

CPSC 583 Expert Systems Design - Project Proposal

Project Title

SmartLapRec: Semantic Recommendation System for Apple Laptops

Group Member's

Tushar Yadav, Pratishtha Soni, Dhruti Dilipbhai Patel

Description of the Problem

Our project focuses on developing an expert recommendation system for Apple laptops using Semantic Web technologies. Leveraging RDF and OWL, the system represents laptop specifications, user preferences, and budget constraints. Through SPARQL queries and semantic reasoning, the system dynamically generates personalized recommendations, providing users with tailored suggestions based on their unique preferences and requirements.

Solution Approach

Semantic Web

1. Defining an ontology using RDF and OWL to represent laptop specifications, user preferences, and relationships within the domain.
2. Representing Apple laptop data and user profiles in RDF format, incorporating instances of the defined ontology.
3. Adding Semantic reasoning by helping it understand more things about laptops and users. This way, it can figure out additional details and connections on its own, improving how it gives recommendations.
4. Implementing SPARQL queries to retrieve relevant information from the RDF data store, allowing the system to generate recommendations based on user-specified criteria.
5. Developing a user-friendly interface where users can input preferences and view personalized recommendations generated by the system.

Programming Language

1. Python (Programming Language)
2. SPARQL (Query Language)
3. RDFlib (Python library for working with RDF data. It provides tools for parsing, storing, and querying RDF data.)
4. HTML/CSS or Tkinter (HTML or Tkinter Python library for creating simple GUI for selecting and viewing user profiles and recommendations.)

Datasets

Manually collecting data on various Apple laptop models, including details such as processor type, RAM, storage capacity, weight, category (e.g., Professional, Consumer), and price.