EAST WEST UNIVERSITY

Course Title: IT Project Management and Entrepreneurship

Course code: CSE495

Section: 2

Semester: Fall2023

Implementation and Deployment Project of Intelligent System for Enhancing Artistic Expression

Submitted To:

Dipayan Bhadra

Adjunct Faculty,

CSE East West University

Date of Submission: 26.12.2023

Submitted By:

Name	ID
Md. Habibuzzaman [Leader]	2020-1-60-212
Israfil Arman	2020-1-60-086
Shafia Hasnin	2020-1-60-209
Samiu Esika Upoma	2020-1-60-082
Zarin Tasnim Nuzhat	2020-1-60-211

Project Charter

Project Name: **Implementation and Deployment Project of Intelligent System for Enhancing Artistic Expression**	
Project Owner: Zarin Tasnim Nuzhat	Decision Making Exec: Israfil Arman
Project Sponsor: Israfil Arman	Project Manager: Md. Habibuzzaman
Customer: Samiu Esika Upoma	Charter Date: 20.12.2023
Expected Start Date: 01.01.2024	Expected Completion Date: 07.11.2024

Project Description:

In this interactive tool, users can draw various objects on a digital canvas, and our intelligent system will classify and measure the accuracy of their drawings.

The process begins with users expressing their creativity by sketching an object of their choice. Once the drawing is complete, our machine learning model steps in to classify and understand the drawn object. This is a challenging task, as drawings come in diverse styles, qualities, and complexities. Our model, trained on a wide range of examples, works to accurately recognize and understand the user's creation.

The next exciting step involves measuring the accuracy of the drawing. Our system evaluates the drawing against a set of criteria, providing users with specific feedback on the accuracy of their depiction. This feedback is not just about pointing out mistakes but aims to be constructive and actionable, guiding users on how to improve their drawing skills.

Project Mission:

The mission of the Implementation and Deployment Project of Intelligent System for Enhancing Artistic Expression is to develop user-friendly software using advanced machine learning (like CNN) and a simple interface to help users improve their drawing skills. By fine-tuning accuracy, we aim to empower users to express themselves creatively, overcoming challenges like fine motor skill development. The project's purpose is to enhance drawing skills through personalized feedback, fostering a positive learning environment. Ultimately, our initiative seeks to positively influence users' cognitive and emotional development, improving academic performance, and creating opportunities in fields that require precise drawing skills.

Project Objectives:

- Implement a user-friendly app for sketching objects.
- Identify/detect the object drawn.
- Measure the accuracy or correctness of the object drawn.

Project Scope and Schedule:

No.	KEY Activities and Milestones	Predecessor	Prerequisite	Duration of the Activity /Date of the Milestone	Resource Allocation
1	Start	-----			
2	Project Initiation	1	Define project goals and objectives	1 week	1
3	Stakeholder Identification	2	Identify key stakeholders and their roles	1 week	1,2
4	Requirement Gathering	2	Define user requirements and system specifications	2 weeks	1,2
5	System Design and Architecture	3,4	Complete requirement analysis and design system	3 weeks	1,2,6,7,8
6	Machine Learning Model Training	5	Collect and preprocess training data	6 weeks	5,7,8
7	Object Identification	6	Implement object detection algorithms	4 weeks	5
8	Accuracy Measurement Algorithm	6	Develop algorithms to measure drawing accuracy	4 weeks	1,4
9	User Interface Design	5	Design an intuitive and simple user interface	3 weeks	1,3
10	App Development	6,7,8,9	Implement user-friendly sketching app	8 weeks	1,4
11	ML Model Integration	10	Integrate machine learning model into the app	4 weeks	1,4,5
12	User Testing	11	Gather user feedback and make necessary adjustments	2 weeks	1,9,10
13	System Integration Testing	11	Ensure all components work together smoothly	3 weeks	1,9,10
14	Deployment	12,13	Release the app for public use	2 weeks	1,4 ,11
15	Monitoring and Maintenance	14		4 weeks	1,4
16	End	15			

Project Resources and Cost:

COST TYPE	NO	VENDOR / LABOR NAMES	RATE/DAY	RESOURCE UNIT	DURATION (DAYS)	TOTAL AMOUNT
LABOR	1	Project Manager	2500	100%	165	4,12,500
	2	Project Analyst	2000	100%	22.5	45,000
	3	UX/UI Designer	1200	100%	15	18,000
	4	Developers	1500	300%	110	165,000
	5	Machine Learning Expert	1500	200%	70	105,000
	6	Database Engineer	1500	100%	15	22,500
CONSULTANTS	7	Machine Learning Model Consultant	2000	100%	45	90,000
	8	Drawing Education Specialist	2000	100%	45	90,000
TEST & QC	9	Test Engineer	1500	200%	12.5	18,750
	10	Quality Assurance Expert	1500	100%	12.5	18,750
MATERIAL	11	Database Server				45,000
		TOTAL COSTS				**1,030,500**

Project Benefits:

- Income from AppStore, Play Store and AdSense
- Enhanced Drawing Accuracy
- Cognitive and Artistic
- Development Educational
- Tool Positive Learning
- Environment Efficient
- Resource Utilization
- Adaptable Learning Experience

Project Risks:

- Machine Learning Model Accuracy
- Bias in Machine Learning
- Dataset Collection
- Computational Resource Constraints
- User Engagement
- Privacy Concerns
- Educational Effectiveness

Project Stakeholders:

- End Users (Kids and Children, Parents/Guardians)
- Educational Institutions
- Machine Learning Developers
- User Interface Designers
- Privacy and Legal Experts
- Project Managers
- Project Owner
- Project Sponsor
- Community Representatives
- Environmental Experts
- Educational Researchers

Critical Success Factors (enablers): Accurate Machine Learning Model, Engaging User Interface (UI/UX), Diverse Drawing Dataset, Adequate Computational Resources.

