

American International University-Bangladesh (AIUB)

Department of Computer Science Faculty of Science & Technology (FST) Fall 23-24

Music Solution Hub- A website related to music

Software Requirement Engineering

Sec: A

Project submitted

By

Abu Sufian Rupok (19-41314-3)

SM Hosney Arafat Rizon (20-43019-1)

Muhammad Foysal Hossain (20-43919-2)

Checked By Industry Personnel

Name: Muhammad Mufakhkharul Islam (Nasif)

Designation: Senior Software Development Manager

Company: Enosis Solutions

Sign: MmJslam_

Date: 25-12-2023

(enosis)

MUFAKHKHARUL ISLAM NASIF SOFTWARE DEVELOPMENT MANAGER

D +88 01716720904

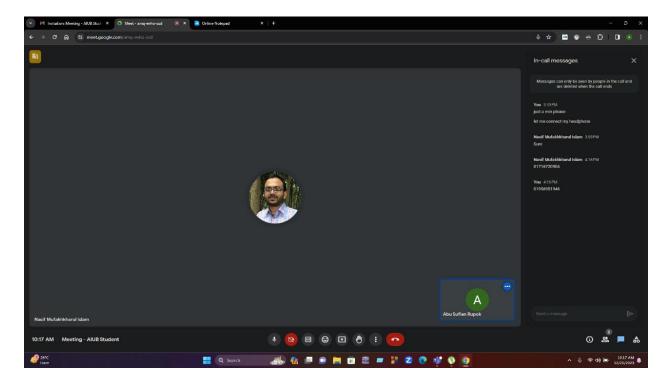
nasif@enosisbd.com

House 27, Road 8, Gulshan 1
Dhaka 1212, Bangladesh

+88 02 8836411

ENOSIS SOLUTIONS

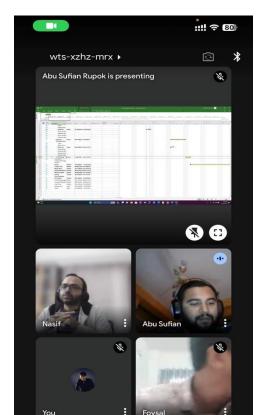
1st Meeting (21/12/2023) Time:4.00PM:

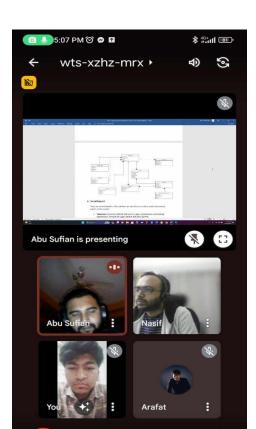


Agenda: First review of our work, Discussion on:

- 1. Project Development Scheduling
- 2. Proper Resource Allocation
- 3. Cost generation from Project Schedule

2nd Meeting (22/12/2023), Time: 5.00PM:

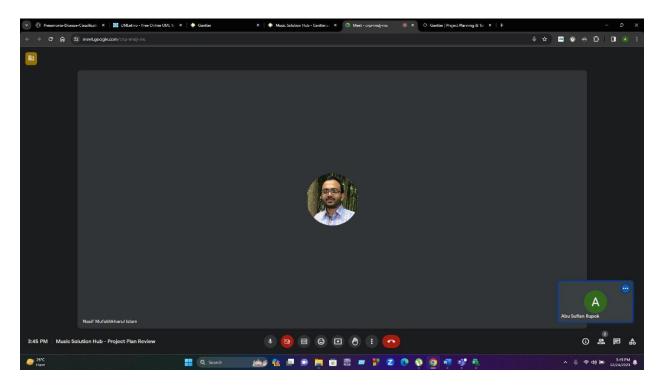




Agenda: This meeting was about:

- 1. Bug fixing of our work.
- 2. Diagram Review and Issue.

3rd Meeting (24/12/2023) Time: 3.00PM:



Agenda: This meeting was about:

- 1. Complete Review of Work.
- 2. Approval.

