shall" be able to **Log in** with their username/email and password
2.2	Admin	Admin **"shall"** login to his account.
3	System	System "shall" process different **types of updating** e.g. updating of his personal details, profile details, or upgrading of his status from registration, or updating of his payment details.
3.1	System	System "shall" **accept** the **Mentee Request** of change Password and profile details.
3.1.1	Mentee	A Mentee "shall" login to the system and can **change his/her password** for security reasons
3.1.2	Mentee	Mentees "shall" **create, update and manage profiles**, including their field of study, skills, goals, and business plan information
3.2	System	System "shall" **accept** the **Mentor Request** of change Password and profile details.
3.2.1	Mentor	A Mentor "shall" login to the system and can **change his/her password** for security reasons
3.2.2	Mentor	Mentors "shall" **create, update and manage profiles**, specifying their field of study, skills, goals, business plan strategies, and previous projects.
3.2.3	Mentor	Mentors "shall" have the ability to **add more project/start-up** details in their profiles after completing projects.
4	Mentee	The platform "shall" offer a **search** function for start-up founders to find **mentors** based on various criteria like names, subjects, skills, and tools.

4.1	System	The system "shall" **recommend mentors** to mentees based on high ratings and relevance to the mentee's field, skills, and needs.
5	Mentor/Mentee	The **dashboard** "shall" enable users to track interactions, access resources, and receive notifications about new opportunities.
6	Mentor	After selecting a mentor, mentees "shall" experience a seamless **payment** process.
6	Admin	Admin Dashboard "Shall" allow him to track interactions, view details of every Mentor, view list of Mentors
7	System	System "shall" generate invoice, confirmation receipt and finally will **accept payment**
8	Mentor/Mentee	A **chatbot** or messaging system "shall" facilitate communication between mentors and mentees for advice and guidance.
9	Mentor	Mentors "shall" be able to **share useful resources** with mentees.
10.1	Mentee	Mentees "shall" be able to **read the advice and insights** of multiple mentors on various start-up topics in Mentor Column **without any charge**.
10.2	Mentor	Mentors "shall" be able to **write and share** advice, rules, and plans for startup businesses in **Mentor Column.**
11	Mentee	Mentee "shall" have the capability to **provide feedback** about certain mentors. **Positive feedback** "shall" result in an improved mentor profile.
11	System	The system "shall" utilize feedback to continuously **improve the platform**.
12	Admin	In the case of **persistent bad ratings**, the Admin "shall" implement a system to warn mentors. After few warnings, a mentor "shall" be **removed** to maintain quality.
13	System	The system "shall" be responsible **for delivering notifications** to users.
13.1	Mentor/Mentee	Users, both Mentors and Mentees, "shall" **receive notifications** regarding new opportunities and when mentors share resources.
13	Mentor	Mentors **"shall"** review and accept mentee requests.
14	System	The System "shall" provide section of **Frequently Asked Questions** available on the website.
14.1	Mentor/Mentee	Users (Mentor/Mentee) "shall" have **access to information** about privacy policy, mentors' details, payment methods, and other common queries.
15	System	System "shall" provide **Logout functionality**.

15.1	Mentor/Mentee/Admin	Users who are logged in the web application "shall" be **able to Log out** from the website when they're done.
15.2	System	Upon logging out, the system "shall" **terminate the user's session** and return them to the login or home page as appropriate.

11.5) Allocate Requirements

Sr #	Para#	Initial Requirements	Use-Case Name
1	1	The System "shall" **only allow the registered user** to access website platform.	UC_Registration
2	2	The System "shall" **allow the user** to rendered the home page of the website after successful login	UC_Login
3	3	System "shall" process different **types of updating** e.g. updating of his personal details, profile details, or upgrading of his status from registration, or updating of his payment details.	UC_User_Request
4	3.1.2	User "shall" **create, update and manage profiles**, including their field of study, skills, goals, and business plan information	UC_User_Profile
5	4	The platform "shall" offer a **search** function for start-up founders to find **mentors** based on various criteria like names, subjects, skills, and tools.	UC_Discover_Mentor
6	4.1	The system "shall" **recommend mentors** to mentees based on high ratings and relevance to the mentee's field, skills, and needs.	UC_Recommend_Mentor
7	7	A **chatbot** or messaging system "shall" facilitate communication between mentors and mentees for advice and guidance.	UC_ChatBot_Communication
8	9	Mentors "shall" be able to **share useful resources** with mentees.	UC_Share_Resources
9	7	Mentee "shall" initiate payment	UC _Payment
10	7	System "shall" generate invoice, confirmation receipt and finally will **accept payment**	UC_Accept_Payment