Constraints: Technological, Budget, Limited Computing Resources.

Assumptions: Technological stability, Educational Institution Collaboration.

Other Related Projects/Initiatives:

1. **Quick Draw**: Online drawing game by Google.
   https://indiaai.gov.in/article/exploring-quick-draw-an-online-game-by-google
2. **Skribbl**: Online multiplayer drawing and guessing game.
   https://skribbl.io/#:~:text=skribbl.io%20is%20a%20free,be%20crowned%20as%20the%20winner
3. **Drawing Now**: Step by step online learning platform.
   https://www.drawingnow.com/

Project Owner:	Zarin Tasnim Nuzhat	Project Manager:	Md. Habibuzzaman
	20-12-2023 *Signature & Date*		**20-12-2023** *Signature & Date*

Stakeholder, Risk Analysis and Management

Stakeholders	Influence	Current Support	Calculated Rating	Success Criteria	Action	Engagement Strategy	Lead
End Users (Kids and Children, Parents/Guardians)	5	2	10	Positive feedback from users, visible improvement in drawing skills, increased engagement	Implementing requested features, incorporating user suggestions, conducting user workshops.	Regular surveys, feedback sessions, and gamification elements to make the tool enjoyable	User Experience (UX) team
Educational Institutions	4	3	12	Improved academic performance, positive impact on fine motor skills, integration into the curriculum	Customizing features for educational use, providing training materials, addressing institutional concerns	Collaborative workshops, pilot programs, and showcasing success stories.	Education liaison team

Machine Learning Developers	5	1	5	High model accuracy, adaptability to diverse drawing styles, scalability.	Continuous model refinement, addressing feedback, fostering a culture of innovation.	Regular updates on model performance, collaboration on model improvements, and recognition of contributions.	Machine learning research and development team
User Interface Designers	5	1	5	Positive feedback on the interface, intuitive user experience	Iterative design updates based on user feedback, ensuring accessibility standards.	User testing sessions, design workshops, and acknowledgment of design excellence	UI/UX design team
Privacy and Legal Experts	4	2	8	Compliance with data protection laws, user trust in data security.	Periodic privacy audits, legal compliance checks, and quick response to legal inquiries.	Regular updates on privacy measures, transparency in data handling, and addressing privacy concerns.	Legal and privacy compliance team
Project Managers	5	1	5	Timely project delivery, adherence to budget, and	Risk assessment and management,	Regular project updates, transparent communication,	Project management team,
				successful feature implementation.	efficient project coordination, and proactive issue resolution.	and addressing concerns promptly.	communication specialists.
Community Representatives	4	2	8	Positive community impact, active engagement.	Incorporating community suggestions, involving representatives in decisionmaking processes.	Community outreach programs, forums for open dialogue, and addressing community concerns.	Community engagement specialists
Environmental Experts	4	2	8	Sustainable software development practices, minimized environmental impact.	Conducting environmental impact assessments, implementing eco-friendly practices	Regular updates on eco-friendly features, collaboration on green initiatives.	Environmental impact assessment team

Educational Researchers	4	3	12	Positive findings in research on the tool's impact on learning and cognitive development.	Providing necessary research materials, participating in research conferences, and facilitating data access.	Collaborative research projects, sharing data for analysis, and acknowledging research contributions.	Research collaboration team
Project Owner	5	1	5	Successful project delivery, meeting objectives within budget and timeline.	Providing necessary resources and support, resolving high-level issues, and ensuring alignment with organizational goals	Regular project updates, transparent communication, and showcasing project milestones.	Project Owner, Project Managers
Project Sponsor	5	1	5	Positive impact on the organization's goals, successful deployment, and recognition for supporting innovative projects	Providing financial and strategic support, addressing high-level organizational concerns, and advocating for the project at higher levels.	Regular project briefings, demonstrating project value, and maintaining a strong partnership.	Project Sponsor, Project Owner