3. PROBLEM DOMAIN

3.1 Background to the Problem

In Bangladesh's music scene, things are quite messy. It's tough for to find work(as a musician), suitable musician for any gigs, bands/musician to perform on an event or party, qualified music teacher, qualified technician for repairing musical equipment, those musicians who can't actually reveal their talent because of good musical

equipment, fans to discover new music, and businesses to fill their spaces and many more. Imagine musicians lost in a maze, unable to find gigs or even connect with other musicians. Fans feel like they're searching for buried treasure, missing out on amazing musicians because it's hard to find them. And studios and service providers? Their calendars are like empty rooms, full of missed opportunities because they can't reach the right people.

3.2 Solution to the Problem

"Music Solution Hub"- A web application aims to fill this gap by offering a dedicated platform built specifically for the Bangladeshi music scene, offering features and functionalities tailored to local needs and preferences. Its all-encompassing nature combines various services under one platform, providing a more comprehensive user experience. It is designed to bridge the gap between musicians, music businesses, services related to music and fans in Bangladesh. It aims to create a vibrant and thriving music ecosystem by:

- 1. Connecting musicians, studios, music shops, event organizers, equipment providers, and music enthusiasts.
- 2. Enabling efficient discovery, hiring, booking, renting and purchasing of music-related services and products.
- 3. Creating a space for discussions, collaborations, and knowledge sharing within the Bangladeshi music scene.

The objective is to become the leading platform for the Bangladeshi music scene, foster a vibrant and active community of music enthusiasts. There are several benefits of using this software/website such as: increased exposure, easier gig booking, online teaching and learning opportunities, fan engagement tools, play on hire, or hire someone and having on- demand music related services for musicians and increased customer reach, streamlined bookings, efficient resource management, marketing opportunities and so on for businesses which are related to music and also many more services for general users as well. Several international platforms like BandMix, GigSalad, and Reverb serve similar purposes, but lack strong focus on specific regional music scenes. Locally, there might be smaller platforms or Facebook groups catering to specific music communities, but they often lack comprehensive features and scalability by addressing the specific challenges and opportunities within the Bangladeshi music scene, "Music Solution Hub" has the potential to become a powerful tool for growth and connection, ultimately benefiting the entire music ecosystem.

4. SOLUTION DESCRIPTION

4.1 System Features

1. Introduction:

This document outlines the software requirements for "Music Solution Hub," a web application designed to connect musicians, music enthusiasts, and music-related businesses in Bangladesh. The platform aims to address the challenges of fragmented connections, limited discoverability, and inefficient resource utilization within the music ecosystem.

2. Target Users:

- i) Musicians/Band: Individuals or bands seeking gigs, collaborations, online teaching opportunities, and fan engagement.
- ii) Practice Pad Owners: Individuals or businesses renting out practice spaces.
- iii) Studio Owners: Owners or managers of recording studios offering studio sessions and engineer services.
- iv) Music Shop Owners: Owners or managers of online or offline music stores selling musical accessories.
- v) Event Organizers: Individuals or businesses planning concerts, parties, or other musical events.
- vi) Customers: Music enthusiasts interested in discovering new music, booking services, attending events, and purchasing accessories.
- vii) Sound Engineers: Professional audio engineers offering studio recording and mixing services.

3. Functional Requirements:

3.1 User Accounts and Profiles

- i) Secure login and registration system with email or phone verification for all user types.
- ii) Each user type can manage their profile, including updating information, uploading photos/videos, and managing settings.
- iii) Musicians and bands can showcase their talents through audio samples, videos, and performance history.
- iv) Studio owners can showcase their studios with photos, equipment details, and engineer profiles.
- v) Event organizers can create detailed event pages with schedules, artist listings, ticket sales, and sponsorship opportunities.

vi) Customers can leave reviews and ratings for services, events, and equipment rentals.

