**AI Navigator Agent / Web Navigator AI Agent**

**Project Summary**

**Problem Understanding**

Efficient web browsing often involves repetitive tasks such as searching, extracting information, and filling forms. Non-technical users struggle to automate these tasks, and cloud-based AI tools raise privacy and dependency concerns. There is a clear need for a **local, intelligent solution** that can understand natural language instructions and autonomously perform web operations on a personal computer.

**Proposed Prototype Solution**

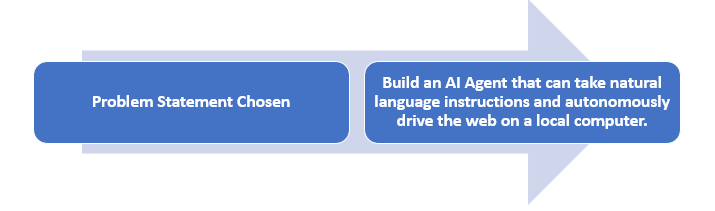
We propose a **locally running AI Navigator Agent** capable of interpreting natural language commands and autonomously controlling a browser. Leveraging a locally hosted Large Language Model (LLM) for instruction parsing combined with browser automation (Chrome Headless or VM-based), the agent executes commands like:

“Search for laptops under 50k and list top 5”

The agent navigates websites, extracts structured data, and presents results clearly to the user. Optional enhancements include multi-step reasoning, task memory, error handling, and a basic GUI for seamless interaction.

**Uniqueness and Impact**

Unlike cloud-dependent solutions, our agent operates entirely offline, ensuring **user privacy and data security**. Its autonomous, multi-step web execution reduces time spent on repetitive browsing tasks, making the web more accessible to both technical and non-technical users. By combining **LLM reasoning with browser automation**, the system delivers a scalable, practical solution for AI-assisted web navigation, data extraction, and workflow automation.



**Detailed Proposal & Prototype Plan**

Our AI Navigator Agent allows users to issue simple commands and retrieves top results while performing automated actions like search, selection, and checkout.

**Frontend**

* Intuitive search bar for natural language queries
* Display of top 5 product results with details: name, price, rating, and key features
* Option to select a product and proceed to checkout

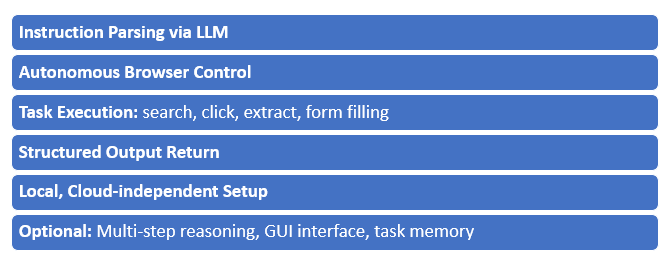
**Backend / Agent**

* Locally hosted LLM to parse instructions
* Browser automation using Chrome Headless or VM-based browsers
* Task execution: search, navigate, extract text, click elements, fill forms
* Multi-step task memory and error handling for robust automation

**Checkout Flow**

* Capture user details: name, address, payment info
* Automatically fill Flipkart checkout form for the selected product
* Redirect user to Flipkart for final payment

