Project Nexus – Application Documentation

This is an Ultimate Campus Super- app where we have integrated all day to day campus requirement task, student needs, necessary inquiries, Parent-student concerns and many more. It versatile nature and uniqueness gives it the exact and extraordinary smooth interface.

1. Overview

Project Nexus is a browser-based campus super-app prototype built using:

- HTML
- CSS (Bootstrap + custom styling)
- JavaScript
- LocalStorage (for saving data)

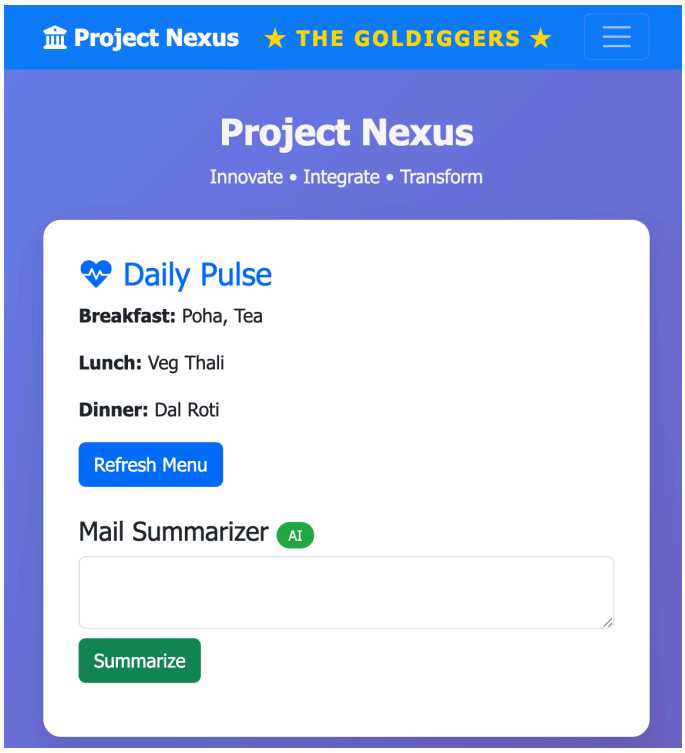
It simulates a unified digital platform that connects different aspects of student life into a single interface, including:

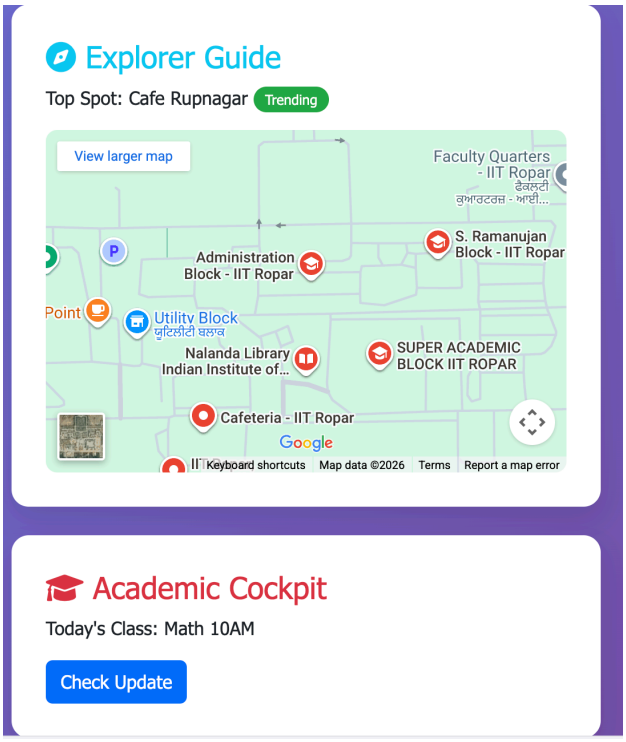
- Daily mess information
- AI mail summarization (simulated)
- Lost & Found system
- Marketplace
- Travel sharing
- Explorer guide
- Academic cockpit
- Wellness & safety tools
- Admin panel controls

This version in the prototype version is just **frontend-only simulation**, meaning:

- No database server
- No backend APIs
- Data stored locally in the browser

This version also have an **in-built AI Chatbot**





2. System Architecture

2.1 Technology Stack

Component	Technology Used	Purpose
UI Layout	HTML + Bootstrap	Structure and responsive design
Styling	CSS + gradients	Visual experience
Icons	FontAwesome	UI enhancement
Logic	JavaScript	App functionality
Storage	LocalStorage	Saves user data in browser

3. Application Modules

The app is divided into four main pillars based on the hackathon requirements.

4. 1️⃣ The Daily Pulse Module

Features

- Live mess menu display

- Nutritional information
- Dietary filters
- Crowd rating
- AI mail summarizer
- Weather/WiFi status (static display)

How It Works

Mess Menu

- Data is stored in local storage as an object:
    - breakfast
    - lunch
    - dinner
    - nutrition
    - filters
    - rating

When page loads:

- Load menu reads stored data
- Updates UI automatically

Admin Control

Mess in-charge can update:

- Breakfast
- Lunch
- Dinner
- Nutrition info
- Filters

Through the admin form.

