



**AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)**

**FACULTY OF SCIENCE & TECHNOLOGY**

**DEPARTMENT OF COMPUTER SCIENCE**

**SOFTWARE ENGINEERING**

**SECTION: V                    GROUP: 07**

**WBS & EFFORT ESTIMATION ON**

*Robo Hatch - A Robotics Development Platform*

**Supervised By**

**MEHEDI HASAN**

**Submitted By**

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Spring 2024-25

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## Work Breakdown Structure (WBS)

Serial	WBS Phase	Task	Sub Task	Duration	Resources	Predecessor
1	Planning	Requirement Gathering	Stakeholder meetings	2 days	System Analyst, Project Manager	
			Needs analysis & documentation	3 days	System Analyst	
		Feasibility Study	Technical feasibility	1 day	Project Manager	1
			Legal & regulatory review	1 day	Security Analyst	1
			Financial assessment	1 day	Project Manager	1
		Risk Analysis	Identify key risks	1 day	QA, Project Manager	2
			Mitigation strategy development	1 day	Security Analyst	2
		UI/UX Design	Create wireframes	3 days	UI/UX Designer	3
			Design user flows	2 days	UI/UX Designer	3
			Build interactive prototypes	2 days	UI/UX Designer	3
		Database Design	ER Diagram creation	2 days	DBA	3
			Schema design & normalization	2 days	DBA	3
		System Architecture	Define modules and tech stack	2 days	Project Manager	3

			Define data flow & integration plans	3 days	Backend Developer	3
3	Development (Iter 1)	Authentication Module	Registration & login UI	2 days	Frontend Developer	4,5,6
			Backend: login, OTP, 2FA logic	3 days	Backend Developer	4,5,6
		User Roles & Dashboards	Freelancer dashboard	2 days	Frontend Developer	7
			Company/Team dashboard	2 days	Frontend Developer	7
			Admin dashboard	1 day	Backend Developer	7
		Research Upload Module	File validation	2 days	Backend Developer	8
			Preview and licensing UI	2 days	Frontend Developer	8
		CAD Upload Module	Format filtering	2 days	Backend Developer	8
			Purchase logic and UI	2 days	Frontend Developer	8
4	Development (Iter 2)	AI Matching Engine	Collect preferences and train ML model	4 days	AI/ML Engineer	9,10
			Integrate matching with tasks	4 days	AI/ML Engineer	9,10
		Task Assignment Module	Task assignment interface	2 days	Frontend Developer	11
			Accept/Reject logic	3 days	Backend Developer	11
		Marketplace Module	Project listing UI	2 days	Frontend Developer	12

			Media preview and pricing logic	4 days	Backend Developer	12
5	Integration & Testing	Unit Testing	Write test cases per module	3 days	QA Engineer	13
			Execute and document results	2 days	QA Engineer	13
		Integration Testing	Scenario planning and setup	2 days	QA Engineer	14
			System integration verification	3 days	QA Engineer	14
		Security Testing	Encryption and auth testing	2 days	Security Analyst	15
			GDPR/data compliance audit	1 day	QA, Security Analyst	15
6	Deployment	Server Setup	AWS/Azure instance setup	2 days	DevOps Engineer	16
			Domain, DNS, backup setup	1 day	DevOps Engineer	16
		CI/CD Pipeline	Docker setup and GitHub Actions	2 days	DevOps Engineer	17
			Kubernetes deployment configuration	2 days	DevOps Engineer	17
		Production Launch	Final staging test	1 day	Entire Team	18
			Go-live and monitoring	1 day	Entire Team	18
7	Feedback & Maintenance	Monitor Feedback	Setup feedback collection and bug logs	1 day	Project Manager, QA	19

		Analyze feedback reports	Ongoing	UI/UX Designer	19
System Updates		Patch deployment	Iterative	Backend, Frontend	20
		New feature rollout	Iterative	Entire Dev Team	20

