

Tourism Site Recommendation Project - Final Documentation

1. Introduction

1.1 Project Overview

The Tourism Site Recommendation Project is an expert system designed to help users find the best tourist destinations in Rwanda based on their interests. Users input their preferences, such as wildlife, culture, adventure, relaxation, or eco-tourism, and the system provides personalized recommendations.

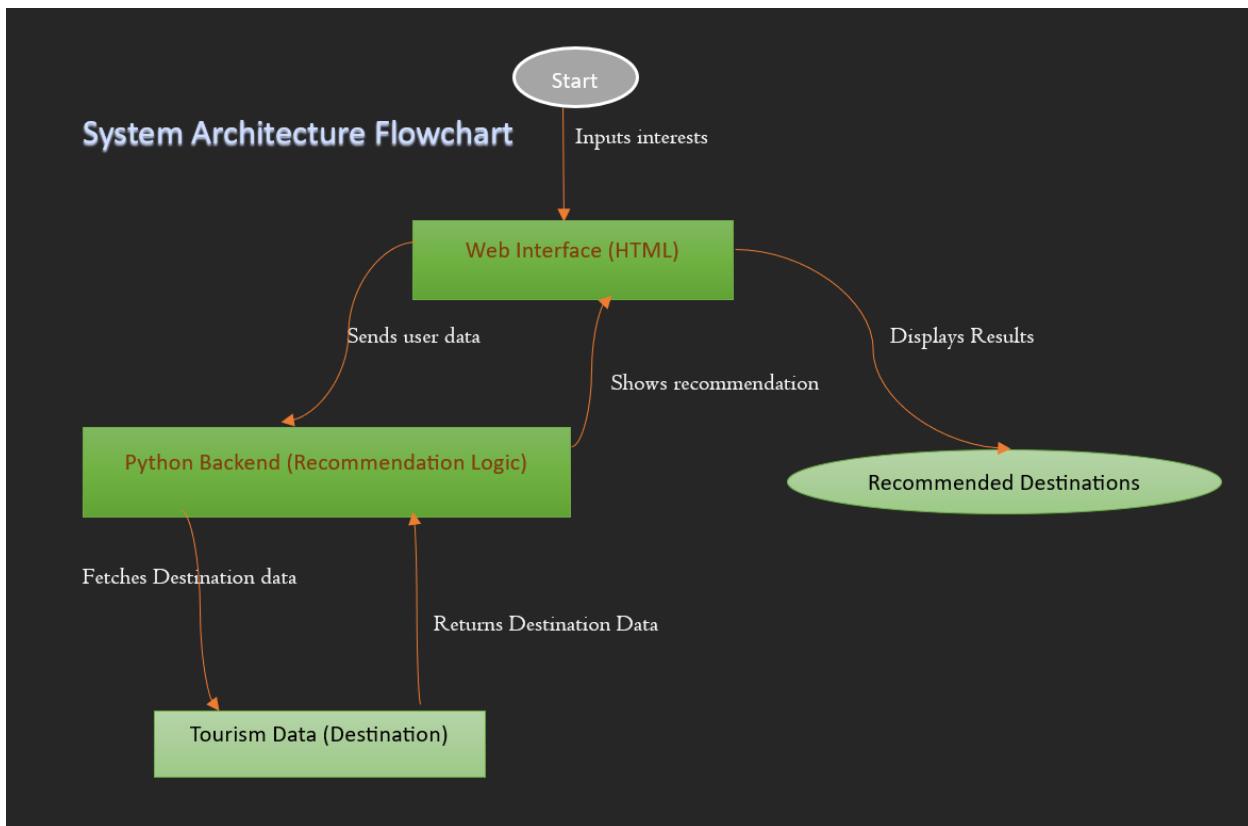
1.2 Objectives

- ✓ Provide accurate tourism recommendations based on user interests.
- ✓ Develop an interactive web-based system using Flask.
- ✓ Enhance user experience through a simple and intuitive interface.