3.2 Services

- Hire Musicians/Bands:
 - Customers: Filter musicians/bands by genre, instrument, location, experience, availability, and price. View profiles, attend workshops, membership of fanbase, contact directly, and securely book and pay for services.
 - ii) Musicians/Bands: Manage bookings, schedules, set pricing and package deals, offer online lessons, host workshops, and manage fanbases.
- Book Practice Pads:
- i) Customers: Filter practice pads by location, amenities, price, and availability. View photos, descriptions, reviews, and book and pay for sessions online.
- ii) Practice Pad Owners: Manage bookings, schedules, set pricing and cancellation policies, update information and photos.
 - Book Studios:
 - i) Customers: Filter studios by location, equipment, engineers, price, and availability. View photos, descriptions, engineer profiles, and book and pay for sessions online.
 - ii) Studio Owners: Manage bookings, schedules, set pricing and package deals, update information, photos, and equipment details.
 - Buy Accessories:
 - i) Customers: Browse musical accessories from online shops, filter by category, price, brand, and condition, read descriptions, reviews, and purchase with secure payment options.
 - ii) Music Shop Owners: Manage online store, add/edit products, set prices, update inventory, process orders, manage inquiries, and offer promotions.
 - Launching Musical Events:

- Event Organizers: Create and manage event pages with details, set schedules with in-built calendar, artists, ticket sales, book musicians/bands, studios, and event services.
- ii) Customers: Browse upcoming events, view details, buy tickets, and leave reviews and ratings.
 - Renting Equipment:
- i) Customers: Search for specific equipment by type, location, price, condition, and availability, book and pay for rentals or purchases, rate and review providers.
- ii) Equipment Providers: List equipment for rent or purchase, set pricing and conditions, manage bookings, communicate with clients, and offer subscription service plans.
 - Repairing Equipment:
- Customers: Filter technicians by location, equipment type, service category, rating, and price, view profiles, qualifications, reviews, request service, track repairs, and rate and review service.
- ii) Technicians: Update information, receive and review service requests, provide custom quotes, confirm appointments, communicate with customers, manage service offerings, and track and provide information on repair progress.

3.3 Additional Features

- In-app messaging system for communication between users.
- Payment platform

4. Non-Functional Requirements:

4.1 Performance:

- Responsiveness: The platform should be responsive and load pages quickly on both desktop and mobile devices later on.
- Scalability: The system should be able to handle increasing traffic and data volume without significant performance degradation.
- Availability: The platform should be highly available with minimal downtime to ensure uninterrupted service for users.

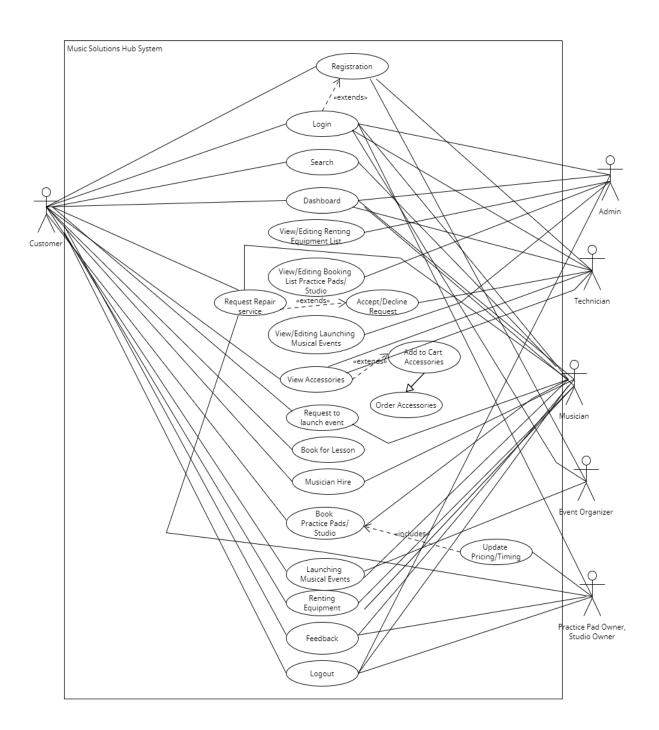
4.2 Security and Privacy:

