MOODSPHERE

AN EMOTION BASED MUSIC RECOMMENDER

AGENDA

MOODSPHERE

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PROJECT DESCRIPTION

Unlike traditional music recommenders that often rely on static factors like genres and artists, this project goes a step further by dynamically adjusting recommendations based on the user's current emotional state.

The goal is to curate playlists that resonate with the user's feelings at a given moment, creating a more engaging and relevant music experience. Using emotion analysis techniques, this project determines the user's present emotional state and suggests music that reflects those feelings. The goal of this user-centric strategy is to produce a more engaging and customized music recommendation experience.

PROBLEM STATEMENT

Conventional music streaming services frequently rely on general recommendation algorithms that ignore emotional relevance, which leaves users' emotional demands unmet. The Emotion-Based Music Recommender using Facial Recognition and Convolutional Neural Networks (CNN) project aims to combine state-of-the-art computer vision techniques in order to address this. The system uses CNNs and facial recognition technologies to accurately assess users' facial expressions for emotional indicators. The goal of this integration of sophisticated machine learning algorithms with visual data is to provide consumers with individualized music recommendations that are in line with their current emotional states, improving their listening experience as a whole.

TEAM

Bhavik Chopra

Data Scientist

Dhyey Dave

Developer

Krushil Sheladiya

Developer

Mahesh Nakka

QA Tester

TEAM

Nisarg Bhuva

Scrum Master

Shane Parmar

Product Owner

Urmil Trivedi

Developer

Vijay Devkate

Machine Learning Engineer

PERSONAS

BUSINESS ANALYSIS

MOODSPHERE

Sarah:

The Busy Professional

Background*:*
Sarah is a 32-year-old marketing executive who works long hours and travels frequently. She often experiences stress due to her demanding job.

Emotional Profile*:*
Sarah seeks music as a means of unwinding and finding solace after a hectic workday. She values tracks that induce a sense of calmness and relaxation.

Preferred Genres*:*
Instrumental tracks, Jazz for its soothing melodies, Ambient music for background ambiance, and Calm Pop for its easy-listening qualities.

MOODSPHERE

Alex:

The Energetic Fitness Enthusiast

Background*:*

Alex is a 27-year-old fitness trainer who is passionate about leading an active lifestyle. He regularly engages in high-intensity workouts to maintain his physical health.

Emotional Profile*:*

For Alex, music serves as a motivational tool during workouts. He looks for energetic beats and rhythmic tunes that can enhance his performance and keep his energy levels high.

Preferred Genres*:*

Alex leans towards EDM with upbeat tempos, Hip-Hop for its rhythmic flow, Rock for its adrenaline-pumping vibe, and Upbeat Pop for its lively tunes.

MOODSPHERE

Mia:

The Reflective College Student

Background*:*
Mia is a 20-year-old college student majoring in philosophy. She values moments of introspection and often immerses herself in thoughtful activities like reading and studying.

Emotional Profile*:*
Music is an integral part of Mia's study routine, and she looks for tracks that complement her moods. She prefers music that fosters focus and a calming ambiance.

Preferred Genres*:*
Indie music for its authenticity, Alternative tunes for a diverse sound, Acoustic tracks for their simplicity, and Chill Electronica for a relaxing background.

MOODSPHERE

Oliver:

The Busy Professional

Background*:*
Oliver is a 35-year-old artisan who spends his days crafting unique handmade items. His work requires precision and creativity, and he often seeks inspiration through various artistic outlets.

Emotional Profile*:*
Oliver values music that fuels his creative process. He looks for tracks with eclectic and innovative sounds that inspire his artistic imagination and enhance his focus.

Preferred Genres*:*
Ambient Electronic for its atmospheric sounds, Indie Experimental for its creative diversity, Classical for its timeless inspiration.

MARKET ANALYSIS

Market Overview:

- Increasing demand for personalized content experiences.
- MoodSphere offers a unique focus on emotional intelligence, standing out in a competitive music streaming market.