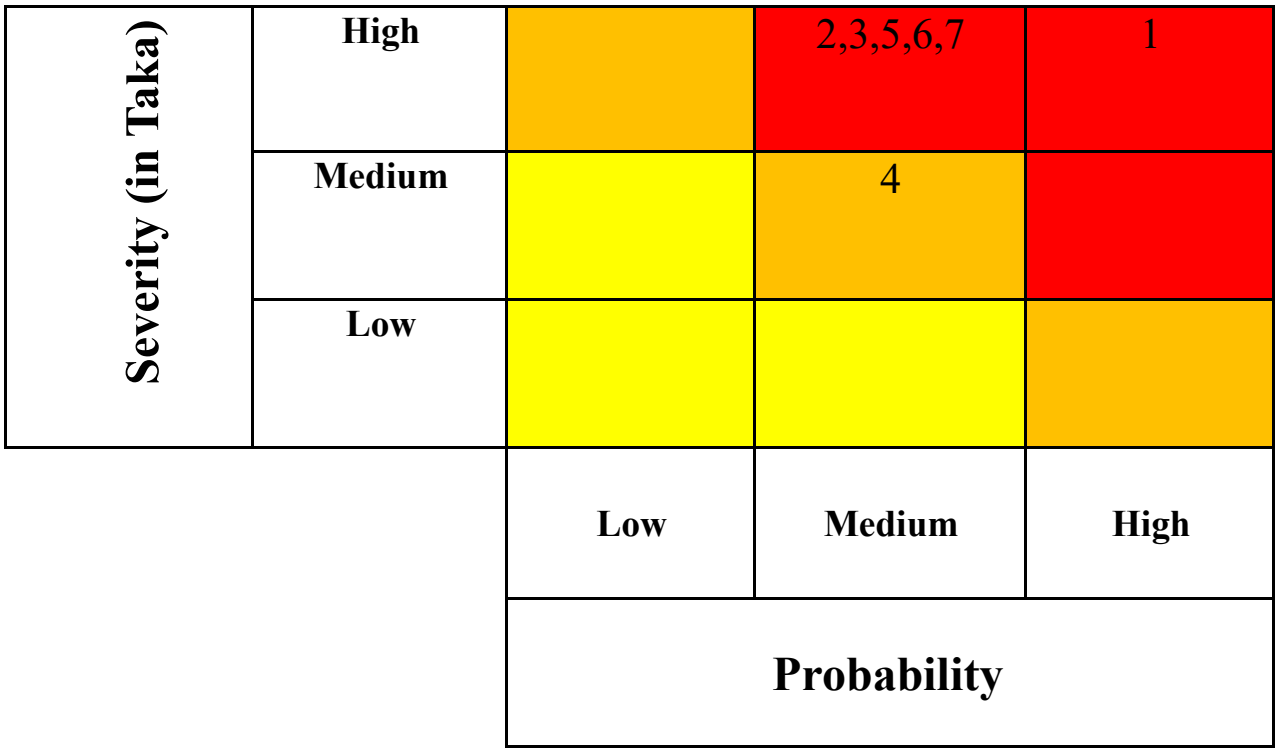
Current Support
1= Active supporter
2= Moderately positive
3=Neutral
4= Moderately negative
5=Negative

Power/Influence
1= No power
2= Some influence over project outcomes
3= Moderate Influence
4=Major influence on project
5= Maximum influence

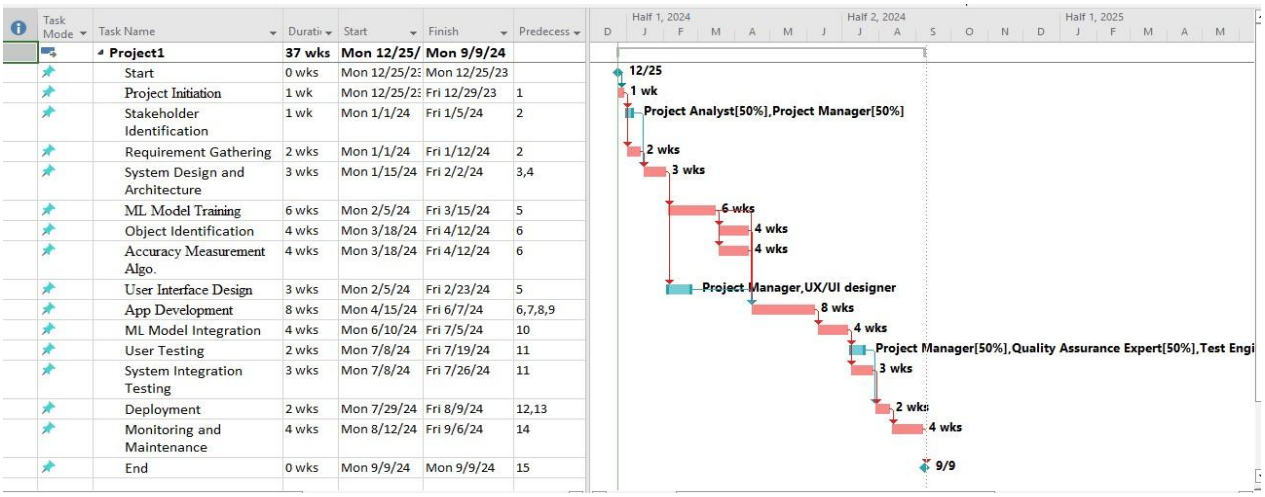
Stakeholder Rating	Thresholds
Major (must take action)	13-25
Minor (should take action)	6-12
Insignificant(observe)	1-5

Risk Event Description And Impact	*Probability H/M/L*	*Severity H/M/L*	*Mitigation Strategy*	*Who/When*
1. Machine Learning Model Accuracy: The machine learning model may not accurately identify and classify drawings, leading to inaccurate feedback for users	H	H	Implement regular model updates based on user feedback, conduct extensive testing on diverse drawing styles during the development phase	Machine Learning Developers, Continuous throughout the project
2. Bias in Machine Learning: The machine learning model may exhibit bias, resulting in unfair or inaccurate evaluations, potentially affecting user experience negatively	M	H	Implement fairness-aware machine learning techniques, conduct bias audits during model development, and ensure diverse and representative training datasets	Machine Learning Developers, Continuous throughout the project.
3. Dataset Collection: Inadequate or biased training data may lead to a model that doesn't generalize well to diverse user drawings	M	H	Use a diverse dataset representing various drawing styles, continuously update and expand the dataset based on user interactions, and conduct regular data quality assessments	Machine Learning Developers, Continuous throughout the project
4. Computational Resource Constraints: Insufficient computational resources may lead to delays in model training, deployment, or response times, impacting user experience	M	M	Optimize code and algorithms for efficiency, consider cloud-based solutions for scalability, and monitor resource usage during peak times.	DevOps and Infrastructure Team, Continuous throughout the project.
5. User Engagement: Users may not find the tool engaging, leading to low adoption rates and limited impact on drawing skill improvement	M	H	Conduct user feedback surveys, implement gamification elements, and regularly update the tool with new features to maintain user interest	User Experience (UX) Team, Continuous throughout the project.

