GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
Department of Computer Science & Engineering
Statement of Purpose – Major Project-I

1. Title of the Project:

SMART NETWORK FOR STUDENT ESSENTIALS

2. Abstract:

This project aims to build a web-based platform that integrates key student services—such as house rentals, food delivery, online courses, academic resources, and placement preparation—into a single, accessible interface. It is designed to streamline both daily life and academic development for students. Built using React.js for the frontend and Node.js/Express or Django for the backend, the platform utilizes MongoDB for data storage and integrates APIs for geolocation, payments, and learning modules. The final product will be a user-friendly, all-in-one solution to enhance student convenience, skill-building, and career readiness.

3. Objectives:

- Provide a unified platform to access essential student services like housing, food, academics, and career tools.
- Simplify and centralize daily tasks and academic support to reduce time and effort.
- Support continuous learning through integrated online courses and academic resources.
- Enhance placement preparation with curated content and tools for career readiness.

4. Introduction / Problem Statement:

Students often face challenges managing various aspects of their daily lives and academic journey, such as finding accommodation, accessing food, attending online courses, preparing for placements, and locating study materials. Currently, these services are scattered across different platforms, leading to inefficiency and wasted time. This project aims to solve this problem by offering a centralized, web-based solution that caters to all essential student needs in one unified interface.

5. Expected Input & Expected Output:
Expected Inputs:

- User details: name, location, preferences (e.g., food, housing)
- Search queries for rentals, courses, or academic resources
- Uploaded documents (e.g., resumes or academic notes)

Expected Outputs:

- List of rental properties based on geolocation and preferences
- Recommended food delivery options
- Access to selected online courses and academic resources

- Placement preparation material and mock test results
- Dashboard showing user activity and progress

6. Proposed Methodology / Techniques to be Used:

- **Frontend:**
  - A responsive and user-friendly interface will be developed.
  - The UI will adapt across devices (mobile, tablet, desktop) to enhance user experience.
- **Backend:**
  - A server-side application will be created to handle API requests, manage user sessions, and process business logic.
  - It will serve as the core system connecting the frontend, database, and external APIs.
- **Database:**
  - A NoSQL database will be used to store and manage structured and unstructured data such as user profiles, listings, learning content, and transaction details.
  - The database will support efficient read/write operations and easy scaling.
- **Security Measures:**
  - **JWT (JSON Web Token):** Used for secure user authentication and session management.
  - Sensitive operations and data transfers will be protected to prevent unauthorized access.

7. Novelty / Contribution:

- Combines **multiple core student services into one platform** — unlike existing apps that focus on single domains (e.g., only food delivery or courses).

- Integrates **academic resources with real-time services** like housing and food, uniquely tailored for students.

- Provides **personalized recommendations** and a smart dashboard to track learning, housing, and placement progress.

- Supports **career growth and convenience**, making it a holistic solution for student life management.

8. Dataset Description (if applicable):

- **Online Courses**: Metadata from APIs or open-access platforms (course name, duration, category).

- **Academic Resources**: Uploaded by users or fetched from open educational repositories (PDFs, notes, quizzes).

- **Placement Resources**: Manually curated or integrated from prep platforms (mock tests, aptitude questions, resume templates).

9. Expected Outcomes / Deliverables:

- A fully functional **web application** for student service integration
- **Dashboard** displaying rentals, food orders, course progress, and placement tools
- Secure **authentication system** and payment gateway integration
- Admin panel for managing listings, users, and content
- Project documentation and deployment on cloud hosting (e.g., AWS, Vercel)

10. References / Tools & Technologies :

- **Frontend Development Tools:**
  Utilized to design a responsive and interactive user interface compatible with various screen sizes.
- **Backend Development Environment:**
  Server-side scripting tools and frameworks were used to handle business logic, user sessions, and API requests efficiently.
- **Database Management:**
  A **NoSQL database** was employed to manage dynamic data such as user information, content listings, and transaction records with scalability and flexibility.
- **Authentication Mechanism:**
  JWT (JSON Web Token) was used to securely manage user authentication and protect sensitive routes.
- **API Communication:**
  RESTful APIs were implemented to enable smooth communication between the frontend, backend, and third-party services.
- **Payment Gateway Integration:**
  APIs such as **Razorpay** or **Stripe** were integrated to manage secure online transactions for subscriptions or purchases.
- **Geolocation Services:**
  The **Google Maps API** was used to enable real-time location features such as displaying nearby services or user location detection.

References:

- MongoDB Documentation — For database structure and querying
- JWT.io Documentation — For authentication and token-based security
- REST API Design Guidelines — For building and integrating web APIs
- Stripe API Docs / Razorpay API Docs — For payment system integration
- Google Maps API — For geolocation and map services

Note :

1. **All the supervisors are requested to provide the seed paper to the 7th sem research projects and expected they find read thoroughly.**

Signature of the student **Signature of the supervisor**