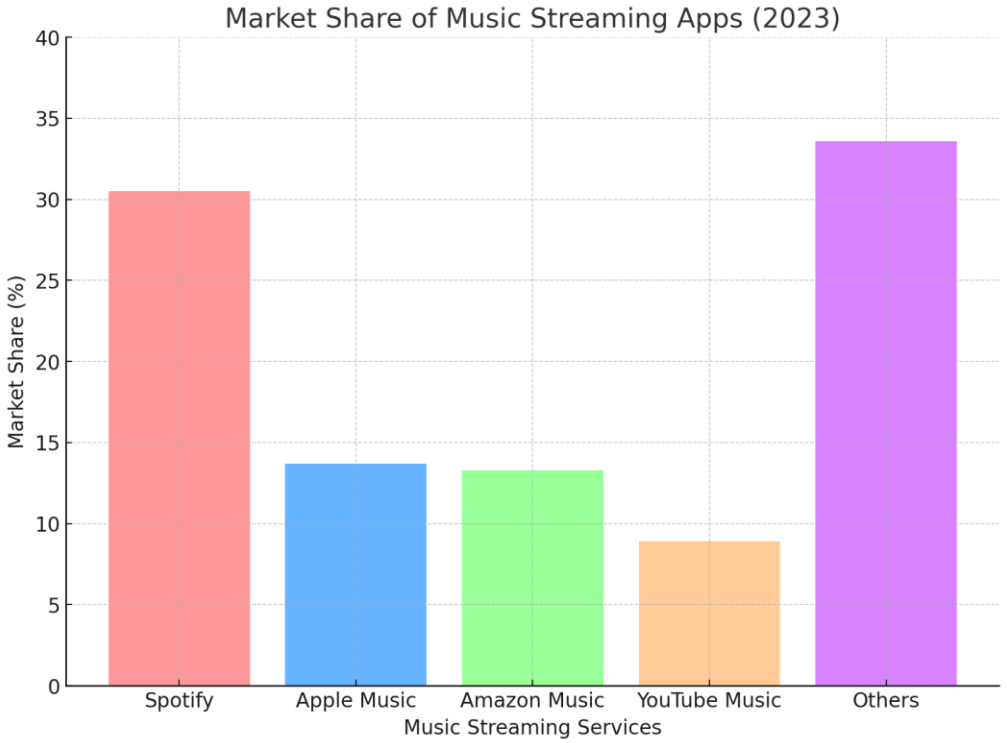
Target Audience:

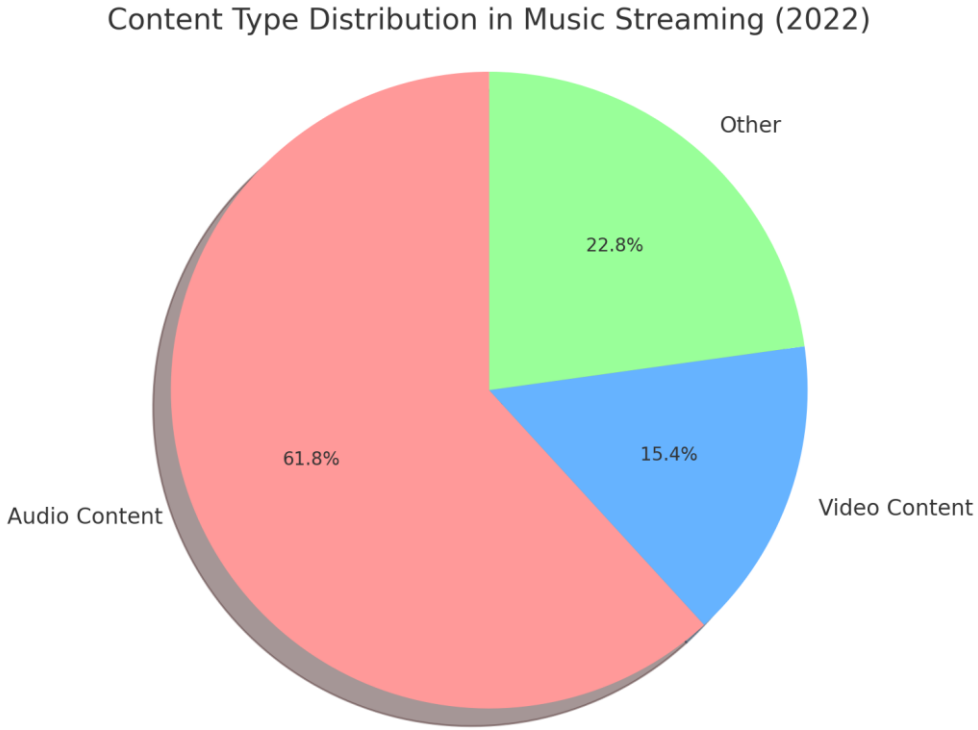
- Appeals to a wide range of demographics including professionals, fitness enthusiasts, and students.
- Designed for a global audience, transcending cultural and demographic limits.