Data flow:

- Admin inputs → Saved to localStorage → UI auto refresh

AI Mail Summarizer (Simulated)

Function: `summarizeMail()`

How it works:

- Reads email text input
- Detects keywords:
  - "urgent"
  - "deadline"
  - "event"
- Displays a smart summary

This simulates:

- NLP classification
- Priority detection
- Action extraction

5. 2️⃣ The Student Exchange Module

Features

- Lost & Found reporting
- Buy/Sell marketplace
- Travel sharing
- Skill exchange idea section

How It Works

Lost & Found

Function: `reportLost()`

Process:

```
User enters item → Saved to localStorage → Displayed in list
```

Data stored as:

```
lostItems = [ "Wallet", "ID Card", "Keys" ]
```

Marketplace

Function: `addToMarket()`

Allows students to:

- Add items for sale
- View current listings

Simulates:

- Peer-to-peer selling
- Semester resale culture

Travel Sharing

Function: `shareTrip()`

Students can post:

- Destination
- Time
- Trip details

Used for:

- Cab pooling
- Cost splitting
- Ride coordination

6. 3️⃣ The Explorer's Guide Module

Features

- Nearby place suggestions
- AI trending tags
- Google Maps embedded view

How It Works

- Static recommendations shown
- Map embedded using iframe

- Shows navigation preview

Future upgrade potential:

- Real GPS tracking
- Location suggestions
- Distance prediction

7. 4️⃣ The Academic Cockpit Module

Features

- Timetable display
- LMS-style assignment panel
- Academic insights

Simulated intelligence:

- Study plan suggestion
- Grade prediction badge

Purpose:

- Central academic dashboard

8. Wellness & Safety Module

Includes:

Wellness

- Mental health tips
- Reminder alerts

Safety

- SOS button simulation
- Emergency alert UI

These simulate:

- Campus safety system

- Notification triggers

9. Admin Panel

Access:

- Button in navbar

Controls:

- Update mess menu
- Modify food details

Visibility:

`Hidden by default → Toggle using Admin Panel button`
Role concept:

- Student: view only
- Admin: update menu

10. User Interface Controls

Navbar Actions

Button	Function
Dark Mode	Switch theme
Login	Simulated login
Admin Panel	Show admin tools

11. Dark Mode System

Function: `toggleDarkMode()`

What it does:

- Adds/removes `dark-mode` CSS class
- Changes entire UI theme

12. Notifications System

Function: `showNotification()`

Used for:

- Menu updates
- Lost item added
- AI summary complete
- Marketplace updates

Position:

- Top-right floating alert

13. Data Storage Method

All dynamic content is saved in:

Local Storage

Examples:

- Mess menu
- Lost items
- Marketplace items
- Trips

Advantages:

- Works offline
- No server needed

Limitation:

- Data stored per device only

14. AI Components (Simulated)

Currently simulated using keyword logic.

Future real AI integration:

- Mail summarization using NLP
- Event classification

- Smart recommendations
- Crowd prediction

15. User Roles

Student

- View info
- Add lost items
- Sell items
- Share trips

Admin

- Update mess menu
- Manage content

16. Real-World Scalability Plan

If converted to full product:

Add:

- Backend (Node.js)
- Database (MongoDB)
- Authentication system
- Real AI APIs
- Live notifications

17. Key Strengths of This App

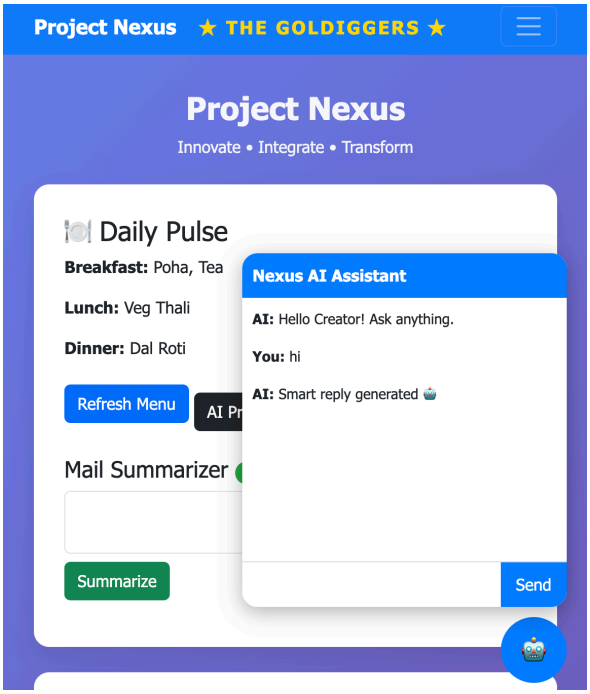
- Unified campus ecosystem
- Clean modular design
- Expandable architecture
- AI-ready framework
- Offline functional prototype

18. Limitations (Current Version)

- No backend database
- No real authentication
- AI is simulated
- Data device-dependent

19. Future Enhancements

- Real-time mess crowd analytics
- Cab pool auto-matching
- GPA prediction engine
- Study planner AI
- Digital ID integration
- Attendance tracking



20. Conclusion

Project Nexus demonstrates a fully integrated digital campus platform that centralizes:

- Student life
- Academics
- Daily utilities
- Social exchange
- Safety & wellness

It serves as a strong hackathon prototype showing how AI and modern UI design can simplify campus living.

21. Github Repositories

- https://github.com/noelprasad/project-nexus