APPLICATION DESIGN

Contents

Key goals/detailed flow:

1. Start on home page with option to go to 3 different pages:
   a. Display top average tourist arrivals per country or region chart page
   b. Trends page which shows a graph for each country for the last 10 recorded years
   c. Post/view existing hotel locations section page

2. A search bar is present on the top right of every page, allowing alphanumeric keyword search for any country.
   - If the keyword matches a country name, search results of the matching country names are displayed. When a country result is clicked by the user, the user is directed to the 1b) section where the chart for the searched country or region is shown.
   - If keyword does not match any country, error code: 404: not found error is thrown.

1a. Display top average tourist arrivals per country or region chart page

- Directed to a page where the user has 2 options: search by user or search by country.
- Home button always present and if clicked, returns user to home page

For Search by country:

- Display bar chart showing the top 20 countries for highest average tourist arrivals as bars (calculated from the last 10 recorded years).
- The top country can be shown by moving a slider, displaying a .jpeg of the requested chart.
- The slider can be moved between 1 to 20 to show the top 1 to 20 countries in a chart.
- A .jpeg of the requested chart for each of the cases above is generated with data from the Tourism_prepare.csv dataset.
- Home button returns user to home page

For Search by region:

- Display bar chart showing the top 7 regions as bars ranked by highest average tourist arrivals (calculated from the last 10 recorded years)
- A .jpeg of the requested chart generated with data from the Tourism_prepare.csv dataset.
- Home button returns user to home page

1b. Trends page which will show a graph for each country for the last 10 recorded years.

- User starts by seeing a search bar and a blank section where the charts will appear after search.
- When a user searches an alphanumeric keyword that matches the name of a country, they country data is requested and a graph is displayed for the particular showing the number of arrivals on the y axis and the year on the x axis for the last 10 recorded years.
- Home button returns user to home page

1c. Post/view existing hotel locations address and contact details.

- Initially a user is presented with a page showing already posted hotel locations by business owners, containing basic contact information of the hotel owners, including hotel name,

business name, business email address and business phone number so a user who is for example, a restaurant owner, can contact them to open a restaurant nearby.
- There is a post button which allows for hotel owners to post the above details. But when first clicked, it redirects them to a login page:
  - ➢ There is the option to login where the user can enter username (email) and password or to create an account which asks for user to enter name, business name, email address, business phone number and personal phone number (optional).
  - ➢ If the account username (email) matches records and password doesn't match, user is prompted to a send link to reset password to their email.
  - ➢ If the account login details are correct and match records, then the user is redirected to the post page.
    - ▪ The user can post location address and an optional image of an existing hotel location and country.
  - ➢ If account login details do not match records/are not correct, then user is prompted to create an account section.
- If the user is logged in, they can see a delete post button, which allows removal of the posted location.
- If the user is logged in, they can see an edit post button, which allows editing the details of the posted location.
- Home button returns user to home page

Classes:

Class Name	Attributes	Methods
Account	• email_address: str • password: str • account_id: int	• reset_password(str): str • delete_account() • signup() • login(user) • logout() • modify_account()
Post	• hotel_address: str • hotel_name: str • business_email: str • business_phone_number: str • business_name: str	• create_post(str): str • delete_post(): str
Data	• country_name: str • number_of_arrivals: float • region: str • year: str	• create_bar_chart() • create_line_chart() • calculate_average_number_of_arrivals() • calculate_top_20_countries_average_arrivals() • display_7_regions_ranked() • sort_7_regions()

Resources and data format:

Resources:

The resources to be used are: countries, international tourism - number of arrivals, region, year.

Data format:

The resources data format to be used will be JavaScript Object Notation (JSON). This format was chosen since JSON is text only making it easy to send between computers and can be used by any programming language (W3schools 2023,)[1]. This is advantageous as it allows versatility between webapp developers and is more convenient to use for my API. It is also easily readable, which is particularly useful for a designer such as myself with little to no experience.

URIs

Note the URIs are extensions of http://api.example.com. For example /home in the URI column refers to http://api.example.com/home

Resources	URI	RESTAPI method/ http requests	Controller Function
Home	/home	GET()	home() – returns home page
Data (View)	/data-view	GET()	
Post	/posts/post	GET() POST() DELETE()	show_posts() – displays existing posts create_post() – creates a post for hotel location delete_post() – delete a posted hotel location
Account reset password	/account/reset-password	GET() POST() PUT()	account_pass_reset_request() – sends a request link to rest password to the users email if the entered email matches the records account_pass_reset() – resets the account password and replaces the old one
Account create	/account/signup		
Account log in	/account/login	GET() POST()	account_login() – takes entered login details, checks against the login details, returns a 404 error if incorrect details, otherwise redirects user to the posts page
Account logout	/account/logout	GET()	account_logout() – logs out current user and redirects to the post view page

References

1: W3schools. (2023). JSON Introduction. [online] Available at:
https://www.w3schools.com/js/js_json_intro.asp#:~:text=Douglas%20Crockford.- [Accessed 4 Jan.
2023].