Unique Selling Propositions (USPs):

- Utilizes facial recognition and advanced algorithms for emotionally intelligent music recommendations.
- Dynamically adjusts music recommendations based on real-time emotional changes.
- Prioritizes privacy with secure handling of facial data and customizable data sharing options.

MARKET SHARE & DISTRIBUTION





MARKET CHALLENGES

User Adoption Concerns:
Potential hesitations around facial recognition for emotional analysis highlight the need for clear, reassuring communication regarding privacy safeguards and consent-based engagement.

Navigating Established Rivals:
Transitioning users from entrenched platforms to MoodSphere demands strategic marketing initiatives that clearly articulate its distinctive advantages and emotional intelligence capabilities.

Market Approaches:

Targeted Social Media Initiatives:
Utilize social media channels for brand visibility, sharing compelling user experiences, and interacting with the community. Employ precise ad targeting to engage with niche markets and demographics.

Introductory Offers and Incentives:
Implement introductory experiences or time-sensitive incentives to invite new users to discover the application's unique value proposition, cultivating initial trust and long-term engagement.

MONETIZATION

Subscription

- Introduce a premium subscription tier with advanced features, such as unlimited access to a broader music catalog, offline listening, and exclusive emotional playlists.
- Offer tiered subscription plans with varying levels of personalization and additional perks for premium subscribers.

In-App Purchases

- Offer in-app purchases for exclusive emotional playlists curated by renowned artists, influencers, or expert curators.
- Provide users the option to buy special edition emotion-based playlists for specific occasions or moods.

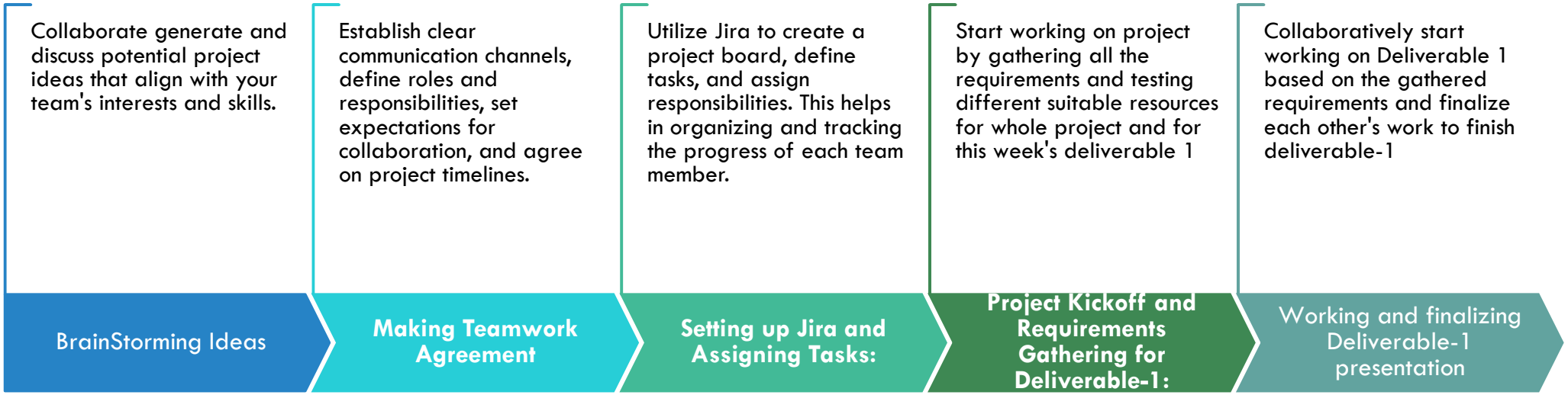
Ad-Support

- Implement a free, ad-supported version of the app with occasional advertisements between songs for users who prefer not to subscribe.
- Offer an ad-free experience as a premium feature for subscribers.

THE WAY TO GET STARTED IS TO QUIT TALKING AND BEGIN DOING.