**Effort Estimation Table**

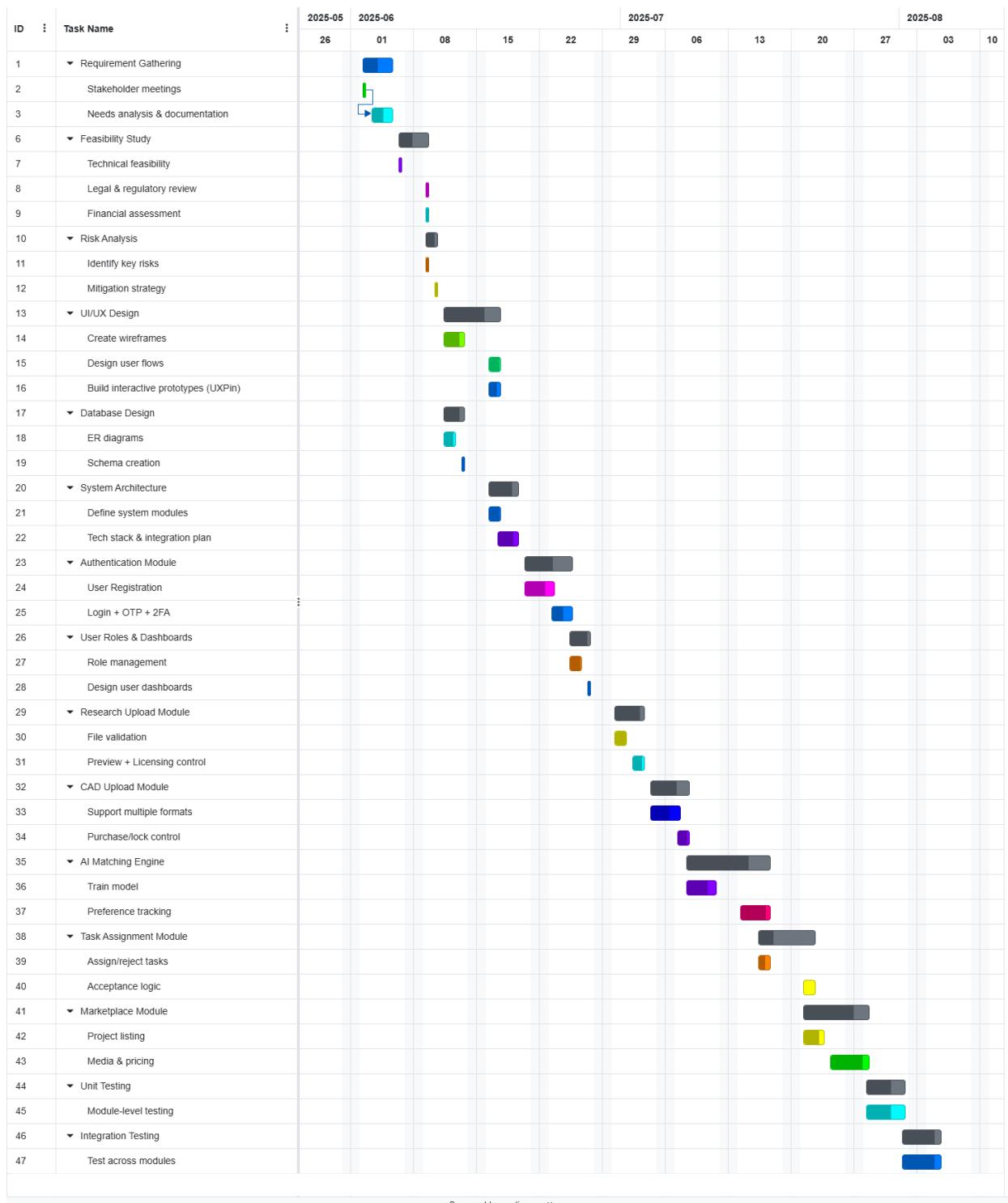
ID	Task	Duration	Start Date	End Date	Working Hour	Role/Position	Dependency
1	Stakeholder meetings	1 day	2025-03-01	2025-03-01	8	Project Manager	
2	Needs analysis & documentation	2 days	2025-03-02	2025-03-03	16	Business Analyst	
3	Technical feasibility	1 day	2025-03-04	2025-03-04	8	Technical Analyst	1
4	Legal & regulatory review	1 day	2025-03-05	2025-03-05	8	Legal Advisor	1
5	Financial assessment	1 day	2025-03-06	2025-03-06	8	Finance Officer	1
6	Identify key risks	1 day	2025-03-07	2025-03-07	8	Risk Analyst	2
7	Mitigation strategy development	1 day	2025-03-08	2025-03-08	8	Project Manager	2
8	Create wireframes	2 days	2025-03-09	2025-03-10	16	UI/UX Designer	3