6. Privacy Concerns: Users may have concerns about the privacy of their drawings and data, potentially leading to a loss of trust	M	H	Clearly communicate the data usage policy, implement robust data encryption, and regularly update users on privacy measures	Privacy and Legal Experts, Continuous throughout the project
7. Educational Effectiveness: The tool may not effectively contribute to improving users' drawing skills or cognitive development as intended	M	H	Collaborate with educational experts, conduct regular assessments on the tool's educational impact, and update features based on educational feedback	Education Liaison Team, Continuous throughout the project



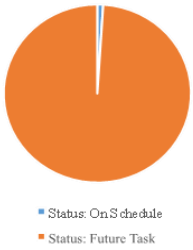
Gantt Chart:



Task Mode	Task Name	Duration	Start	Finish	Predecessors
	Project1	**37 wks**	**Mon 12/25/**	**Mon 9/9/24**	
	Start	0 wks	Mon 12/25/23	Mon 12/25/23	
	Project Initiation	1 wk	Mon 12/25/23	Fri 12/29/23	1
	Stakeholder Identification	1 wk	Mon 1/1/24	Fri 1/5/24	2
	Requirement Gathering	2 wks	Mon 1/1/24	Fri 1/12/24	2
	System Design and Architecture	3 wks	Mon 1/15/24	Fri 2/2/24	3,4
	ML Model Training	6 wks	Mon 2/5/24	Fri 3/15/24	5
	Object Identification	4 wks	Mon 3/18/24	Fri 4/12/24	6
	Accuracy Measurement Algo.	4 wks	Mon 3/18/24	Fri 4/12/24	6
	User Interface Design	3 wks	Mon 2/5/24	Fri 2/23/24	5
	App Development	8 wks	Mon 4/15/24	Fri 6/7/24	6,7,8,9
	ML Model Integration	4 wks	Mon 6/10/24	Fri 7/5/24	10
	User Testing	2 wks	Mon 7/8/24	Fri 7/19/24	11
	System Integration Testing	3 wks	Mon 7/8/24	Fri 7/26/24	11
	Deployment	2 wks	Mon 7/29/24	Fri 8/9/24	12,13
	Monitoring and Maintenance	4 wks	Mon 8/12/24	Fri 9/6/24	14
	End	0 wks	Mon 9/9/24	Mon 9/9/24	15

Critical Tasks:

CRITICAL TASKS

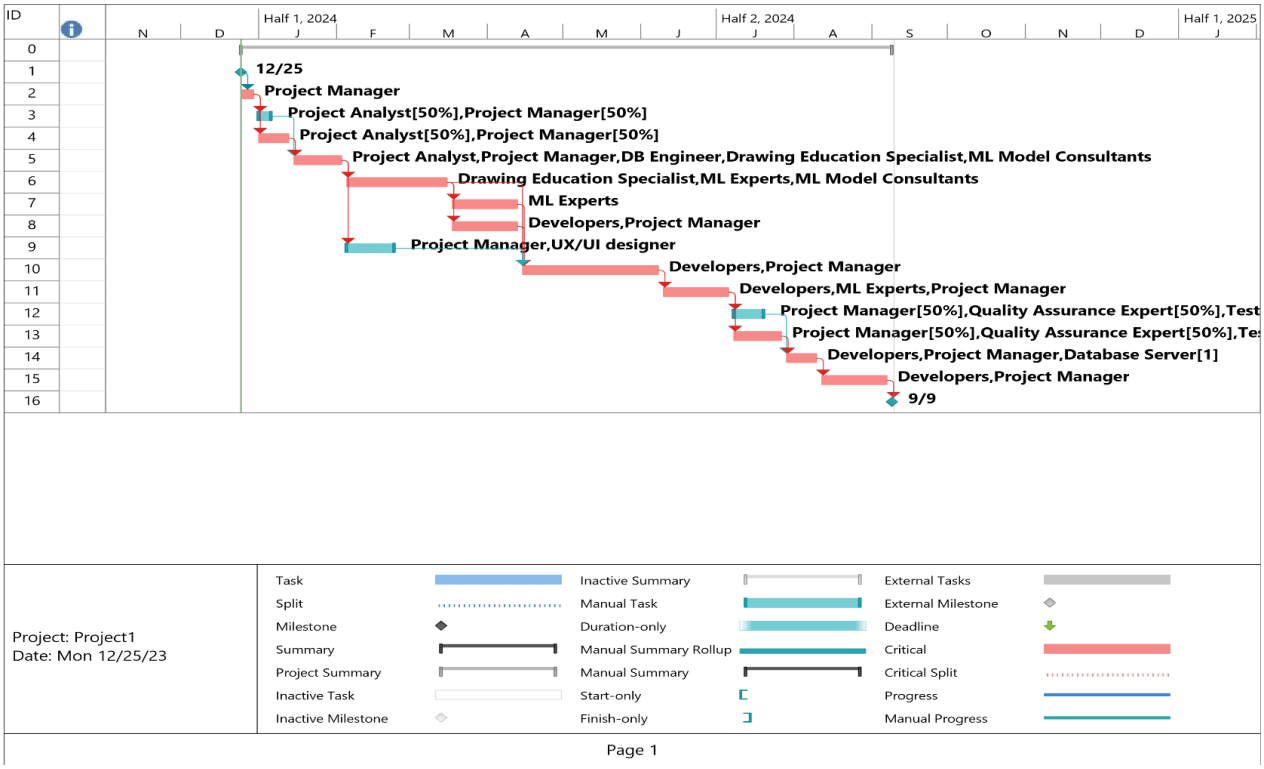


A task is critical if there is no room in the schedule for it to slip.
Learn more about managing your project's critical path.