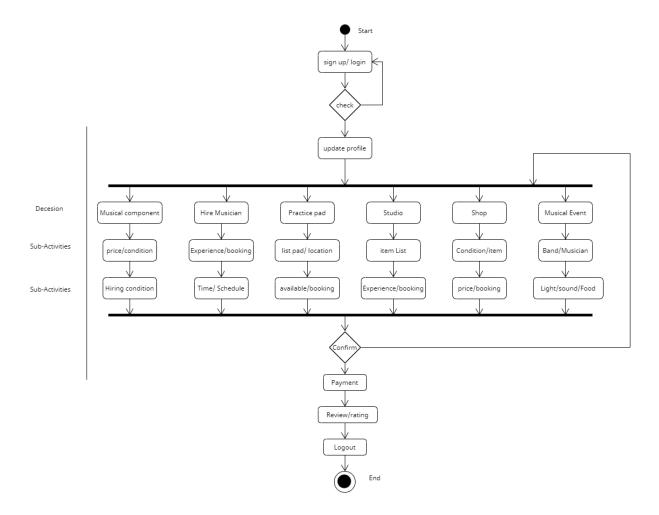
- User data security: User data, including personal information and financial details, must be securely stored and protected against unauthorized access and breaches.
- Privacy protection: User privacy should be respected by implementing industry-standard privacy safeguards and allowing users control over their data.
- Secure transactions: The platform should facilitate secure payment processing for bookings, purchases, and rentals.

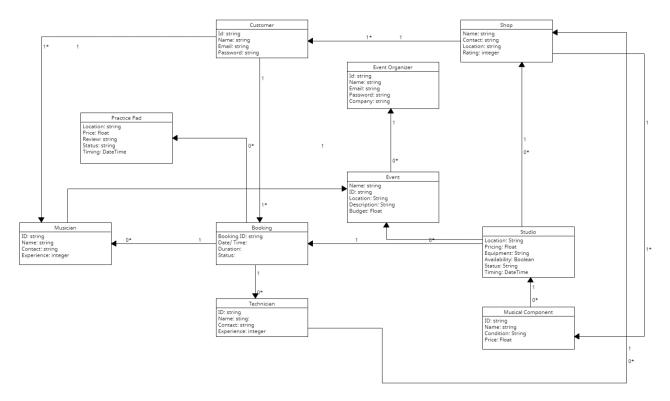
4.3 Usability and Accessibility:

- Intuitive interface: The user interface should be intuitive and easy to navigate for users of all technical skill levels.
- Accessibility: The platform should be accessible to users with disabilities and comply with relevant accessibility standards.
- Localization: Consider offering localized versions of the platform interface and content to cater to diverse user needs.

5. UML Diagrams







6. Social Impact

There are several benefits of this platform for user classes as well as social and cultural aspects in our country:

- Musicians: Increased visibility and access to gigs, collaborations, and teaching opportunities. Potential for higher income and career growth.
- **Practice Pad Owners:** Enhanced occupancy rates and improved utilization of practice spaces. More streamlined booking and payment processes.
- **Studio Owners:** Better booking management, increased client base, and potential for higher revenue. Improved visibility and reputation of studios.
- **Music Shop Owners**: Increased online sales and customer reach. Enhanced brand awareness and marketing opportunities.
- Event Organizers: Simplified event planning and execution through centralized booking of musicians, studios, and services. Potential for attracting larger audiences and higher ticket sales.
- **Customers:** Enhanced music discovery and easier access to quality services. Convenient booking and payment options. Improved event planning and attendance.
- **Band/Musician Groups:** More efficient collaboration and communication within groups. Effective fan management and engagement tools.
- **Sound Engineers:** Increased visibility and access to work opportunities. Efficient client communication and booking management.