11	10.1	Mentees "shall" be able to **read the advice and insights** of multiple mentors on various start-up topics in Mentor Column **without any charge**.	UC_View_MentorColumn
12	10.2	Mentors "shall" be able to **write and share** advice, rules, and plans for startup businesses in **Mentor Column.**	UC_Manage_MentorColumn
13	11	Mentee "shall" have the capability to **provide feedback** about certain mentors. **Positive feedback** "shall" result in an improved mentor profile.	UC_Give_feedback
14	12	In the case of **persistent bad ratings**, the Admin "shall" implement a system to warn mentors. After few warnings, a mentor/mentee "shall" be **removed** to maintain quality.	UC_Account_Deactivation
15	13	Users, both Mentors and Mentees, "shall" **receive notifications** regarding new opportunities and when mentors share resources.	UC_Notification
16	14	The System "shall" provide section of **Frequently Asked Questions** available on the website.	UC_FAQ
17	15	Users who are logged in the web application "shall" be **able to Log out** from the website when they're done.	UC_Logout

11.6) Prioritize Requirements

Sr #	Para #	Initial Requirements	Use-Case Name	UC-ID	Rank
1	1	The System "shall" **only allow the registered user** to access website platform.	UC_Registration	**UC_1**	High
2	2	The System "shall" **allow the user** to rendered the home page of the website after successful login	UC_Login	UC_2	High

3	3	System "shall" process different **types of updating** e.g. updating of his personal details, profile details, or upgrading of his status from registration, or updating of his payment details.	UC_User_Request	UC_3	Medium
4	3.1.2	User "shall" **create, update and manage profiles**, including their field of study, skills, goals, and business plan information	UC_User_Profile	UC_4	Medium
5	4	The platform "shall" offer a **search** function for start-up founders to find **mentors** based on various criteria like names, subjects, skills, and tools.	UC_Discover_Mentor	UC_5	High
6	4.1	The system "shall" **recommend mentors** to mentees based on high ratings and relevance to the mentee's field, skills, and needs.	UC_Recommend_Mentor	UC_6	High
7	7	A **chatbot** or messaging system "shall" facilitate	UC_ChatBot_Communication	UC_7	Medium
		communication between mentors and mentees for advice and guidance.			
8	9	Mentors "shall" be able to **share useful resources** with mentees.	UC_Share_Resources	UC_8	High
9	7	Mentee "shall" initiate payment	UC _Payment	UC_9	High
10	7	System "shall" generate invoice, confirmation receipt and finally will **accept payment**	UC_Accept_Payment	UC_10	High
11	10.1	Mentees "shall" be able to **read the advice and insights** of multiple mentors on various start-up topics in Mentor Column **without any charge**.	UC_View_Mentor Column	UC_11	Low

12	10.2	Mentors "shall" be able to **write and share** advice, rules, and plans for startup businesses in **Mentor Column.**	UC_Manage_MentorColumn	UC_12	Medium
13	11	Mentee "shall" have the capability to **provide feedback** about certain mentors. **Positive feedback** "shall" result in an improved mentor profile.	UC_Give_feedback	UC_13	High
14	12	In the case of **persistent bad ratings**, the Admin "shall" implement a system to warn mentors. After few warnings, a mentor/mentee "shall" be **removed** to maintain quality.	UC_Account_Deactivation	UC_14	Medium
15	13	Users, both Mentors and Mentees, "shall" **receive notifications** regarding new opportunities and when mentors share resources.	UC_Notification	UC_15	Medium
16	14	The System "shall" provide section of **Frequently Asked Questions** available on the website.	UC_FAQ	UC_16	Low
17	15	Users who are logged in the web application "shall" be **able to Log out** from the website when they're done.	UC_Logout	UC_17	Medium

11.7)   Requirements Trace-ability Matrix

The requirements trace-ability matrix is a table used to trace project life cycle activities and work products to the project requirements. The matrix establishes a thread that traces requirements from identification through implementation.

