



**TED UNIVERSITY**

**Senior Design Project I**

**PROJECT NAME**

NextRoute

## **Project Specifications Report**

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# 1. Introduction

In contemporary society, young tourists have expressed a need to go beyond the conventional sightseeing tours. They want something different, something unique that is compatible with their hobbies, whether in arts, music, cuisine, sports or any other extreme entertainment activity. However, the problem comes when one has to find activities, places to stay and what is going on in the area, it's very hard and takes a lot of time.

The objective of the project is to fill this void by creating a relevant tourism service for young users. With the aid of artificial intelligence (AI), the platform will generate personalized travel plans for users programming and targeting their interests in events, cultural activities, and local food, among others. We also have cheaper options and special offers available for students just to make traveling easy and cheap for the youths.

## 1.1 Description

Our platform offers young travelers a personalized tourism experience through the power of artificial intelligence. Users can select their interests, such as art, history, music, or food, and receive tailored travel itineraries featuring events and activities that match their preferences. In addition to these custom itineraries, users can also access local events, concerts, and festivals that align with their travel dates, enhancing their experience with real-time recommendations.

Through NextRoute, users will gain access to activities, venues, and entertainment areas worldwide based on their chosen travel dates. Exclusive discounts for young users will also be provided. For example, if a user loves trying new flavors and has free time in November, NextRoute will recommend the best location, activities, and suitable hotels for their trip. Whether it's a cultural vacation, a nature getaway, or a winter holiday, our platform ensures every journey is aligned with the traveler's interests.

We also offer accommodation options tailored to different budgets, making the travel experience more flexible and affordable. A student verification system is integrated into the platform, allowing young travelers to access special discounts and promotions.

The platform provides a collaborative environment for hotels and businesses to promote their services. Hotels can join the platform to offer special discounts and targeted campaigns for young users, which will be seamlessly integrated into users' travel plans. This feature encourages budget-friendly travel and enhances decision-making, fostering a mutually beneficial ecosystem for both travelers and stakeholders in the tourism industry.

## 1.2 Constraints

In the process of NextRoute platform development, several critical issues should be addressed:

- **Economic Constraints:** Substantial advancements in AI technologies and the development of a database management system, among other requirements, are needed for this project. Also, some local business and tourism service providers are less likely to be engaged because the regional price levels and regional economies range largely in their approaches. Another problem of this kind that is faced is offering inexpensive options and at the same time making profits.

- **Social Constraints:** There will be a need to take care of issues of culture and the preferences of the travelers. Whenever used, it is imperative that such options be available, as would be considerate of the cultural practices and refrain from any activities that could be deemed inappropriate in certain cultural setups.

- **Ethical Constraints:** The platform must respect user data without compromising its purpose. Protection of privacy and personal data is a must and user's data must not be made available in any way that contravenes the global laws on data such as the GDPR. Also, the platform must avoid engaging in promotion of user's luvs commercial interests in an egregiously unethical manner.

- **Manufacturability Constraints:** A strong backbone must be established in the system to allow for the expansion of the user base in different geographic locations without incidences of compressing the core values of the platform. In addition, the management of the user experience in the seamless usability of the service must encompass all partnering accommodation services, local retailers, and event hosting entities.

## 1.3 Professional and Ethical Issues

While building the NextRoute platform, the team is bound by a set of professional and ethical obligations:

- **Data Privacy and Security:** User's privacy is a core concern. NextRoute must observe international regulations such as the data protection act on how personal information is collected, kept and utilized. In order to keep the platform users' trust, it is also important to handle their preferences and travel history with care.

- **Transparency in AI Recommendations:** The platform's AI system should be transparent in how it generates personalized travel recommendations. Users should

understand why certain destinations, activities, or accommodations are suggested to them, preventing biases and promoting fairness.

- **Promotion of Responsible Tourism:** NextRoute has an obligation to motivate its users towards responsible tourism practices. This includes, but is not limited to, limiting the impact on the environment, tolerance of the local culture and way of life, and patronizing local enterprises. The platform should avoid promoting unsustainable or harmful travel practices.

- **Collaboration with Partners:** Establishing partnerships with local businesses and hotels must be done ethically, ensuring that no exploitation occurs. The platform must be transparent with its users about partnerships, promotions, and discounts, maintaining integrity in its relationships with both users and businesses.

## 2. Requirements

- Through the use of an advanced programming interface, an A.E. based itineraries modification engine is intended to be created in accordance with users' tastes and preferences. Such an api will also recommend leisure activities, lodging changes or searching for other facilities compatible with the users' interests while constantly scrutinizing the users' information statistics to enhance the suggestions presented. - Guidebook on the inclusion of a student validation system aimed at giving tailored rate cuts.
- User-friendly interface for young travelers which helps them plan and modify their trips within no time.
- Current information on local events and activities happening near the area.
- GDPR and other relevant regulations will be taken into account to protect sensitive information.
- Ensuring data privacy and security in compliance with GDPR and other relevant regulations.
- Ability to grow with a larger audience and being open to other parts of the world.

## 3. References

- ACM Code of Ethics and Professional Conduct
- The Software Engineering Code of Ethics, IEEE Computer Society
- IEEE Code of Ethics
- Computer and Information Ethics, Stanford Encyclopedia of Philosophy

- Zhang, S., Yao, L., Sun, A., & Tay, Y. (2019). "Deep learning based recommender system: A survey and new perspectives." *ACM Computing Surveys (CSUR)*, 52(1), 1-38.