- **Community Building:** Fostering a stronger music community by connecting musicians, fans, and businesses. Creating opportunities for collaboration and knowledge sharing.
- **Cultural Impact**: Promoting a vibrant and diverse music scene in Bangladesh. Enhancing cultural expression and appreciation.
- **Economic Growth:** Generating new jobs and businesses within the music industry. Contributing to the local economy.
- **Technology Adoption:** Encouraging the use of digital platforms and online services for booking, communication, and payments.
- **Social Impact:** Providing positive outlets for creative expression and community engagement. Potentially reducing crime and social delinquency.

7. Development Plan with Project Schedule

7.1. Planning:

- i) Defining project scope
- ii) Conducting feasibility study
- iii) Creating project plan
- iv) Assembling the project team.

7.2. Requirements Analysis:

- i) Gathering user requirements
- ii) Documenting functional requirements
- iii) Identifying and documenting non-functional requirements

7.3. Design:

- i) Developing User Interface (UI) prototypes
- ii) Creating system architecture
- iii) Documenting technical specifications.

7.4. Development:

- i) Implement core functionalities: Start with building the essential features for each user role, prioritizing functionalities with the highest impact and user value.
- ii) Adopting an iterative approach
- iii) Utilizing version control system

7.5. Testing:

- i) Conducting unit testing and integration testing
- ii) Fixing bugs and issues.

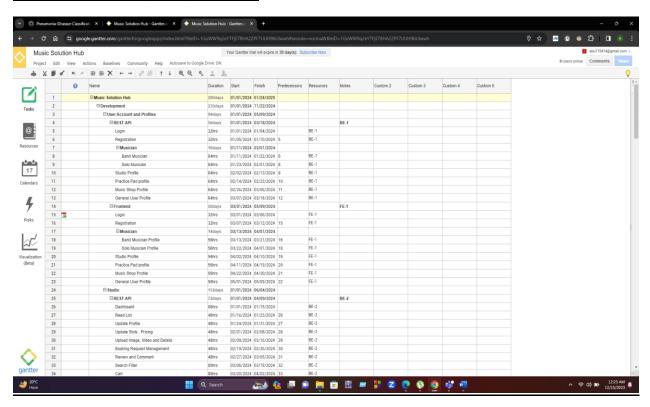
7.6. Deployment:

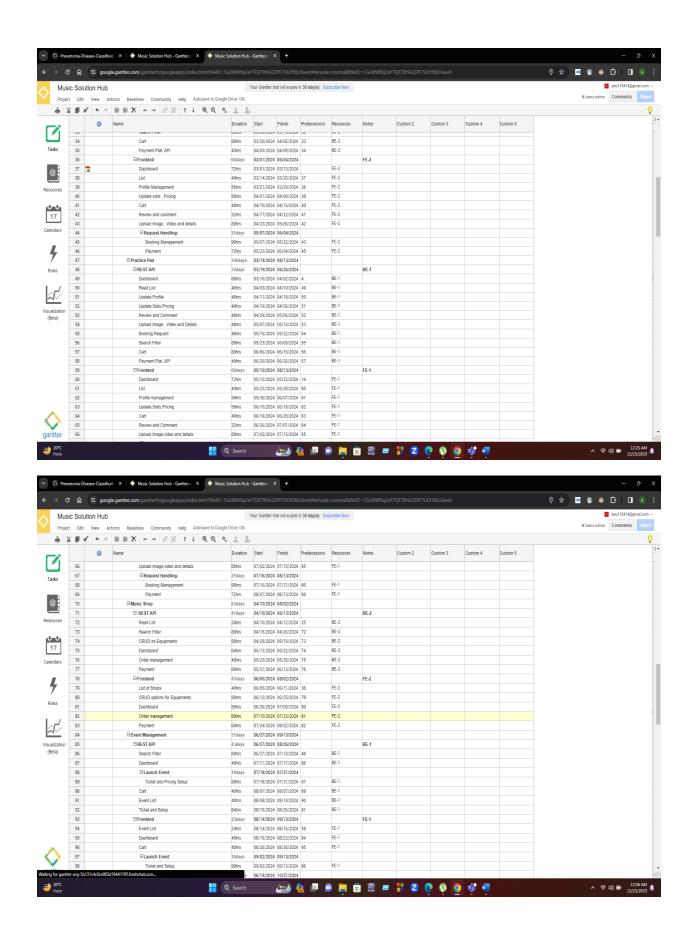
- i) Choosing a hosting platform
- ii) Implementing CI/CD pipeline
- iii) Launching the platform