Walt Disney

TIMELINE


Collaborate generate and discuss potential project ideas that align with your team's interests and skills.
BrainStorming Ideas
Establish clear communication channels, define roles and responsibilities, set expectations for collaboration, and agree on project timelines.
Making Teamwork Agreement
Utilize Jira to create a project board, define tasks, and assign responsibilities. This helps in organizing and tracking the progress of each team member.
Setting up Jira and Assigning Tasks:
Start working on project by gathering all the requirements and testing different suitable resources for whole project and for this week's deliverable 1
Project Kickoff and Requirements Gathering for Deliverable-1:
Collaboratively start working on Deliverable 1 based on the gathered requirements and finalize each other's work to finish deliverable-1
Working and finalizing Deliverable-1 presentation

PROJECT PLANNING

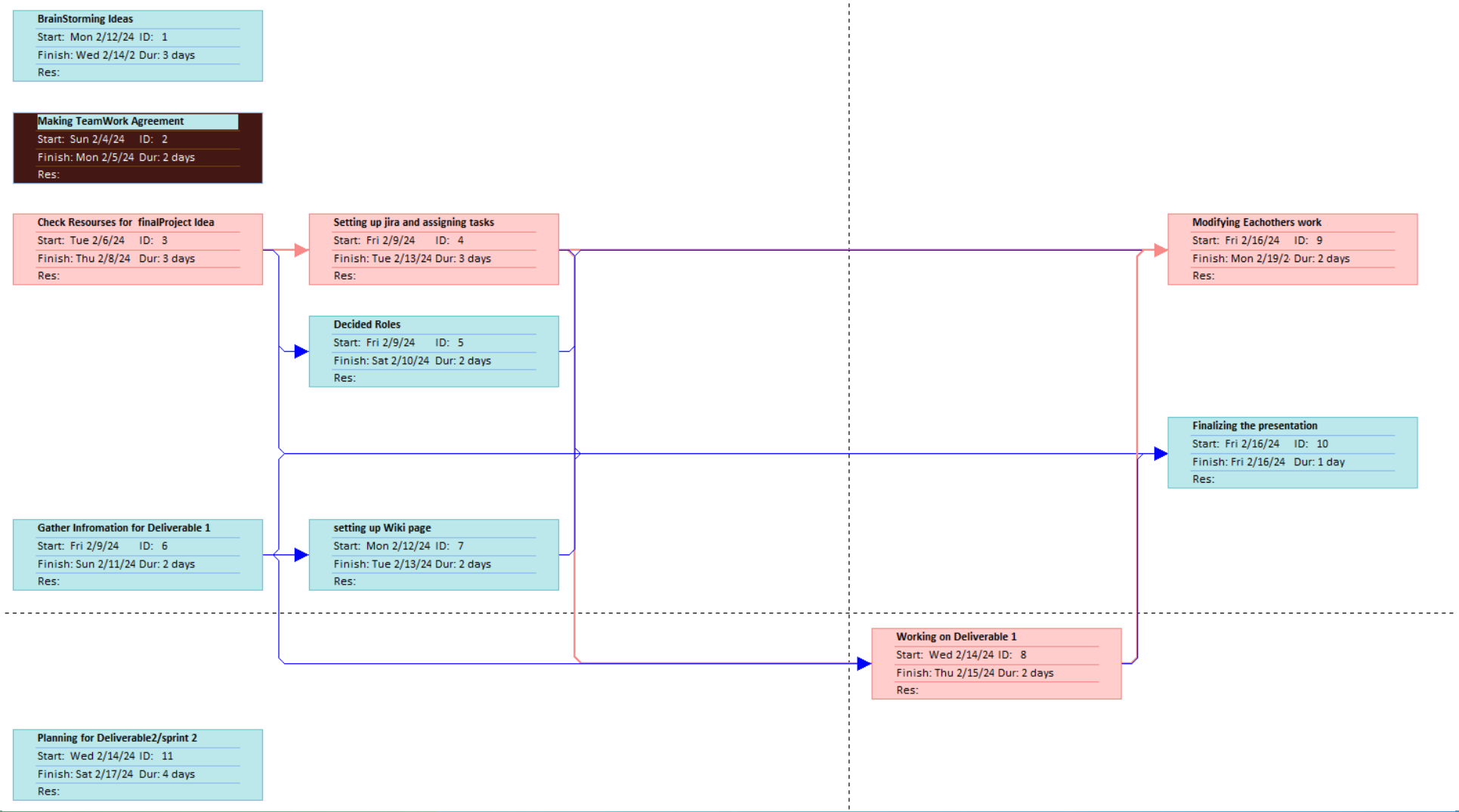
	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**Deliverable 1 Planning and Requirements Gathering**	**10 days**	**Wed 2/14/24**	**Tue 2/27/24**		
2		BrainStorming Ideas	2 days	Wed 2/14/24	Thu 2/15/24		
3		Making TeamWork Agreement	1 day	Wed 2/14/24	Wed 2/14/24		
4		Check Resourses for finalProject Idea	1 day	Fri 2/16/24	Fri 2/16/24	2	
5		Setting up jira and assigning tasks	1 day	Mon 2/19/24	Mon 2/19/24	2,4	
6		Decided Roles	1 day	Wed 2/14/24	Wed 2/14/24		
7		Project Kickoff and Requirements Gathering for deliverable 1	2 days	Tue 2/20/24	Wed 2/21/24	4,5	
8		setting up Wiki page and Technology Selection	1 day	Mon 2/19/24	Mon 2/19/24	4	
9		Working on Deliverable 1	1 day	Thu 2/22/24	Thu 2/22/24	7,5	
10		Modifying Eachothers work	1 day	Fri 2/23/24	Fri 2/23/24	9	
11		Finalizing the presentation	1 day	Mon 2/26/24	Mon 2/26/24	10	
12		Planning for Deliverable2	1 day	Tue 2/27/24	Tue 2/27/24	11	

