MINIPROJECT LOGBOOK

(CSM401 Miniproject 1-B)

GROUP MEMBERS

1. Mrunal Mahajan
2. Ayush Verma
3. Latish Adwani
4. Vineet Chelani

Supervisor

Prof. Sanjay Mirchandani

Department of Computer Engineering

Vivekanand Education Society's Institute of Technology

HAMC, Collector's Colony, Chembur,

Mumbai-400074

University of Mumbai

(AY 2023-24)

INSTITUTE VISION & MISSION

Vision:
To create a vibrant knowledge oriented environment with innovative teaching practices and to inculcate a tradition of socially conscious application of technology.

Mission:

- To inculcate a culture of value based education.
- To enthuse students to develop in an ambient environment of caring and of sharing information.
- To enable students to work towards excellence in their chosen field with a professional bent of mind.

DEPARTMENT OF COMPUTER ENGINEERING

Vision:

To create a center of excellence in computing by imparting quality education for developing competent professionals.

Mission:

- To provide an enabling environment through excellence in teaching & learning to contribute towards industry and society.
- To promote and strengthen interdisciplinary approach in innovation, creativity and research.
- To facilitate productive employment and higher studies with entrepreneurial attitude and professional ethics.

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

I	To provide students with a solid foundation in their core concepts of mathematical, scientific and computer engineering fundamentals required to comprehend, analyze and design solutions for real life problems.
II	To inculcate in students, a balanced outlook with professional and ethical attitude, develop effective communication skills, teamwork and leadership qualities with multidisciplinary approach.
III	To prepare students to excel in postgraduate programs through an excellent academic environment and make them ready for productive employment in the public or private sectors and provide lifelong learning experience.
IV	To provide broad educational and research experience through interdisciplinary and industry centric programs.

PROGRAM OUTCOMES (POs)

Program Outcome Code	Program Outcome Description
PO1	Basic Engineering knowledge: An ability to apply the fundamental knowledge in mathematics, science and engineering to solve problems in Computer Engineering.
PO2	Problem Analysis: Identify, formulate, research literature and analyze computer engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and computer engineering and science.
PO3	Design/ Development of Solutions: Design solutions for complex computer engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental considerations.
PO4	Conduct investigations of complex engineering problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.
PO5	Modern Tool Usage: Create, select and apply appropriate techniques, resources and modern computer engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to computer engineering practice.
PO7	Environment and Sustainability: Understand the impact of professional computer engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of computer engineering practice.
PO9	Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
PO11	Project Management and Finance: Demonstrate knowledge and understanding of computer engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long Learning: Recognize the need for and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1	Professional Skills - The ability to develop programs for computer based systems of varying complexity and domains using standard practices.
PSO2	Successful Career - The ability to adopt skills, languages, environment and platforms for creating innovative career paths, being successful entrepreneurs or for pursuing higher studies.

STUDENT INFORMATION

Project Title: TaranAI: AI based Music Generator

	Student 1	Student 2	Student 3	Student 4
Roll no	41	61	01	17
Name	Mrunal Mahajan	Ayush Verma	Latish Adwani	Vineet Chelani
Class with Division	D7A	D7A	D7A	D7A
Contact No.	7058112289	9136224186	9322445108	9172071820
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INSTRUCTIONS TO STUDENTS:

1. The logbook must be submitted to the Guide or Co-Guide for verification and evaluation of project activities at least once in a week.

2. Log books duly signed by the guide must be submitted with a project report for evaluation at the end of semester to the department.

DECLARATION

I declare that this project represents my ideas in my own words and wherever others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my project work. I promise to maintain minimum 75% attendance, as per the University of Mumbai norms. I understand that any violation of the above will be cause for disciplinary action by the Institute.

Yours Faithfully,

1. Mrunal Mahajan (41)
2. Ayush Verma (61)
3. Latish Adwani (01)
4. Vineet Chelani (17)

(Signature of Students)

Letter of Acceptance

I undersigned, **Prof. Sanjay Mirchandani** working in the Computer Engineering department, willing to guide the project titled **TarangAI: AI based Music Generator** for the mini project-I Semester III / IV respectively for the academic year 2023-24.

The names of the students are:

1. Mrunal Mahajan (41)
2. Ayush Verma (61)
3. Latish Adwani (01)
4. Vineet Chelani (17)

Prof. Sanjay Mirchandani	Prof.Vidya Zope	Dr. Nupur Giri
(Project Guide)	(Mini Project Coordinator)	(HOD Computer)

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COURSE OUTCOMES

CO No.	COURSE OUTCOME	POs covered	PSOs covered
CO1	Identify problems based on societal /research needs.	PO1,PO2,PO4	PSO1,PSO2
CO2	Apply Knowledge and skill to solve societal problems in a group.	PO1,PO2,PO4, PO5,PO6,PO8,	PSO1, PSO2
CO3	Develop interpersonal skills to work as a member of a group or leader.	PO1,PO2,PO4, PO9,PO11	PSO1, PSO2
CO4	Draw the proper inferences from available results through theoretical/ experimental/simulations.	PO1,PO2,PO4. PO5,PO6,PO12	PSO1, PSO2
CO5	Analyze the impact of solutions in societal and environmental context for sustainable development.	PO2,PO3,PO4, PO7, PO12	PSO1, PSO2
CO6	Use standard norms of engineering practices	PO1,PO2,PO4, PO12	PSO1
CO7	Excel in written and oral communication.	PO1,PO4,PO8, PO9,PO10, PO12	PSO1
CO8	Demonstrate capabilities of self-learning in a group, which leads to lifelong learning.	PO1,PO2,PO4, PO12	PSO1
CO9	Demonstrate project management principles during project work.	PO1,PO2,PO4, PO11, PO12	PSO1, PSO2