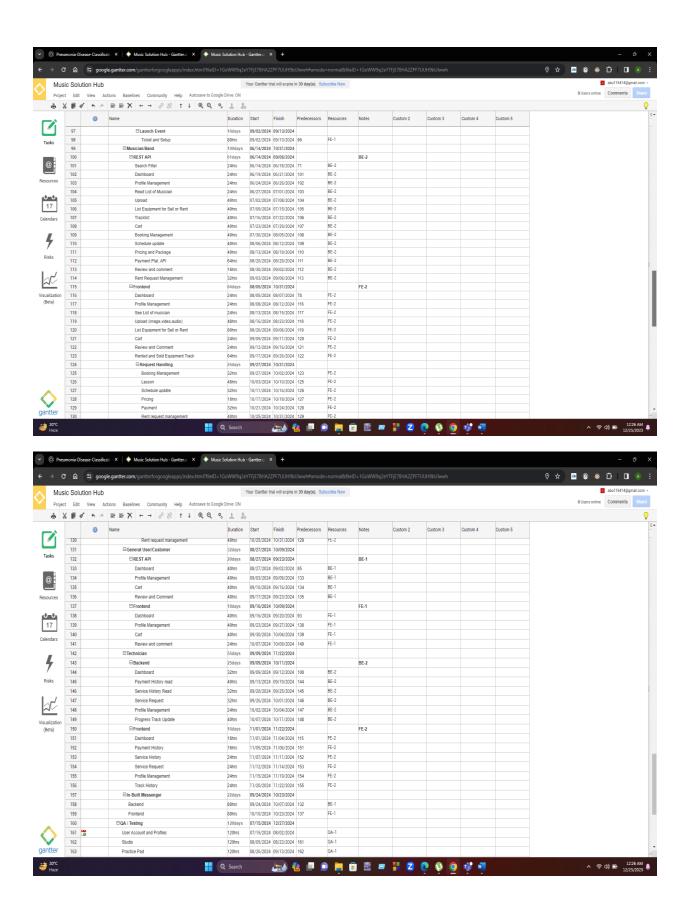
7.7 Maintenance:

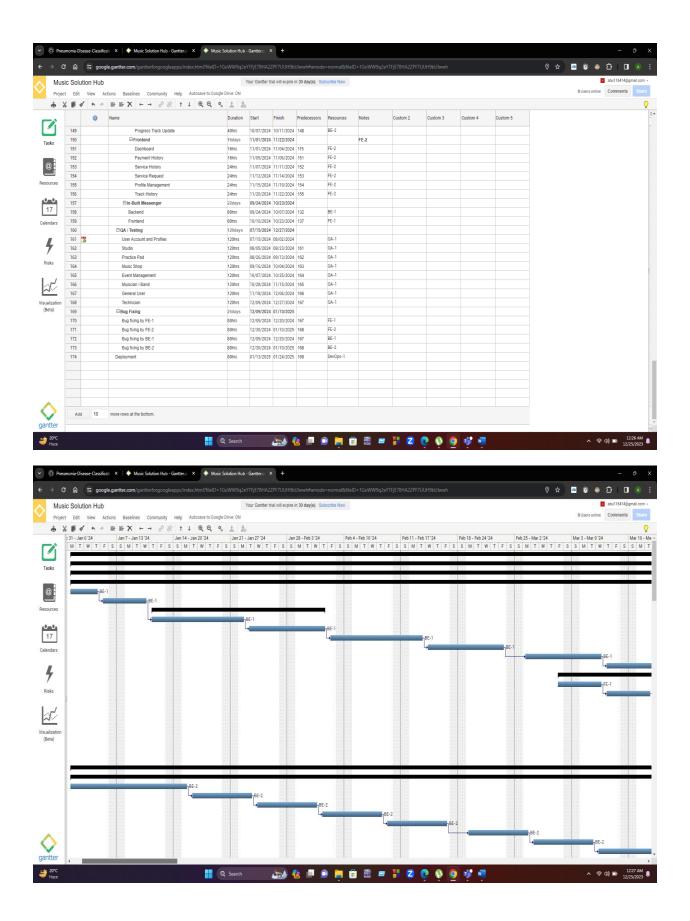
- i) Monitor performance and usage
- ii) Provide ongoing support
- iii) Implement updates and improvements.