Name	Start	Finish	% Complete	Remaining Work	Resource Names
Start	Mon 12/25/23	Mon 12/25/23	0%	0 hrs	
Project Initiation	Mon 12/25/23	Fri 12/29/23	0%	40 hrs	Project Manager
Requirement Gathering	Mon 1/1/24	Fri 1/12/24	0%	80 hrs	Project Analyst[50%],Project Manager[50%]
System Design and Architecture	Mon 1/15/24	Fri 2/2/24	0%	600 hrs	Project Analyst,Project Manager,DB Engineer,Drawing Education Specialist,ML Model Consultants
ML Model Training	Mon 2/5/24	Fri 3/15/24	0%	720 hrs	Drawing Education Specialist,ML Experts,ML Model Consultants
Object Identification	Mon 3/18/24	Fri 4/12/24	0%	160 hrs	ML Experts
Accuracy Measurement Algo.	Mon 3/18/24	Fri 4/12/24	0%	320 hrs	Developers,Project Manager
App Development	Mon 4/15/24	Fri 6/7/24	0%	640 hrs	Developers,Project Manager
ML Model Integration	Mon 6/10/24	Fri 7/5/24	0%	480 hrs	Developers,ML Experts,Project Manager
System Integration Testing	Mon 7/8/24	Fri 7/26/24	0%	180 hrs	Project Manager[50%],Quality Assurance Expert[50%],Test Engineer[50%]
Deployment	Mon 7/29/24	Fri 8/9/24	0%	160 hrs	Developers,Project Manager,Database Server[1]
Monitoring and Maintenance	Mon 8/12/24	Fri 9/6/24	0%	320 hrs	Developers,Project Manager
End	Mon 9/9/24	Mon 9/9/24	0%	0 hrs	

Resource Allocation:

	Resource Name	Type	Material	Initials	Group	Max.	Std. Rate	Ovt.	Cost/Use	Accrue	Base
1	Project Manager	Work		PM		100%	2,500.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
2	Project Analyst	Work		PA		100%	2,000.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
3	UX/UI designer	Work		UD		100%	1,200.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
4	Developers	Work		D		300%	1,500.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
5	ML Experts	Work		ME		200%	1,500.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
6	DB Engineer	Work		DBE		100%	1,500.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
7	ML Model Consultants	Work		MMC		100%	2,000.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
8	Drawing Education Specialist	Work		DES		100%	2,000.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
9	Test Engineer	Work		TE		200%	1,500.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
10	Quality Assurance Expert	Work		QAE		100%	1,500.00৳/day	0.00৳/hr	0.00৳	Prorated	Standard
11	Database Server	Material		DS			45,000.00৳		0.00৳	Prorated	



Project: Project1
Date: Mon 12/25/23

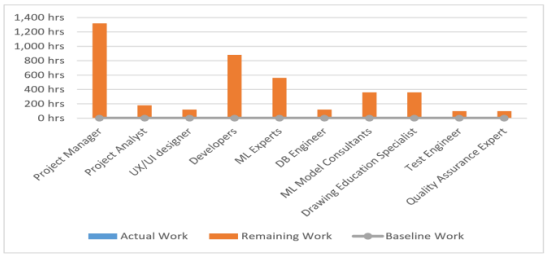
Task		Inactive Summary		External Tasks	
Split		Manual Task		External Milestone	
Milestone		Duration-only		Deadline	
Summary		Manual Summary Rollup		Critical	
Project Summary		Manual Summary		Critical Split	
Inactive Task		Start-only		Progress	
Inactive Milestone		Finish-only		Manual Progress	

Resource Overview:

RESOURCE OVERVIEW

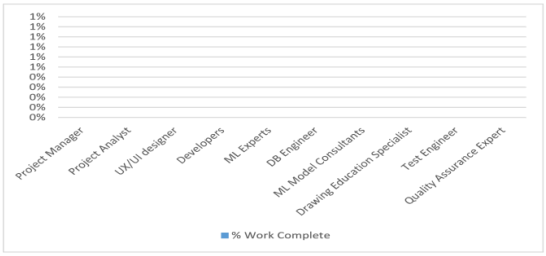
RESOURCE STATS

Work status for all work resources.



WORK STATUS

% work done by all the work resources.



RESOURCE STATUS

Remaing work for all work resources.

Name	Start	Finish	Remaining Work
Project Manager	Mon 12/25/23	Fri 9/6/24	1,320 hrs
Project Analyst	Mon 1/1/24	Fri 2/2/24	180 hrs
UX/UI designer	Mon 2/5/24	Fri 2/23/24	120 hrs
Developers	Mon 3/18/24	Fri 9/6/24	880 hrs
ML Experts	Mon 2/5/24	Fri 7/5/24	560 hrs
DB Engineer	Mon 1/15/24	Fri 2/2/24	120 hrs
ML Model Consultants	Mon 1/15/24	Fri 3/15/24	360 hrs
Drawing Education Specialist	Mon 1/15/24	Fri 3/15/24	360 hrs
Test Engineer	Mon 7/8/24	Fri 7/26/24	100 hrs
Quality Assurance Expert	Mon 7/8/24	Fri 7/26/24	100 hrs

Cost Overview:

COST OVERVIEW

MON 12/25/23 MON 9/9/24

COST

1,030,500.00৳

REMAINING COST

1,030,500.00৳

% COMPLETE

0%

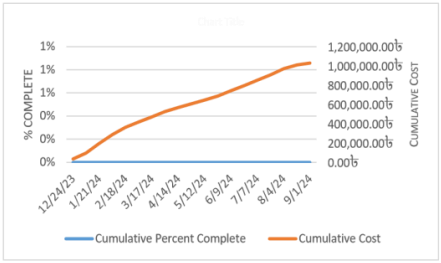
COST STATUS

Cost status for top level tasks.