	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
13		**Delivarable 2 Requirement Gathering and Development Phase 1**	**9 days**	**Thu 2/22/24**	**Tue 3/5/24**		
14		work on tech stack: ReactJS for the front end, Flask/Django for the backend, Firebase for hosting, and select the database.	3 days	Thu 2/22/24	Mon 2/26/24	7	
15		Design the overall system architecture, database schema, and API endpoints.	4 days	Tue 2/27/24	Fri 3/1/24	14	
16		Wireframing and UI/UX Design	1 day	Mon 3/4/24	Mon 3/4/24	15	
17		Create wireframes and mockups for the user interface.	1 day	Tue 3/5/24	Tue 3/5/24	16	

	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
18		**Deliverable-3 Development Phase and technical paper**	**20 days**	**Tue 2/27/24**	**Mon 3/25/24**		
19		Front-end Development - Part 1	2 days	Wed 3/6/24	Thu 3/7/24	14,16,17	
20		Set up the ReactJS project structure and development environment.	2 days	Tue 2/27/24	Wed 2/28/24	14	
21		Implement basic UI components, layout, and navigation.	1 day	Fri 3/8/24	Fri 3/8/24	19	
22		Backend Development - Part 1	2 days	Mon 3/11/24	Tue 3/12/24	21	
23		Set up the Flask/Django project.	2 days	Wed 3/13/24	Thu 3/14/24	14,22	
24		Implement basic API endpoints for user authentication and data retrieval.	1 day	Fri 3/15/24	Fri 3/15/24	23	
25		Facial Recognition Integration	3 days	Mon 3/18/24	Wed 3/20/24	24	
26		Research and choose a facial recognition library or API.	1 day	Thu 3/21/24	Thu 3/21/24	25	
27		Integrate facial recognition into the Flask/Django application.	1 day	Fri 3/22/24	Fri 3/22/24	26,22	
28		Implement real-time facial expression analysis.	1 day	Mon 3/25/24	Mon 3/25/24	27	

	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
29		**Deliverable-4 Testing and Deployment**	**10 days**	**Mon 3/11/24**	**Fri 3/22/24**		
30		Front-end Development - Part 2	2 days	Mon 3/11/24	Tue 3/12/24	19,21	
31		Implement user authentication and account management features.	2 days	Wed 3/13/24	Thu 3/14/24	30	
32		Backend Development - Part 2 and technical paper	2 days	Wed 3/13/24	Thu 3/14/24	22	
33		Connect the backend to the database for data storage and retrieval.	2 days	Fri 3/15/24	Mon 3/18/24	32	
34		Deployment and Optimization and technical paper	1 day	Tue 3/19/24	Tue 3/19/24	33	
35		Firebase Integration and Deployment	3 days	Wed 3/20/24	Fri 3/22/24	34	

DELIVERABLE-1 PLANNING



TECHNOLOGIES

Tensorflow

React

Firebase

Python

HTML

CSS

Django

Jira

The Retrospective - Sprint 1

RETROSPECTIVE

What went well?