9	Design user flows	2 days	2025-03-11	2025-03-12	16	UI/UX Designer	3
10	Build interactive prototypes	3 days	2025-03-13	2025-03-15	24	UI/UX Designer	3
11	ER Diagram creation	1 day	2025-03-16	2025-03-16	8	DBA	3
12	Schema design & normalization	2 days	2025-03-17	2025-03-18	16	DBA	3
13	Define modules and tech stack	2 days	2025-03-19	2025-03-20	16	System Architect	3
14	Define data flow & integration plans	2 days	2025-03-21	2025-03-22	16	System Architect	3
15	Registration & login UI	2 days	2025-03-23	2025-03-24	16	Frontend Developer	4,5,6
16	Backend: login, OTP, 2FA logic	3 days	2025-03-25	2025-03-27	24	Backend Developer	4,5,6
17	Freelancer dashboard	2 days	2025-03-28	2025-03-29	16	Frontend Developer	7
18	Company/Team dashboard	2 days	2025-03-30	2025-03-31	16	Frontend Developer	7
19	Admin dashboard	2 days	2025-04-01	2025-04-02	16	Admin	7
20	File validation	1 day	2025-04-03	2025-04-03	8	Backend Developer	8
21	Preview and licensing UI	2 days	2025-04-04	2025-04-05	16	Frontend Developer	8
22	Format filtering	1 day	2025-04-06	2025-04-06	8	Backend Developer	8
23	Purchase logic and UI	2 days	2025-04-07	2025-04-08	16	Frontend Developer	8

24	Collect preferences & train ML model	3 days	2025-04-09	2025-04-11	24	ML Engineer	9,10
25	Integrate matching with tasks	2 days	2025-04-12	2025-04-13	16	ML Engineer	9,10
26	Task assignment interface	2 days	2025-04-14	2025-04-15	16	Frontend Developer	11
27	Accept/Reject logic	1 day	2025-04-16	2025-04-16	8	Backend Developer	11
28	Project listing UI	2 days	2025-04-17	2025-04-18	16	Frontend Developer	12
29	Media preview and pricing logic	2 days	2025-04-19	2025-04-20	16	Frontend Developer	12
30	Write test cases per module	2 days	2025-04-21	2025-04-22	16	QA Engineer	13
31	Execute and document results	2 days	2025-04-23	2025-04-24	16	QA Engineer	13
32	Scenario planning and setup	1 day	2025-04-25	2025-04-25	8	QA Engineer	14
33	System integration verification	2 days	2025-04-26	2025-04-27	16	QA Engineer	14
34	Encryption and auth testing	2 days	2025-04-28	2025-04-29	16	Security Analyst	15
35	GDPR/data compliance audit	1 day	2025-04-30	2025-04-30	8	Security Analyst	15
36	AWS/Azure instance setup	1 day	2025-05-01	2025-05-01	8	DevOps Engineer	16
37	Domain, DNS, backup setup	1 day	2025-05-02	2025-05-02	8	DevOps Engineer	16

38	Docker setup and GitHub Actions	2 days	2025-05-03	2025-05-04	16	DevOps Engineer	17
39	Kubernetes deployment config	2 days	2025-05-05	2025-05-06	16	DevOps Engineer	17
40	Final staging test	1 day	2025-05-07	2025-05-07	8	QA Engineer	18
41	Go-live and monitoring	1 day	2025-05-08	2025-05-08	8	DevOps Engineer	18
42	Setup feedback & bug logs	1 day	2025-05-09	2025-05-09	8	QA Engineer	19
43	Analyze feedback reports	1 day	2025-05-10	2025-05-10	8	QA Engineer	19
44	Patch deployment	1 day	2025-05-11	2025-05-11	8	Backend Developer	20
45	New feature rollout	1 day	2025-05-12	2025-05-12	8	Frontend Developer	20

## Gantt Chart



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