Name	Actual Cost	Remaining Cost	Baseline Cost	Cost	Cost Variance
Start	0.00৳	0.00৳	0.00৳	0.00৳	0.00৳
Project Initiation	0.00৳	12,500.00৳	0.00৳	12,500.00৳	12,500.00৳
Stakeholder Identification	0.00৳	11,250.00৳	0.00৳	11,250.00৳	11,250.00৳
Requirement Gathering	0.00৳	22,500.00৳	0.00৳	22,500.00৳	22,500.00৳
System Design and Architecture	0.00৳	150,000.00৳	0.00৳	150,000.00৳	150,000.00৳
ML Model Training	0.00৳	165,000.00৳	0.00৳	165,000.00৳	165,000.00৳
Object Identification	0.00৳	30,000.00৳	0.00৳	30,000.00৳	30,000.00৳
Accuracy Measurement Algo.	0.00৳	80,000.00৳	0.00৳	80,000.00৳	80,000.00৳
User Interface Design	0.00৳	55,500.00৳	0.00৳	55,500.00৳	55,500.00৳
App Development	0.00৳	160,000.00৳	0.00৳	160,000.00৳	160,000.00৳
ML Model Integration	0.00৳	110,000.00৳	0.00৳	110,000.00৳	110,000.00৳
User Testing	0.00৳	27,500.00৳	0.00৳	27,500.00৳	27,500.00৳
System Integration Testing	0.00৳	41,250.00৳	0.00৳	41,250.00৳	41,250.00৳
Deployment	0.00৳	85,000.00৳	0.00৳	85,000.00৳	85,000.00৳
Monitoring and Maintenance	0.00৳	80,000.00৳	0.00৳	80,000.00৳	80,000.00৳
End	0.00৳	0.00৳	0.00৳	0.00৳	0.00৳

PROGRESS VERSUS COST

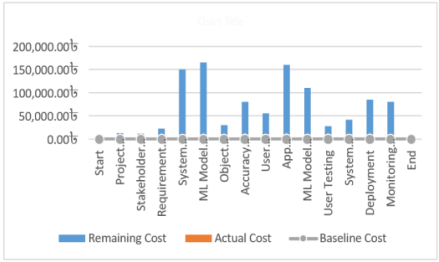
Progress made versus the cost spent over time. If % Complete line below the cumulative cost line,your project may be over budget.



COST STATUS

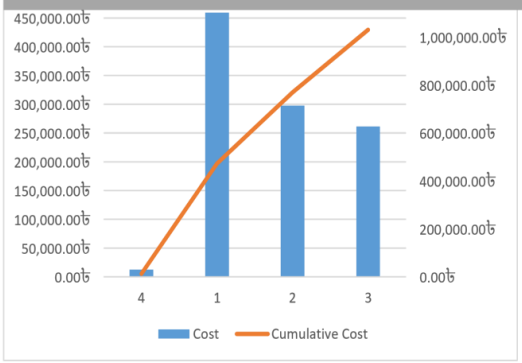
Cost status for all top-level tasks. Is your baseline zero?

Try setting as baseline



CASH FLOW

Actual Cost	Baseline Cost	Remaining Cost	Cost Variance
0.00৳	0.00৳	1,030,500.00 ৳	1,030,500.00 ৳



The chart shows the project's cumulative cost and the cost per quater.
To see the costs for a different time period, select the Edit option from the Field List.

The table below shows cost information for all top-level tasks.
To see cost stats for all tasks, set the Outline Level in the Field List.

Name	Remaining Cost	Actual Cost	Cost	ACWP	BCWP	BCWS
Start	0.00৳	0.00৳	0.00৳	0.00৳	0.00৳	0.00৳
Project Initiation	12,500.00৳	0.00৳	12,500.00৳	0.00৳	0.00৳	0.00৳
Stakeholder Identification	11,250.00৳	0.00৳	11,250.00৳	0.00৳	0.00৳	0.00৳
Requirement Gathering	22,500.00৳	0.00৳	22,500.00৳	0.00৳	0.00৳	0.00৳
System Design and Architecture	150,000.00৳	0.00৳	150,000.00৳	0.00৳	0.00৳	0.00৳
ML Model Training	165,000.00৳	0.00৳	165,000.00৳	0.00৳	0.00৳	0.00৳
Object Identification	30,000.00৳	0.00৳	30,000.00৳	0.00৳	0.00৳	0.00৳
Accuracy Measurement Algo.	80,000.00৳	0.00৳	80,000.00৳	0.00৳	0.00৳	0.00৳
User Interface Design	55,500.00৳	0.00৳	55,500.00৳	0.00৳	0.00৳	0.00৳
App Development	160,000.00৳	0.00৳	160,000.00৳	0.00৳	0.00৳	0.00৳
ML Model Integration	110,000.00৳	0.00৳	110,000.00৳	0.00৳	0.00৳	0.00৳
User Testing	27,500.00৳	0.00৳	27,500.00৳	0.00৳	0.00৳	0.00৳
System Integration Testing	41,250.00৳	0.00৳	41,250.00৳	0.00৳	0.00৳	0.00৳
Deployment	85,000.00৳	0.00৳	85,000.00৳	0.00৳	0.00৳	0.00৳
Monitoring and Maintenance	80,000.00৳	0.00৳	80,000.00৳	0.00৳	0.00৳	0.00৳
End	0.00৳	0.00৳	0.00৳	0.00৳	0.00৳	0.00৳

Assumptions of Cost – Benefit Analysis:

A. Time:

i. Project time is considered 1 year

ii. Project Lifetime is considered 11 years, among 11 years, 1 year for project implementation and 10 years for project benefits

B. Benefit:

i. 75 Taka in considered for per download after 1 year.

ii. 50% of the downloads will be increased every year.

iii. 20 Taka per ad revenue is considered.

iv. The annual rate of increment for the new AdSense considered 50%.

v. 500 takas will be saved per month per person for not wasting Paper while drawing practice. Can be used for drawing without any pencil or pen cost.

vi. 1000 persons will be beneficiary in this process monthly.

vii. Savings of $185 per ton of CO2 emission considered. 1000 users will have this impact on the environment. Each person will save 0.1kG of CO2,while using our app and going paperless.