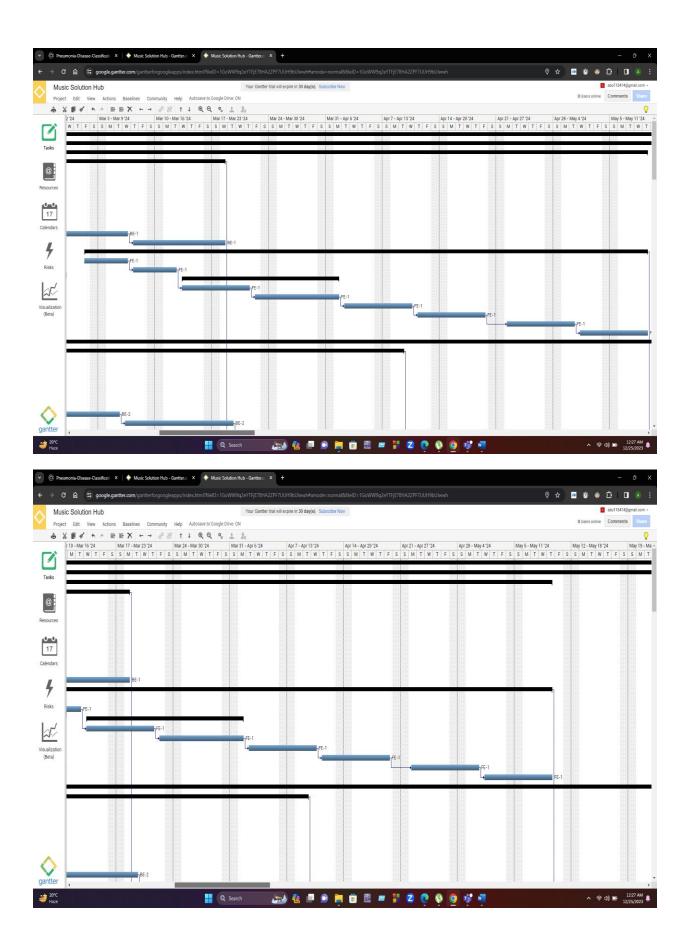
7.8 Project Scheduling using 'Gantter':











8. Marketing Plan

8.1 Short-Term Marketing Plan (0-6 months):

- 1. Launching the product by triggering the customers. organize an online/offline launch event featuring local musicians, influencers, and key stakeholders.
- 2. Securing the coverage in local media outlets through press releases and targeted outreach.
- 3. Utilizing social media platforms like Facebook, Instagram, and YouTube to create engaging content showcasing platform features and user testimonials.
- 4. Running targeted social media ads and influencer collaborations to reach the right audience.
- 5. Offering free trials or special launch discounts to incentivize platform registration and usage.
- 6. Hosting workshops and webinars educating users on platform features and benefits.
- 7. Running a referral program to encourage existing users to invite their network.
- 8. Starting an active forum for discussions, Q&A, and collaboration.
- 9. Organizing online and offline events (jam sessions, open mic nights) to foster connections and community spirit.
- 10. Having partnership with local music schools and organizations for cross-promotion and engagement.