**Features**

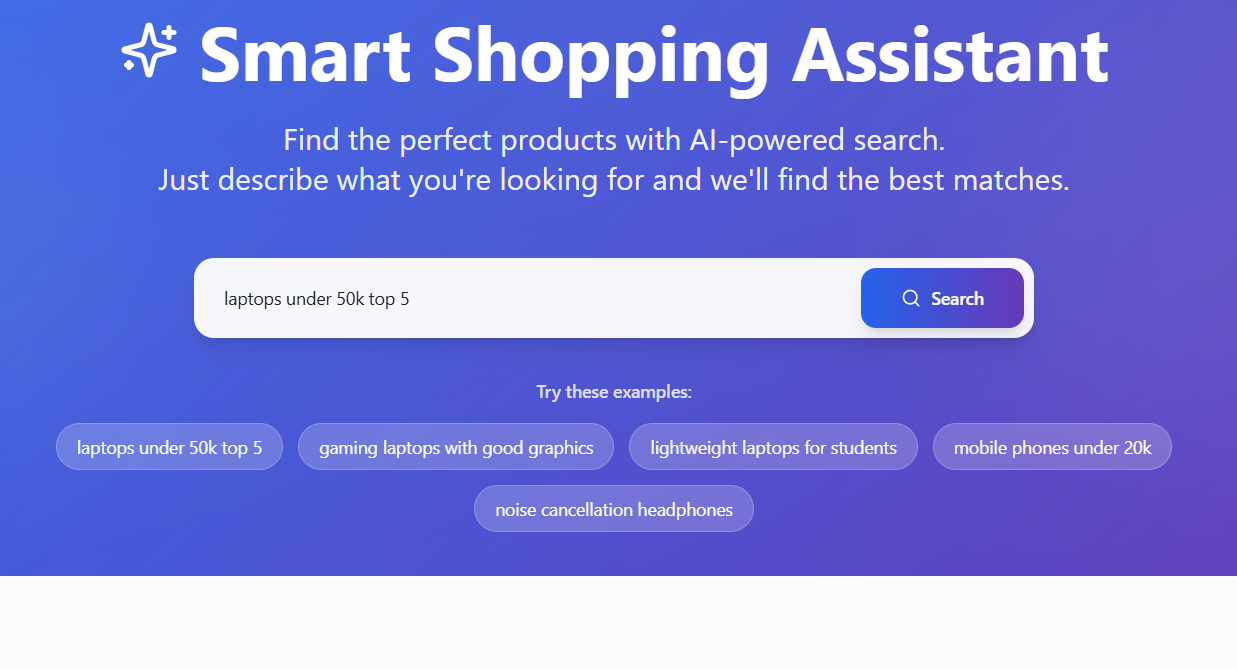
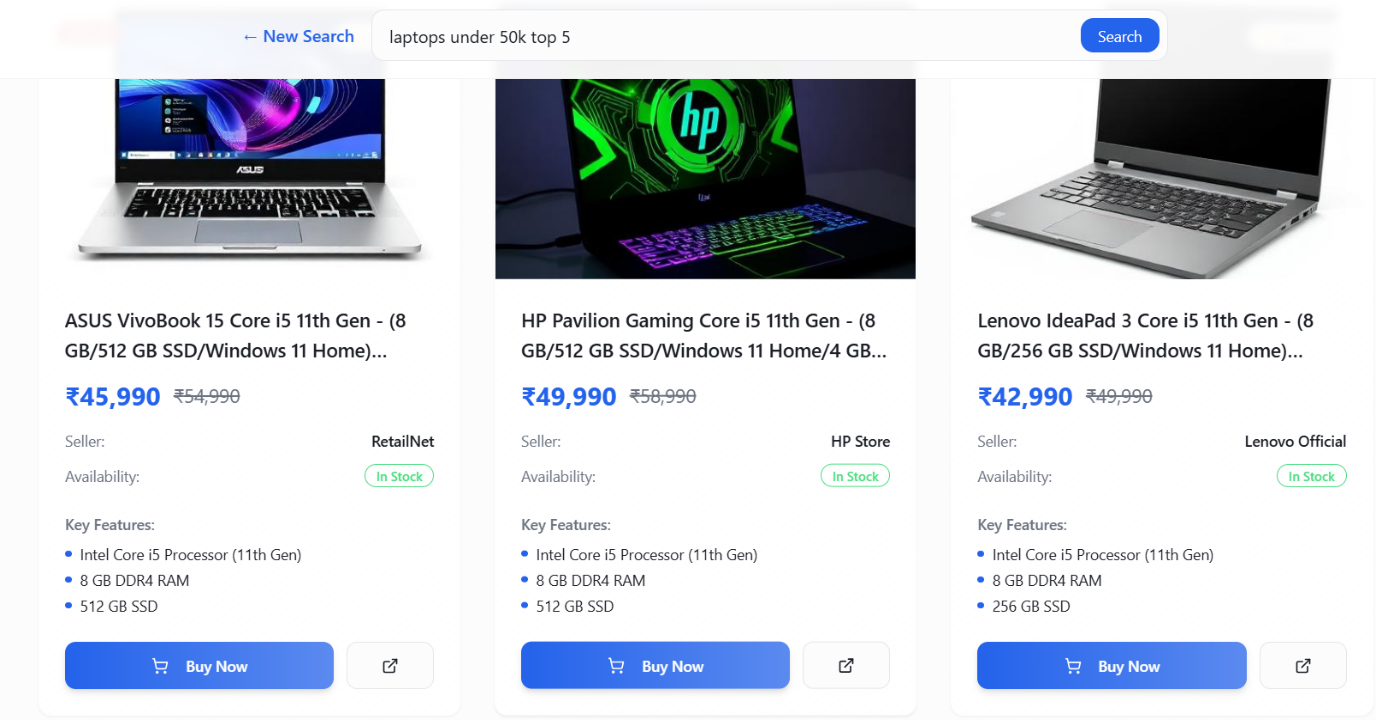
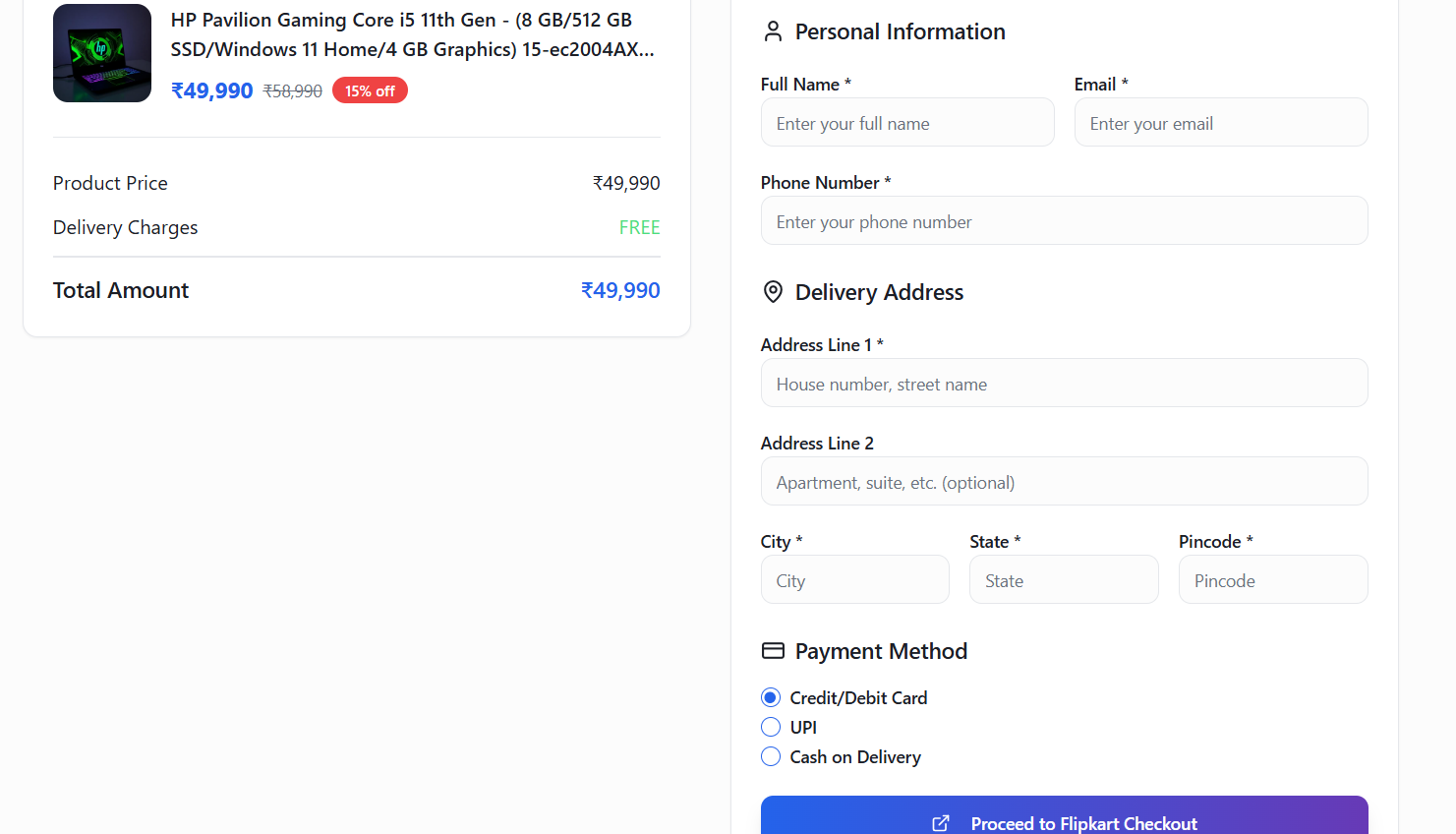
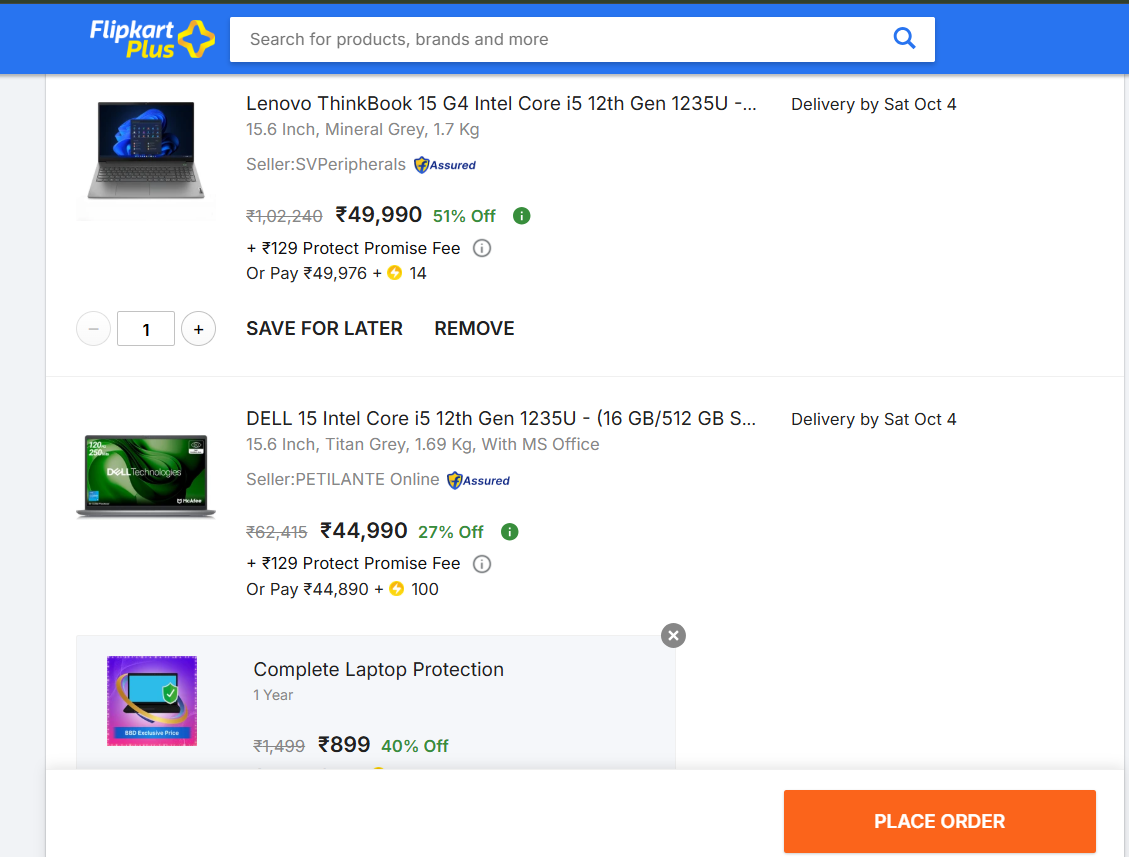
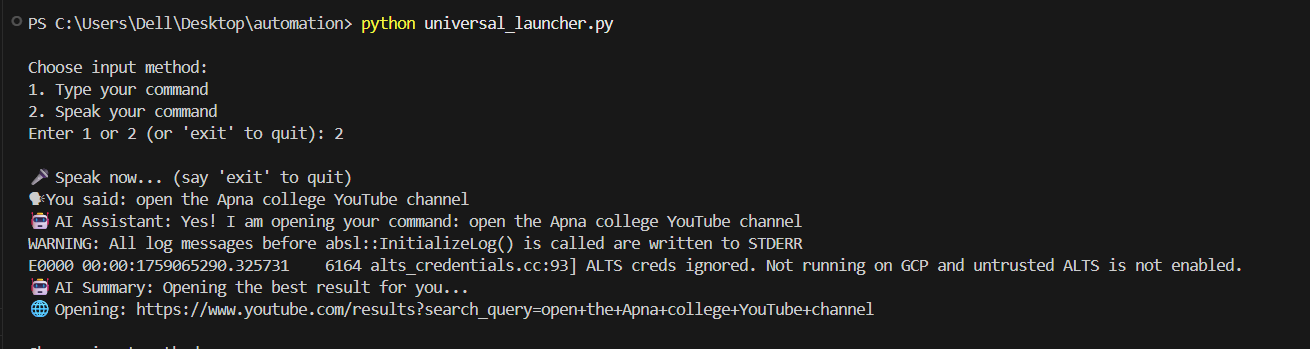
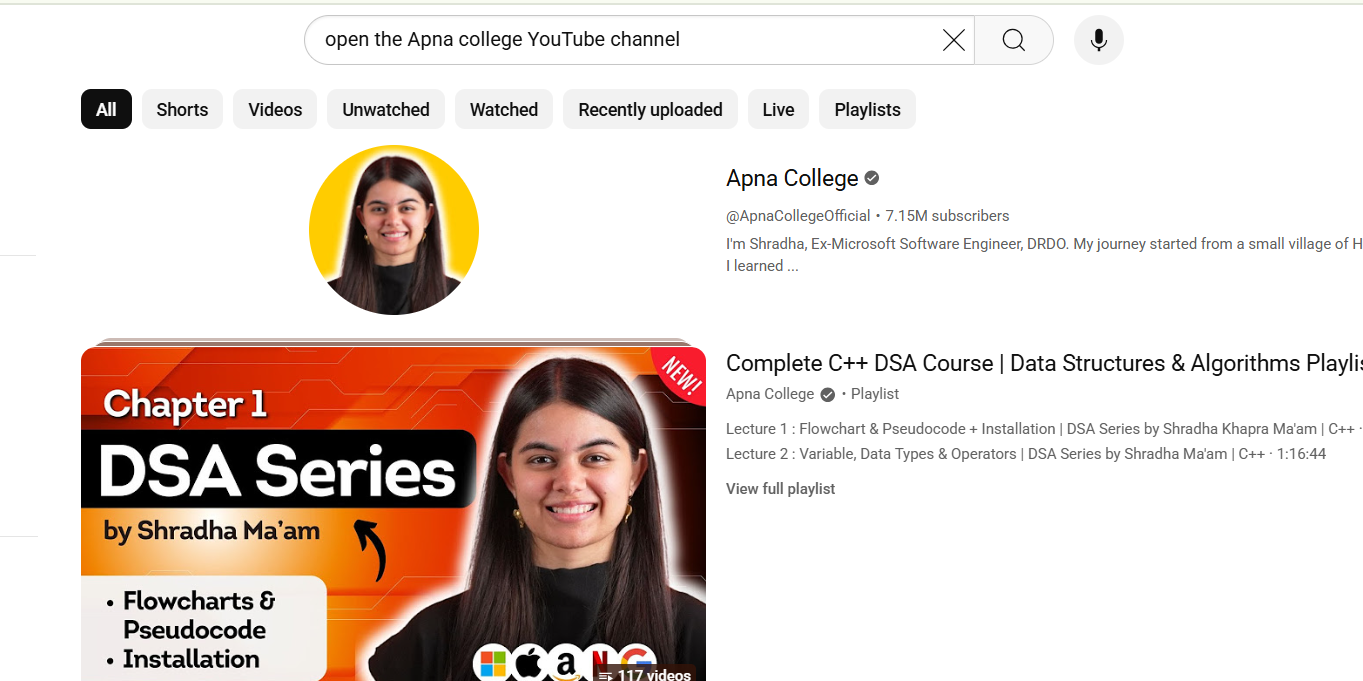


**Tech Stack**

* **Python** – core logic and automation
* **Playwright / Selenium** – browser automation
* **SpeechRecognition & pyttsx3** – voice commands and assistant responses
* **Locally hosted LLM** – instruction understanding & planning
* **React/Vite** – frontend UI for search and checkout

**Team Contributions**

| **Team Member** | **College** | **Contribution** |
| --- | --- | --- |
| Monika | Vignan University | Team lead, system workflow, project coordination, frontend checkout flow |
| Vaishnavi | Vignan’s Lara | Input handling, voice recognition, AI assistant responses, error handling |
| Premsai | KLU | Backend command processing, execution logic, browser automation, Flipkart integration |
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