

Running the interface with all functions tested:

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C:\Users\flami> Command Prompt - python main.py  
Please insert your option: 9  
  
C:\Users\flami\CS3100\Step10>python main.py  
<><><><><><><><><><><><><><><><><>  
|   COUNTRY DATA RETRIEVAL SYSTEM   |  
<><><><><><><><><><><><><><><><><>  
(1) - Input file  
(2) - Country Search  
(3) - Country Compare  
(4) - Min and Max for an Indicator  
(5) - Is a Country Developed or Developing  
(6) - List Countries  
(7) - Add Country  
(8) - Remove Country  
(9) - Exit Program  
Please insert your option: 1  
Enter name of csv file with country data: data.csv  
loaded: data.csv  
  
Please insert your option: 2  
Enter country: Japan  
Japan  
Agricultural Land: 12.0631001371742%  
Access to Electricity: 100.0%  
Life Expectancy: 84.3563414634146%  
Total Population: 126633000 people  
Labor Force: 69045529 people  
GNI per capita: $42010.0  
Please insert your option: 3  
Enter the name of the first country: Denmark  
Enter the name of the second country: Nigeria  
Enter the indicator you want to compare: labor_force  
Nigeria has a greater value of 67373495 compared to Denmark with 3032098  
Please insert your option: 4  
Indicators: agricultural_land, access_to_electricity, life_expectancy, total_population, labor_force, GNI_per_capita  
Enter an Indicator to find the maximum and minimum country values: total_population
```

```
C:\> Command Prompt
Enter an Indicator to find the maximum and minimum country values: total_population

Calling max_and_min
maximum and minimum for: total_population
United States has the highest value of 328329953
Samoa has the lowest value of 211905
Please insert your option: 5
Enter a country to see if it's developed or developing: Spain
Spain is a developed country
Please insert your option: 6
Belgium
Denmark
Fiji
Germany
Haiti
Indonesia
Iraq
Japan
Jordan
Kenya
Netherlands
Nigeria
Samoa
Saudi Arabia
Spain
Sweden
Switzerland
Thailand
United Kingdom
United States
Please insert your option: 7
What is the country name you would like to add?Philippines
What is Philippines agricultural land % 1000
What is Philippines access to electrivity?100
What is Philippines life expectancy?100
What isPhilippines total population?100
What is Philippines labor force?100
What is Philippines GNI per capita?1000
Country Philippines was successfully added!
Please insert your option: 6
Belgium
Denmark
Fiji
Germany
Haiti
Indonesia
Iraq
Japan
Jordan
Kenya
Netherlands
Nigeria
```

```
Philippines
Samoa
Saudi Arabia
Spain
Sweden
Switzerland
Thailand
United Kingdom
United States
Please insert your option: 8
What country would you like to remove?Japan
Please insert your option: 6
Belgium
Denmark
Fiji
Germany
Haiti
Indonesia
Iraq
Jordan
Kenya
Netherlands
Nigeria
Philippines
Samoa
Saudi Arabia
Spain
Sweden
Switzerland
Thailand
United Kingdom
United States
Please insert your option: 9
You have exited.

C:\Users\flami\CS3100\Step10>
```

Running country analysis:

```
Command Prompt
Microsoft Windows [Version 10.0.19044.2364]
(c) Microsoft Corporation. All rights reserved.

C:\Users\flami>cd cs3100/step10

C:\Users\flami\CS3100\Step10>python main.py
No of entries: 1000
searching 100 queries using the List based implementation: --- 0.009502887725830078 seconds ---
searching 100 queries using the BST Dict based implementation: --- 0.0010006427764892578 seconds ---
searching 100 queries using the Linked List Dict based implementation: --- 0.00950312614440918 seconds ---
searching 100 queries using the Sorted List Dict based implementation: --- 0.0009992122650146484 seconds ---
searching 100 queries using the Hash Table Dict based implementation: --- 0.0015001296997070312 seconds ---

C:\Users\flami\CS3100\Step10>python main.py
No of entries: 1000
searching 1000 queries using the List based implementation: --- 0.062011003494262695 seconds ---
searching 1000 queries using the BST Dict based implementation: --- 0.008001327514648438 seconds ---
searching 1000 queries using the Linked List Dict based implementation: --- 0.09751749038696289 seconds ---
searching 1000 queries using the Sorted List Dict based implementation: --- 0.008001565933227539 seconds ---
searching 1000 queries using the Hash Table Dict based implementation: --- 0.014002561569213867 seconds ---

C:\Users\flami\CS3100\Step10>python main.py
No of entries: 1000
searching 10000 queries using the List based implementation: --- 0.6341123580932617 seconds ---
searching 10000 queries using the BST Dict based implementation: --- 0.0795142650604248 seconds ---
searching 10000 queries using the Linked List Dict based implementation: --- 0.934666633605957 seconds ---
searching 10000 queries using the Sorted List Dict based implementation: --- 0.08201456069946289 seconds ---
searching 10000 queries using the Hash Table Dict based implementation: --- 0.14752578735351562 seconds ---

C:\Users\flami\CS3100\Step10>python main.py
No of entries: 1000
searching 100000 queries using the List based implementation: --- 6.792708158493042 seconds ---
searching 100000 queries using the BST Dict based implementation: --- 0.9116621017456055 seconds ---
searching 100000 queries using the Linked List Dict based implementation: --- 9.806743860244751 seconds ---
searching 100000 queries using the Sorted List Dict based implementation: --- 0.8086440563201904 seconds ---
searching 100000 queries using the Hash Table Dict based implementation: --- 1.3652422428131104 seconds ---

C:\Users\flami\CS3100\Step10>_
```