**Project Design Phase-II**

**Technology Stack (Architecture & Stack)**

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| Date | 7 APRIL 2025 |
| Team ID | SWTID1743254297 |
| Project Name | TUNETRAIL- YOUR PATHWAY TO PERFECT PLAYLIST |
| Maximum Marks | 4 Marks |

**Technology Stack**

Here’s the chosen technology stack categorized by the development layer:

**Frontend**

* React.js: Component-based UI development
* Tailwind CSS: Fast, utility-first styling
* Axios: For handling HTTP requests

**Backend**

* Node.js: Runtime environment
* Express.js: RESTful API development
* JWT (JSON Web Token): For user authentication
* Bcrypt.js: For secure password hashing

**Database**

* MongoDB (Atlas): NoSQL document-based storage
  + Collections: Users, Songs, Playlists, Subscriptions, Artists

**Cloud & Storage**

* Firebase Storage or AWS S3: For storing music files and album art
* Cloudinary: Optional, for handling media transformations

**Deployment**

* Vercel / Netlify: For deploying frontend
* Render / Railway: For backend and server hosting

**Testing Tools**

* Postman: For API testing
* Jest & React Testing Library: For frontend unit testing

**Analytics & Monitoring**

* Google Analytics: User activity monitoring
* MongoDB Charts / Custom Dashboards: For artist stats and admin insights