As a team, we successfully adhered to a simplified set of objectives, by dividing tasks ensuring the timely completion and delivery of the expected project outcomes.

The team experienced positive collaboration and effective teamwork throughout the sprint, fostering a good working environment.

Every member of the team demonstrated proactive engagement, actively participating in tasks with clear and thoughtful contributions.

We engaged in multiple zoom sessions to address various aspects of the project keeping the minute details on point.

Throughout every meeting session, our primary focus was on making progress and ensuring the timely completion of sprints and deliverables.

By selecting Jira, the team likely experienced enhanced productivity, streamlined communication, and efficient progress monitoring throughout the task assignment process.

What can we do better?

We achieved our goal for Sprint 1, however we feel that we could've had better communication and collaboration.

Using Jira to the most would have been a plus.

Prioritizing tasks and being organized would have enhanced our productivity towards our goal.

Sticking to deadlines would have helped us finish tasks ahead of time.

Punctuality to meetings would have been a plus.

What we plan to commit for next sprint?

For the next sprint, our key commitments include enhancing collaboration tools, addressing feedback from individual team members about every tasks. Additionally, we plan to conduct a thorough review of our development process to identify areas for efficiency gains.

The team is committed to maintaining a high level of communication and adaptability to ensure successful outcomes in the upcoming sprint.

Start designing the User Interface of our project.

Regular meet-ups and updating Jira tickets.

TEAMWORK AGREEMENT

CS-691
DEVDYNASTY

INVOLVEMENT

- We shall agree that during the meet time or discussion about any crucial part all are requested to put their opinions and comments on what will be the best for the team to succeed in the outcome.
- The three moto's i.e. Trustworthiness, Truthfulness and Openness based on this value every individual shall or can have diverse perspectives, provide equal opportunity and a new ideology which can be developed towards great success of the project,instead of blaming people when issues occur.
- If the task assigned to the teammate gets undone or its tough to get complete then he must report and communicate to teammates via whatsapp/might switch to discord.

AWARENESS

- All share be aware of the discussion took place during the meeting hours and it's no one responsibilities to take care of each other some exception might be taken in state of medical emergency or sickness.
- We will communicate on the every second day to keep updated about the task distributed and its individual responsibilities to openly ask for help if needed rather wasting time which he can't persist off. This can make a smooth process for project to be on right track.
- All the deliverables or the task based on theories will only be performed via Google doc which can be given access before submitting the final copy.
- Following the task distributions, planning for the upcoming sprint, next meeting times all will be followed on a single platform i.e. Jira.

TEAM WORK AGREEMENT

Task allocation:

- The project work should be distributed according to the individual knowledge and skill which can provide actual results and can help in problem solving.
- Based on the roles assigned if the teammates failed to perform correctly and failed to met the deadline the scrum master has the right of decision making and make sure the task gets fulfilled or the teammate completes it in the next sprint.
- As respecting the privacy of every teammate timing contact unless its necessary regarding the project work.

Time Management

- The scrum master will make sure that the meeting links has been reached to everyone and everyone is readily available on same time for better coordination.
- We shall coordinate on each other's schedules to maintain consistency on working projects followed by a track on it after every discussion.

TEAM MEMBER NAMES	EMAIL-ID
Urmil Trivedi	ut24256n@pace.edu
Vijay Devkate	vd19129n@pace.edu
Dhyey Dave	dd28633n@pace.edu
Bhavik Chopra	bc04992n@pace.edu
Mahesh Nakka	mn01776n@pace.edu
Nisarg Bhuva	nb95325n@pace.edu
Krushil Sheladiya	ks84830n@pace.edu
Shane Parmar	sp91003n@pace.edu

SUMMARY

MoodSphere is an Emotion-Based Music Recommender that can be implemented by using Facial Recognition and Convolutional Neural Networks (CNN) that overcomes the constraints of conventional music streaming services by employing cutting-edge computer vision technology. Apart from the other comprehensive recommendation algorithms, our project mainly focuses on emotional based features and its relevance to recommend consumers' based on their emotional state. The reasons why we chose CNNs and facial recognition technology is to precisely evaluate users' facial expressions to emotional cues. The main motive is to tailor music suggestions by combining powerful machine learning algorithms with visual data that will be captured, therefore improving their entire listening experience.

WIKI PAGE LINK

[HOME · HTMW/2024S-DEV-DYNASTY WIKI (GITHUB.COM)]

THANK YOU

DevDynasty