1.3 Scope

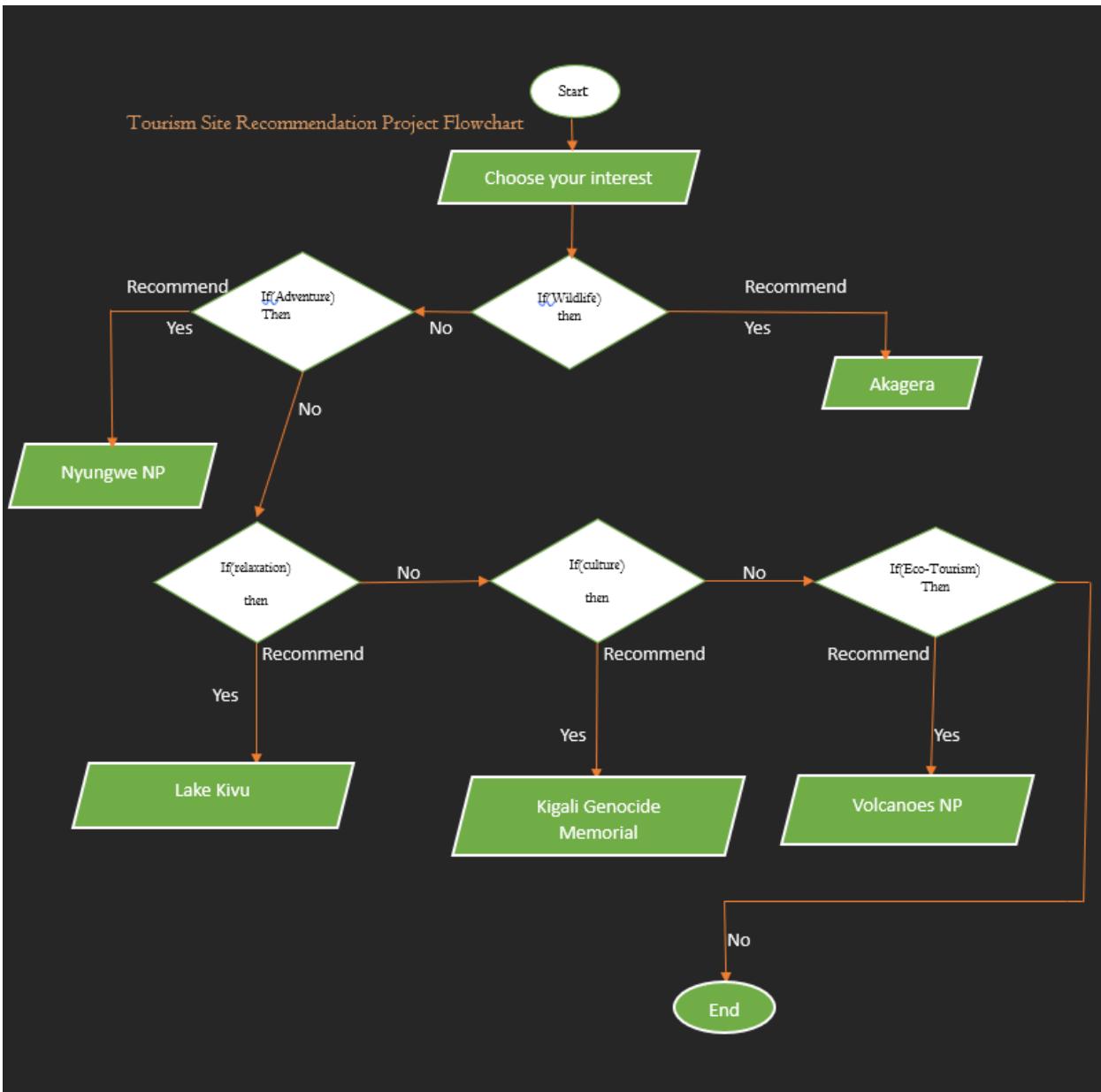
The system is focused on Rwanda's tourist attractions and provides recommendations based on predefined rules.