8.2 <u>Long-Term Marketing Plan (6 months onwards):</u>

- 1. Create and share valuable content like artist interviews, behind-the-scenes studio sessions, equipment reviews, and music tutorials.
- 2. Launch a blog featuring original articles, guest posts, and industry insights.
- 3. Host podcasts or live streams featuring prominent musicians and industry professionals.
- 4. Collaborate with music brands, instrument manufacturers, and event organizers for joint marketing initiatives.
- 5. Offer sponsored content opportunities on the platform to relevant brands.
- 6. subscription plans for musicians and businesses, and premium features.
- 7. Offer targeted advertising opportunities on the platform without compromising user experience.
- 8. Conduct regular user surveys and feedback sessions to gather insights and improve platform features.
- 9. Analyze user data to personalize recommendations and optimize platform functionality.
- 10. Stay updated on industry trends and integrate new features to retain user engagement.

8.3 Continuous Marketing Plan:

- 1. Organizing themed events, music competitions, and gear giveaways to keep users excited.
- 2. Sharing user-generated content, highlight success stories, and run interactive polls and quizzes.

- 3. Implementing loyalty programs with exclusive benefits and discounts for long-term users.
- 4. Offering responsive and helpful support to answer user queries and address concerns promptly.
- 5. Track key metrics like user registrations, active users, bookings, event attendance, revenue generated, and social media engagement.
- 6. Analyze user feedback and platform usage data to identify areas for improvement.
- 7. Regularly adapt and refine marketing strategies based on data insights and audience response.

9. Cost and Profit Analysis

9.1 Cost Analysis:

Total Project Timeline Estimation: 9 months and 10 days = 2240 Hours (working)

Resource Estimation: in BDT

We will use the following resources for this project:

- 1. Server = 2,00,000
- 2. Computer = 1,00,000*5 = 5,00,000
- 3. Internet connection & communication 80,000 + 40,000 = 120,000
- 4. Food $5{,}000*8 + 3{,}500 = 43{,}500$
- 5. Generator = 3,00,000

Total cost is = 1,163,500 Taka

Total Cost Estimation:

Total resource cost = 1,163,500

Marketing cost= 50,000

• Employee's salary:

I will allocate 2 Frontend Engineer, 2 Backend Engineer 1 Quality Assurance, 1 DevOps for the following project.

Frontend Hourly wage = 800BDT and Works 8 hours a day.

Backend Developer Hourly Wage = 900BDT and Works 8 Hours a day.

Quality Assurance Hourly Wage = 500BDT and Works 8 Hours a day.

DevOps Hourly Wage = 1000BDT and Works 8 hours a day

Cost of QA = (960 Hours * 500 BDT) = 480000 BDT

Cost of Frontend = (1432 Hours* 2 * 800BDT) = 2291200 BDT

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Cost of Backend = (3064 Hours * 900BDT) = 2757600BDT
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Cost of DevOps = (80 Hours * 1000BDT) = 80000BDT

Total Wage: (480000+2291200+2757600+80000) = 5608800BDT

Total cost = (5608800 + 1,163,500) = 6,772,300 BDT

Budget estimation:

Total budget = $6,772,300 \sim 6,800,000 \text{ BDT}$

9.2 Profit Analysis:

- 1. Commission Fee from Shops, Technician, Musician, Renting and Selling Equipment
- 2. Subscription
- 3. Advertisement
- 4. Workshop Hosting charges
- 5. Premium Features (Boosting Musician's profile)
- 6. Event Ticketing charges
- 7. Partnership with Music Schools, Instrument Manufacturer and so on
- 8. Collecting and Implement Valuable user insights.

10 Reference

- 1. Project Management File https://drive.google.com/file/d/1-triadc4j4J1ceGrlhqNRZb6UXvNzCVQ/view?usp=drive_link
- $2. \quad \underline{https://drive.google.com/file/d/1eVZWCzeIgmNRLaF1aVXmByDT0sNPqZFD/view?usp=sharing} Physical Signature$