

# Shopassist-Documentation

## Problem Background: Personalised assistance for shopping a laptop

ShopAssist AI, a chatbot that combines the power of large language models and rule-based functions to ensure accurate and reliable information delivery.

## Problem Statement

Given a dataset containing information about laptops (product names, specifications, descriptions, etc.), build a chatbot that parses the dataset and provides accurate laptop recommendations based on user requirements.

**Project Goals:** Provide a chatbot where user can provide their requirements in natural language, LLM will parse those requirements and apply some rules and filter specific laptops. Recommend those laptops to user.

**Data sources:** laptop\_data.csv

```
[ ] import pandas as pd
df = pd.read_csv('laptop_data.csv')
df.head()
```

	Brand	Model Name	Core	Manufacturer	CPU	Clock Speed	RAM Size	Storage Type	Display Type	Display Size	Graphics Processor	Screen Resolution	OS	Laptop Weight	Special Features	Warranty	Average Battery Life	Price	Description
0	Dell	Inspiron	i5		Intel	2.4 GHz	8GB	SSD	LCD	15.6"	Intel UHD	1920x1080	Windows 10	2.5 kg	Backlit Keyboard	1 year	6 hours	35,000	The Dell Inspiron is a versatile laptop that c...
1	MSI	GL65	i7		Intel	2.6 GHz	16GB	HDD+SSD	IPS	15.6"	NVIDIA GTX	1920x1080	Windows 10	2.3 kg	RGB Keyboard	2 years	4 hours	55,000	The MSI GL65 is a high-performance laptop desi...
2	HP	EliteBook	i7		Intel	2.8 GHz	16GB	SSD	LED	14"	Intel UHD	1920x1080	Windows 11	1.5 kg	Fingerprint Sensor	3 years	8 hours	90,000	The HP EliteBook is a premium laptop designed ...
3	Lenovo	IdeaPad	i3		Intel	2.1 GHz	8GB	HDD	TN	15.6"	Intel UHD	1368x768	Windows 10	2.2 kg	Dolby Audio	1 year	5 hours	25,000	The Lenovo IdeaPad is a versatile laptop that ...
4	ASUS	ZenBook Pro	i9		Intel	3.1 GHz	64GB	SSD	OLED	15.6"	NVIDIA RTX	3840x2160	Windows 10	1.8 kg	NanoEdge Display	2 years	7 hours	200,000	The ASUS ZenBook Pro is a high-end laptop that...

## Approach:

- 1. Conversation and Information Gathering:** The chatbot will utilize language models to understand and generate natural responses. Through a conversational flow, it will ask relevant questions to gather information about the user's requirements.
- 2. Information Extraction:** Once the essential information is collected, rule-based functions come into play, extracting top 3 laptops that best matches the user's needs.
- 3. Personalized Recommendation:** Leveraging this extracted information, the chatbot engages in further dialogue with the user, efficiently addressing their queries and aiding them in finding the perfect laptop solution.

## System Design:

**Dataset:** We have a dataset laptop.csv where each row describes the features of a single laptop and also has a small description at the end. The chatbot that we build will leverage LLMs to parse this Description column and provide

recommendations

### Sample working with Chatbot:————

**System:** Hello! I'm an intelligent laptop gadget expert and I'm here to help you find the best laptop for your needs. Please let me know what you will be using the laptop for and any specific requirements you have.

**User:** I need laptop for backend development with high processing speed, High storage is not required because my data is on cloud

**Assistant:** Great! As a backend developer, you likely require a laptop with high processing speed to handle complex tasks efficiently. Since you mentioned that high storage is not required as your data is on the cloud, we can focus on other important aspects. May I know if you prioritize portability or display quality for your work? Understanding your preferences will help me tailor my recommendations accordingly.

**User:** I do not require portability because I will not travel with laptop. Normal display quality will work for me

**Assistant:** Thank you for providing that information. Since portability is not a priority for you, we can focus on other aspects of the laptop. As a backend developer, high processing speed is important for you, and you mentioned that normal display quality will work for your work. May I know your budget for the laptop? This will help me find options that fit within your price range while meeting the specified requirements.

**User:** 80 k

**Assistant:** Thank you for providing all the information. Kindly wait, while I fetch the products:

#### **Assistant:**

1. Acer Predator: Intel Core i7 2.8 GHz, 16GB RAM, SSD storage, 17.3" IPS display, NVIDIA GTX graphics, Windows 10, 3.2 kg, Dual Cooling Fans, 1-year warranty, 5 hours battery life. Price: Rs 80,000.
2. Lenovo ThinkPad: AMD Ryzen 7 3.0 GHz, 16GB RAM, SSD storage, 14" IPS display, NVIDIA GTX graphics, Linux OS, 1.6 kg, Backlit Keyboard, 3-year warranty, 6 hours battery life. Price: Rs 60,000.
3. MSI GL65: Intel Core i7 2.6 GHz, 16GB RAM, HDD+SSD storage, 15.6" IPS display, NVIDIA GTX graphics, Windows 10, 2.3 kg, RGB Keyboard, 2-year warranty, 4 hours battery life. Price: Rs 55,000.

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## ShopAssist

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80k

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END CONVERSATION

Design choices: We are planing to create a web based UI / Chatbot, so that anyone can use it for purchasing a laptop. This will provide a personalised experience to each user.

Challenges faced:

1. Version compatibility
2. Exporting notebook into python script
3. Creating UI is tuff task for me, as I do not have any background in UI.