C. Cost:

i. 3% of the investment cost per year is considered as maintenance cost (bug fixing, security update,algorithm optimization).

Analysis:

i. 12% discount rate is considered

Cost Benefit Analysis:

						Discount Rate			12%			
Years	Cost	Maintaince	Total Cost	Income(App Store, Google Play Store)	Income(Google Adsense)	Total Income	Net Benefit	DF	PV of Cost	PV of Income	PV of Benefit	Cumulative Cash Flow
0	1030500	0	1030500			0.00	-1030500.00	1.00	1030500	0.00	-1030500.00	-1030500.00
1		30915	30915	37500	40000	77500.00	46585.00	0.89	27602.68	69196.43	41593.75	-983915.00
2		30915	30915	56250	60000	116250.00	85335.00	0.80	24645.25	92673.79	68028.54	-898580.00
3		30915	30915	84375	90000	174375.00	143460.00	0.71	22004.69	124116.68	102111.99	-755120.00
4		30915	30915	126563	135000	261562.50	230647.50	0.64	19647.04	166227.70	146580.66	-524472.50
5		30915	30915	189844	202500	392343.75	361428.75	0.57	17542.00	222626.38	205084.38	-163043.75
6		30915	30915	284766	303750	588515.63	557600.63	0.51	15662.50	298160.33	282497.83	394556.88
7		30915	30915	427148	455625	882773.44	851858.44	0.45	13984.38	399321.87	385337.50	1246415.31
8		30915	30915	640723	683438	1324160.16	1293245.16	0.40	12486.05	534806.08	522320.03	2539660.47
9		30915	30915	961084	1025156	1986240.23	1955325.23	0.36	11148.26	716258.14	705109.88	4494985.70
10		30915	30915	1441626	1537734	2979360.35	2948445.35	0.32	9953.80	959274.30	949320.49	7443431.05
Sum			1339650.00	4249877.93	4533203.13	8783081.05	7443431.05	6.65	1205176.64	3582661.69	2377485.05	11763418.16

NPV	2377485.05
BCR	2.972727448
IRR	32%
Payback Period	5.29240238

NPV (Net Present Value):

The project has a positive NPV of $2,377,485.05, indicating that the present value of expected cash flows exceeds the initial investment. This suggests the potential for profitability.

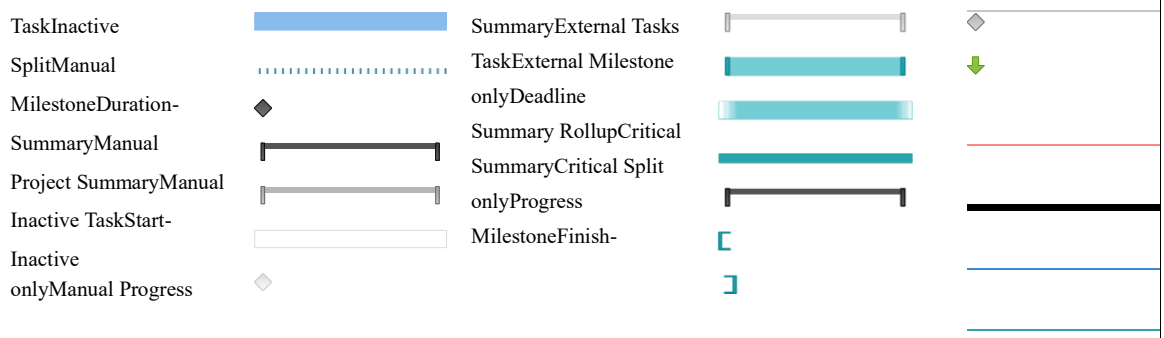
BCR (Benefit-to-Cost Ratio):
The Benefit-to-Cost Ratio is 2.97, signifying that for every dollar invested, there are approximately $2.97 in benefits. A BCR greater than 1 suggests a potentially worthwhile investment.

IRR (Internal Rate of Return):
IRR of 32% means the project is expected to give a return of 32% on the initial investment. Higher IRR is generally better, indicating a more attractive investment.

Payback Period:
Payback Period of 5.29 years means it will take that time to recover the initial investment.

