# Semantic Spotter

Project Goal:

The project aims to build a **generative search system** using **LlamaIndex** and a **language model (LLM)** that allows users to search through a large dataset of fashion products (e.g., clothing items) based on natural language queries. The system will understand sematic of user queries, process fashion product descriptions, and return relevant product results based on various attributes like color, style, price, and other features.

**Data Source**: It is Myntra fashion data from kaggle

<https://www.kaggle.com/datasets/djagatiya/myntra-fashion-product-dataset>

**Why Llamaindex over Langchain**

1. **LlamaIndex** was designed specifically to create custom data indexes that can efficiently interact with LLMs.
2. **LlamaIndex** offers highly flexible indexing options, such as VectorStoreIndex, In the fashion search engine, where semantic similarity is crucial (e.g., understanding that "casual black jeans" relates to "black denim pants"), LlamaIndex provides tools to create a robust vector-based search index, enhancing the search engine’s ability to return highly relevant items.
3. **Llamaindex** is simple to use , for example while both LangChain and LlamaIndex offer agents, **LlamaIndex’s agents** are better suited for **fashion search engine** because they focus on efficient data retrieval and are easier to configure for structured data use cases.

**Architecture Diagram**

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## **Innovation:**

1. Use of query agent tools gives flexibility to use different agents to query different data and collaborate results

**User Interactive Search**

1. The user’s input query is first checked to determine if it pertains to clothing. If the query is not related to clothing, the user is prompted to revise their search and try again.

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1. Feedback loop once query results are displayed. User is asked if he/she want to refine the search

**A screen shot of a computer

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1. Final search results displays image of product with description about product

**A close-up of a computer screen

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