- **Build Column:**
  During the initial documentation phase, use placeholder values like "N/A," "Pre-Dev," or "Draft" in the "Build" column to indicate that requirements are not yet linked to a specific build or release.

Once development begins and specific builds are identified, we can update the "Build" column accordingly.

- **Category Column:**

The "Category" column in a Requirements Traceability Matrix (RTM) classifies requirements based on their nature or type, making it easier to manage and track them throughout the project.

Common categories include

1. Business
2. Functional
3. Non-Functional
4. Technical
5. Regulatory/Compliance
6. UI, Integration
7. Security
8. Performance
9. Usability
10. Scalability
11. Data
12. Reporting
13. Testing
14. Documentation.

Categorization helps prioritize, track, and manage requirements effectively.

Sr #	Para #	System Specification Text	Build	UseCase Name	Category
1	1	The System "shall" **only allow the registered user** to access website platform.	Pre-Dev	UC_Registration	Functional, Secrity,Business
2	2	The System "shall" **allow the user** to rendered the home page of the website after successful login	Pre-Dev	UC_Login	Functional, Secrity,Business
3	3	System "shall" process different **types of updating** e.g. updating of his personal details, profile details,	Pre-Dev	UC_User_Request	Functional, Business
		or upgrading of his status from registration, or updating of his payment details.			
4	3.1.2	User "shall" **create, update and manage profiles**, including their field of study, skills, goals, and business plan information	Pre-Dev	UC_User_Profile	Functional

5	4	The platform "shall" offer a **search** function for start-up founders to find **mentors** based on various criteria like names, subjects, skills, and tools.	Pre-Dev	UC_Discover_ Mentor	Functional ,Business
6	4.1	The system "shall" **recommend mentors** to mentees based on high ratings and relevance to the mentee's field, skills, and needs.	Pre-Dev	UC_Recommen d_Mentor	Business
7	7	A **chatbot** or messaging system "shall" facilitate communication between mentors and mentees for advice and guidance.	Pre-Dev	UC_ChatBot_C ommunication	Business
8	9	Mentors "shall" be able to **share useful resources** with mentees.	Pre-Dev	UC_Share_Res ources	Business
9	7	Mentee "shall" initiate payment	Pre-Dev	UC _Payment	Functional, Secrity
10	7	System "shall" generate invoice, confirmation receipt and finally will **accept payment**	Pre-Dev	UC_Accept_Pa yment	Functional
11	10.1	Mentees "shall" be able to **read the advice and insights** of multiple mentors on various start-up topics in Mentor Column **without any charge**.	Pre-Dev	UC_View_Men torColumn	Business, Functional
12	10.2	Mentors "shall" be able to **write and share** advice, rules, and plans for startup businesses in **Mentor Column.**	Pre-Dev	UC_Manage_M entorColumn	Business, Functional
13	11	Mentee "shall" have the capability to **provide feedback** about certain mentors. **Positive feedback** "shall" result in an improved mentor profile.	Pre-Dev	UC_Give_feedb ack	Functional
14	12	In the case of **persistent bad ratings**, the Admin "shall" implement a system to warn mentors. After few warnings, a mentor/mentee "shall" be **removed** to maintain quality.	Pre-Dev	UC_Account_D eactivation	Business
15	13	Users, both Mentors and Mentees, "shall" **receive notifications**	Pre-Dev	UC_Notificatio n	Functional

		regarding new opportunities and when mentors share resources.			
16	14	The System "shall" provide section of **Frequently Asked Questions** available on the website.	Pre-Dev	UC_FAQ	Functional
17	15	Users who are logged in the web application "shall" be **able to Log out** from the website when they're done.	Pre-Dev	UC_Logout	Functional

12) High-level Use-Case Diagram