2. System Design

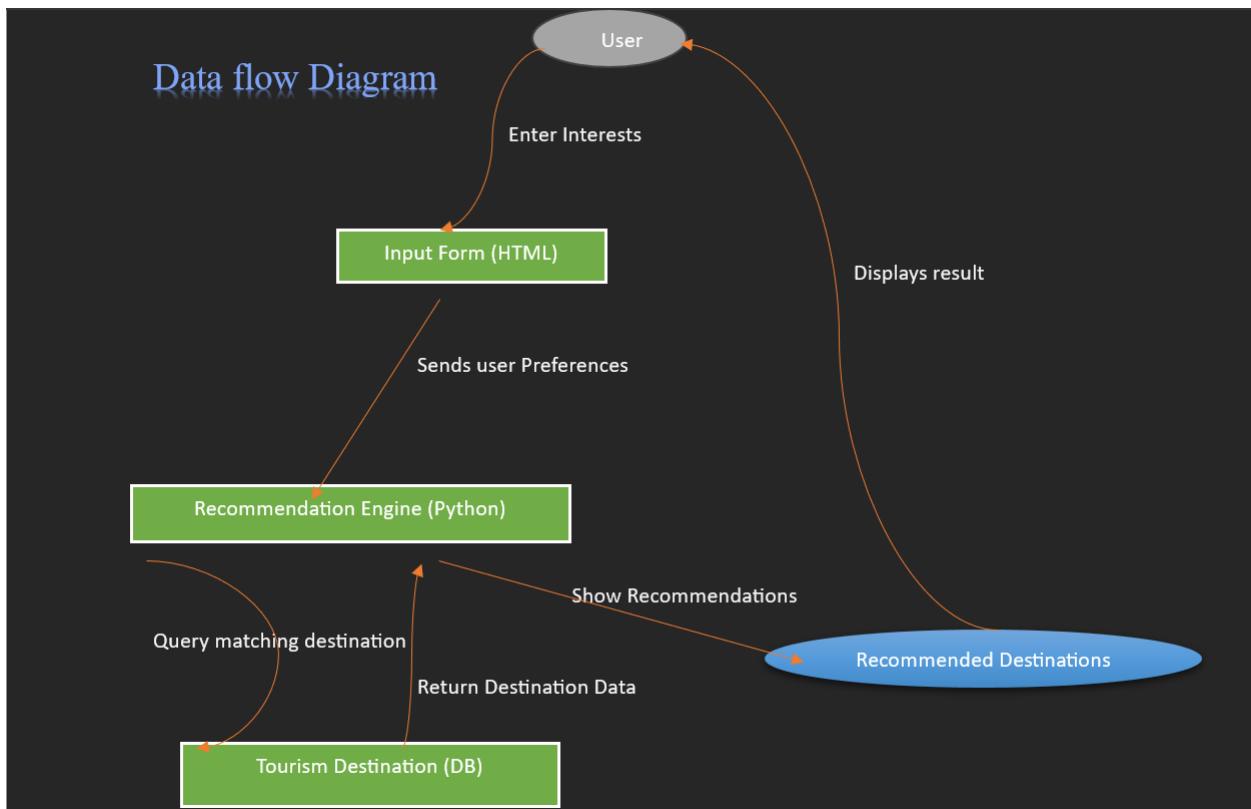


2.1 Use Case Diagram

2.2 Flowchart



2.3 Data Flow Diagram



3. Implementation Details

3.1 Technology Stack

Backend: Python, Flask

Frontend: HTML, CSS, JavaScript

Hosting: GitHub Pages (for UI), Binder (for backend testing)

3.2 Rule-Based System

The recommendation system uses predefined rules to match user interests with tourist destinations:

Wildlife → Akagera National Park

Culture → Kigali Genocide Memorial

Adventure → Nyungwe Canopy Walk

Relaxation → Lake Kivu

Eco-Tourism → Volcanoes National Park

3.3 Flask API Endpoints

GET / → Renders the homepage

POST /recommend → Accepts user interest input and returns a recommendation

4. Testing and Results

4.1 Test Cases

Test Scenario	Input	Expected Output	Actual Output	Status
Wildlife Recommendation	"Wildlife"	"Akagera National Park"	"Akagera National Park"	Pass
Culture Recommendation	"Culture"	"Kigali Genocide Memorial"	"Kigali Genocide Memorial"	Pass
Invalid Input Handling	"Shopping"	"No specific recommendation found."	"No specific recommendation found."	Pass

4.2 Testing Results

All test cases were executed successfully, and the system performed as expected.

5. User Manual

5.1 How to Use the System

1. Open the web application in a browser.
2. Enter your tourism interest (e.g., "wildlife" or "culture").
3. Click the "Get Recommendation" button.
4. A pop-up window will display your personalized recommendation.

5.2 Troubleshooting

- If no recommendation appears, ensure you enter a valid interest.
- Refresh the page if the system is unresponsive.

6. Conclusion

The Tourism Site Recommendation Project successfully provides users with tailored travel suggestions. It demonstrates how expert systems can be used in the tourism industry to enhance user experience and decision-making.

Final Deliverables:

GitHub Pages Link: (Insert link)

Final Demo Video: (Insert link)

PDF Report: (This document)

Python code Screenshot:

```
app.py > ...
1  from flask import Flask, render_template, request, jsonify
2
3  app = Flask(__name__)
4
5  # Function to recommend a destination based on interest
6  def recommend_destination(interest):
7      interest = interest.lower()
8      recommendations = {
9          "wildlife": "Akagera National Park - Explore Rwanda's rich wildlife.",
10         "culture": "Kigali Genocide Memorial - Experience Rwanda's cultural history.",
11         "adventure": "Nyungwe Canopy Walk - Enjoy an adventurous walk above the forest.",
12         "relaxation": "Lake Kivu - Relax by the beautiful lakeside beaches.",
13         "eco-tourism": "Volcanoes National Park - Discover Rwanda's ecological wonders."
14     }
15     return recommendations.get(interest, "No specific recommendation found. Try another interest.")
16
17 # Route for the home page
18 @app.route('/')
19 def home():
20     return render_template('index.html')
21
22 # API route for getting recommendations
23 @app.route('/recommend', methods=['POST'])
24 def recommend():
25     data = request.json
26     interest = data.get("interest", "")
27     recommendation = recommend_destination(interest)
28     return jsonify({"recommendation": recommendation})
29
30 if __name__ == '__main__':
31     app.run(debug=True, host='0.0.0.0', port=5000)
32
```

Here there is an output

127.0.0.1:5000 says

Recommended Destination: Kigali Genocide Memorial - Experience Rwanda's cultural history.

OK

- Personalized destination suggestions.
- Simple decision tree logic for recommendations.
- Focus on Rwanda's diverse tourist attractions.

Get Your Recommendation

Enter your interest:

culture

Get Recommendation

Project Resources

[View Flowchart](#) | [View dataflow Diagram](#) | [View system architecture](#) | [Download PDF Report D1](#) | [Download PDF Report D2](#) | [Download PDF Report D3](#)