ID	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Cost
0	Project1	37 wks	Mon 12/25/	Mon 9/9/24			1,030,500.00৳
1	Start	0 wks	Mon 12/25/2	Mon 12/25/23			0.00৳
2	Project Initiation	1 wk	Mon 12/25/2	Fri 12/29/23	1	Project Manager	12,500.00৳
3	Stakeholder Identification	1 wk	Mon 1/1/24	Fri 1/5/24	2	Project Analyst[50%],Project Manager[50%]	11,250.00৳
4	Requirement Gathering	2 wks	Mon 1/1/24	Fri 1/12/24	2	Project Analyst[50%],Project Manager[50%]	22,500.00৳
5	System Design and Architecture	3 wks	Mon 1/15/24	Fri 2/2/24	3,4	Project Analyst,Project Manager,DB Engineer,Drawing Education Specialist,ML	150,000.00৳
6	ML Model Training	6 wks	Mon 2/5/24	Fri 3/15/24	5	Drawing Education Specialist,ML Experts,ML	165,000.00৳
7	Object Identification	4 wks	Mon 3/18/24	Fri 4/12/24	6	ML Experts	30,000.00৳
8	Accuracy Measurement Algo.	4 wks	Mon 3/18/24	Fri 4/12/24	6	Developers,Project Manager	80,000.00৳
9	User Interface Design	3 wks	Mon 2/5/24	Fri 2/23/24	5	Project Manager,UX/UI designer	55,500.00৳
10	App Development	8 wks	Mon 4/15/24	Fri 6/7/24	6,7,8,9	Developers,Project Manager	160,000.00৳
11	ML Model Integration	4 wks	Mon 6/10/24	Fri 7/5/24	10	Developers,ML Experts,Project Manager	110,000.00৳

12	User Testing	2 wks	Mon 7/8/24	Fri 7/19/24	11	Project Manager[50%],Quality Assurance Ex	27,500.00৳
13	System Integration Testing	3 wks	Mon 7/8/24	Fri 7/26/24	11	Project Manager[50%],Quality Assurance Expert[50%],Test Engineer[50%]	41,250.00৳
14	Deployment	2 wks	Mon 7/29/24	Fri 8/9/24	12,13	Developers,Project Manager,Database Serv	85,000.00৳
15	Monitoring and Maintenance	4 wks	Mon 8/12/24	Fri 9/6/24	14	Developers,Project Manager	80,000.00৳
16	End	0 wks	Mon 9/9/24	Mon 9/9/24	15		0.00৳



Project: Project1
Date: Mon 12/25/23

Discussion: The project aims to develop an intelligent system for enhancing artistic expression. The system allows users to draw on a digital canvas and provides feedback on their drawings. We have identified key stakeholders, potential risks, and mitigation strategies. Moreover, we have developed a project charter, Gantt chart, and found the critical path and then allocated resources accordingly. Besides, we analyzed cost and benefit i.e. the project's financial viability using metrics such as NPV, BCR, IRR, and payback period. We found a positive net present value, a favorable benefit-to-cost ratio, and a reasonable internal rate of return, suggesting that the project is financially viable. Overall, the project seems well-planned, considering various aspects, and has the potential to make a positive impact on users' artistic expression and learning outcomes.
[Md. Habibuzzaman(2020-1-60-212)]

Discussion: Expanding revenue through premium features and partnerships presents exciting opportunities for the intelligent artistic expression system project: "In addition to the Play Store and AdSense, exploring partnerships and collaborations with art supply vendors or online marketplaces could open up a new avenue for revenue. By offering curated, recommended art

tools, materials, or exclusive discounts within the app, users can conveniently access resources that complement the intelligent system. Another potential sector could involve premium subscription models, granting users access to advanced features, exclusive content, or personalized learning paths. Such diversified revenue streams not only supplement app-based income but also enrich the overall user experience, fostering a vibrant artistic community. **[Israfil Arman(2020-1-60-086)]**

Discussion: The project report effectively applies project management and entrepreneurship principles to enhance artistic expression. It covers essential aspects like mission, objectives, stakeholders, and tools such as Gantt charts and risk analysis. The emphasis on advanced technologies like machine learning and collaboration underscores innovation. To further improve, a recommendation is to ensure more realistic cost and income assumptions. This adjustment enhances financial planning, transparency, and project sustainability, aligning ambitions with practical expectations for a more resilient outcome. **[Shafia Hasnin(2020-1-60-209)]**

Discussion: The Implementation and Deployment Project for the Intelligent System for Enhancing Artistic Expression appears to be a well-organized initiative. The project plan, stakeholder engagement, and risk management strategies demonstrate a thoughtful approach. The comprehensive project plan outlines key activities, milestones, and resource allocation, ensuring a systematic approach from initiation to deployment. With diverse stakeholders, including end-users, educational institutions, machine learning developers, and privacy experts, the project incorporates a robust stakeholder engagement strategy and risk management plan. The allocation of resources, both human and material, appears well-considered. Proactive risk management strategies and stakeholder engagement initiatives further enhance the project's robustness. The cost analysis reveals positive indicators, with a substantial Net Present Value, a favorable Benefit-to-Cost Ratio, and a promising Internal Rate of Return. These metrics suggest that the project is not only financially viable but also holds the potential for long-term profitability. The mission to enhance artistic expression and contribute to education aligns with broader goals, making the project an impactful and sustainable venture. Continuous monitoring, agile adjustments, and proactive risk mitigation will ensure the project's success in the dynamic landscape it navigates. Overall, the project presents a blend of technology, creativity, and financial viability, setting the stage for a positive impact on users and stakeholders. **[Samiu Esika Upoma(2020-1-60-082)]**

Discussion: The project aims to develop an intelligent system for enhancing artistic expression, which allows users to draw objects on a digital canvas and receive feedback on the accuracy of their drawings. While the project has some indirect benefits, such as fostering creativity and cognitive development, it is important to focus on increasing the direct benefits to increase revenue. One way to increase direct benefits is to offer additional features or services that users can access for a fee. For example, the project could offer advanced drawing tools, personalized feedback, or exclusive content to users who pay a subscription fee. Another way to increase direct benefits is to partner with other companies or organizations that share the project’s mission or target audience. The project could collaborate on joint projects, cross-promote each other’s products or services, or share revenue from referrals or affiliate marketing. By focusing on increasing direct benefits, the project can attract more users, generate more revenue, and achieve its goals more effectively. **[Zarin Tasnim Nuzhat(2020-1-60-211)]**