CO-PO-PSO MAPPING

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	✓	✓		✓									✓	✓
CO2	✓	✓		✓	✓	✓		✓					✓	✓
CO3	✓	✓		✓					✓		✓		✓	✓
CO4	✓	✓		✓	✓	✓						✓	✓	✓
CO5		✓	✓	✓			✓					✓	✓	
CO6	✓	✓		✓								✓	✓	
CO7	✓			✓				✓	✓	✓		✓	✓	
CO8	✓	✓		✓								✓	✓	
CO9	✓	✓		✓							✓	✓	✓	✓

SCHEDULE FOR MINI PROJECT

Date	Week	Contents	Remark	Guide Sign
12/1/24	1	Extracted notes, chords from midi files. Extracted pitch, duration, step from pretty midi.		
30/1/24	2	Worked on the data we got using music21. Worked on multi-hot vectors and used.Worked on data, created graphs for data analysis.		
5/2/24	3	Implemented LSTM model		
9/2/24	4	Used EDA Library. Created a dataset of 50 midi files.		
15/2/24	5	Learnt about CNN and LSTM		
26/2/24	6	Started implementation of LSTM		
7/3/24	7	Created dataset of midi songs according to genre		
12/3/24	8	Completed implementation of LSTM, used 50 songs data(sorted according to genre) for it.		
19/3/24	9	Increased the accuracy of LSTM model by optimizing parameters		
27/3/24	10	Integrated GUI with LSTM Model		

PROGRESS/ATTENDANCE REPORT

Title of the Project: **TarangAI: AI based Music Generator**

Group No: **22**	Name of Student 1: **Mrunal Mahajan**
	Name of Student 2: **Ayush Verma**
	Name of Student 3: **Latish Adwani**
	Name of Student 4: **Vineet Chelani**

Name of the Supervisor: **Sanjay Mirchandani**

Sr. No	Date	Progress/Suggestion					Mapping		
	Add dates	1	2	3	4		CO	PO	PSO
1	12/1/24	✓	✓	✓	✓	Extracted notes, chords from midi files. Extracted pitch, duration, step from pretty midi.	CO1	PO1, PO2, PO4	PSO1, PSO2
2	30/1/24	✓	✓	✓	✓	Worked on the data we got using music21. Worked on multi-hot vectors and used.Worked on data, created graphs for data analysis.	CO2	PO1,PO2,PO4, PO5,PO6,PO8	PSO1, PSO2
3	5/2/24	✓	✓	✓	✓	Implemented LSTM model	CO4	POQ,PO2,PO4,	PSO1,PSO2
4	9/2/24	✓	✓	✓	✓	Used EDA Library. Created a dataset of 50 midi files.	CO4	PO1,PO2,PO4,PO5,PO6,PO12	PSO1,PSO2
5	15/2/24	✓	✓	✓	✓	Learnt about CNN and LSTM	CO2	PO1,PO2,PO4,PO5,PO6,PO8	PSO1,PSO1
6	26/2/24	✓	✓	✓	✓	Started implementation of LSTM	CO4	PO1,PO2,PO4,PO5,PO6,PO8	PSO1,PSO2
7	7/3/24	✓	✓	✓	✓	Created dataset of midi songs according to genre	CO2	PO1,PO2,PO4	PSO1,PSO2
8	12/3/24	✓	✓	✓	✓	Completed implementation of LSTM, used 50 songs data(sorted according to genre) for it.	CO4	PO1,PO4,PO8,PO9	PSO1
9	19/4/24	✓	✓	✓	✓	Increased the accuracy of LSTM model by optimizing parameters	CO2	PO1,PO2,PO	PSO1,PSO2
10	27/3/24	✓	✓	✓	✓	Integrated GUI with LSTM Model	CO4	PO1,PO2,PO3	PS01,PSO2

Sign of the Supervisor

EXAMINER'S FEEDBACK FORM

Name of External examiner:_____

College of External examiner:_____

Name of Internal examiner:_____

Date of Examination:_____/____/_____

No. of students in project team:

Availability of separate lab for the project: Yes / No

Student Performance Analysis (Put Tick as per your Observation)

Excellent (3) Very Good (2) Good (1)				
Sr. No.	**Observation**	**(3)**	**(2)**	**(1)**
1	Quality of problem and Clarity			
2	Innovativeness in solutions			
3	Cost effectiveness and Societal impact			
4	Full functioning of working model as per stated requirements			
5	Effective use of skill sets			
6	Effective use of standard engineering norms			
7	Contribution of an individual's as member or leader			
8	Clarity in written and oral communication			
9	Overall performance			

- Can the same mini project extend to next semester by adding new objectives/ideas?

  (Yes/ No)

- If yes, suggest new Innovative Technique/Idea/ objectives related to this project.

Signature of External Examiner **Signature of Internal Examiner**