API Weather Application

Start Date: November 3, 2020

Finish Date: November 17, 2020

Why use API for a Weather App?

Using an API will allow the user to get current weather data for any location on Earth including over 200,000 cities. The API will collect weather from different sources such as global and local weather models, satellites and radars. Having an accurate weather forecasts is an essential tool for business and users for where weather conditions have an impact on day-to-day jobs.

The weather API and API key for this project:

```
weather_api = 'http://api.openweathermap.org/data/2.5/weather?q='
weather_key = '&appid=fc623e7c1bc984adfa3864bb04c2fc46'
```

Error Free Program

Getting user input while error checking:

- Ask user for input or press 1 to exit.
- If user presses 1 the program will terminate.
- If user inputs information into the program, make sure to error check.
- If user inputs invalid date, ask user to try again.
- Will capitalize the data input from the user by using capitalize().

```
# while the program is looping we will use number 1 to exit program
while looping:
    # tell user to press 1 to exit the program
    print('--Enter 1 to EXIT program--')

    # while looping ask user for city and capitalize first letter
    city = input('Please enter a city: ').capitalize()

    # if city is 1 break loop
    if city == "1":
        print("You have selected to Exit the program. Goodbye.")
        exit()
        break

    # while looping ask user for city and capitalize first letter
    state = input('Please enter a state: ').capitalize()

    # if city is 1 break loop
    if state == "1":
        print("You have selected to Exit the program. Goodbye.")
        exit()
        break

    # if user enters in invalid state ask user to try again
    if state not in list_of_states:
        print("Invalid Choice for state! Please try again or 1 to exit program.")
        continue
```

Error check for the list of States so the user will enter in a valid state.

```
# List of states
list_of_states = ["Alaska", "Alabama", "Arkansas", "American Samoa", "Arizona", "California",
                  "Colorado", "Connecticut", "District ", "of Columbia", "Delaware", "Florida",
                  "Georgia", "Guam", "Hawaii", "Iowa", "Idaho", "Illinois", "Indiana", "Kansas",
                  "Kentucky", "Louisiana", "Massachusetts", "Maryland", "Maine", "Michigan", "Minnesota",
                  "Missouri", "Mississippi", "Montana", "North Carolina", "North Dakota", "Nebraska",
                  "New Hampshire", "New Jersey", "New Mexico", "Nevada", "New York", "Ohio", "Oklahoma",
                  "Oregon", "Pennsylvania", "Puerto Rico", "Rhode Island", "South Carolina", "South Dakota",
                  "Tennessee", "Texas", "Utah", "Virginia", "Virgin Islands", "Vermont", "Washington", "Wisconsin",
                  "West Virginia", "Wyoming"]
```

- List all the States and create an if statement to check list.
- If State is not in list, we will show invalid choice for user.
- Make sure the user enters in a correct state if not, the program will through an error statement.

```
# if user enters in invalid state ask user to try again
if state not in list_of_states:
    print("Invalid Choice for state! Please try again or 1 to exit program.")
    continue
```

Weather Information for each City and State.

- Once user enters in valid data the program will show the weather details about the City and State.
- The program will show the user the Longitude, Latitude, and current weather of the city.

```
--Enter 1 to EXIT program--
Please enter a city: gulfport
Please enter a state: mississippi

--Gulfport, Mississippi Coordinates--
Longitude: -89.09
Latitude: 30.37

--Gulfport, Mississippi Weather--
Clear
clear sky
```

Functions for the selected State.

- If the user has inputted a selected state will show the user additional information.
- The program will show the user the Longitude, Latitude, current weather and along with the States current additional information.

Preferred Outcome

User control and accuracy

- This program will give accurate weather to the user on many City's and states.
- The API uses correct data.
- Some states provide addition information.
- The program will error check the users input for them.
- Allows user to input as many City and States.

Unlimited attempts

- The API as no limited amount of attempts.
- The user can use the unlimited attempts.
- The program allows the user to exit the program when needed.

Program Results

State with Additional Information

```
--Enter 1 to EXIT program--
Please enter a city: destin
Please enter a state: Florida

--Destin, Florida Coordinates--
Longitude: -86.5
Latitude: 30.39

--Destin, Florida Weather--
Clouds
broken clouds

--State Florida Current Details--
Population: 21,477,737
Income Rank: 40th
Capital: Tallahassee
Current Governor: Ron DeSantis

--Enter 1 to EXIT program--
Please enter a city:
```

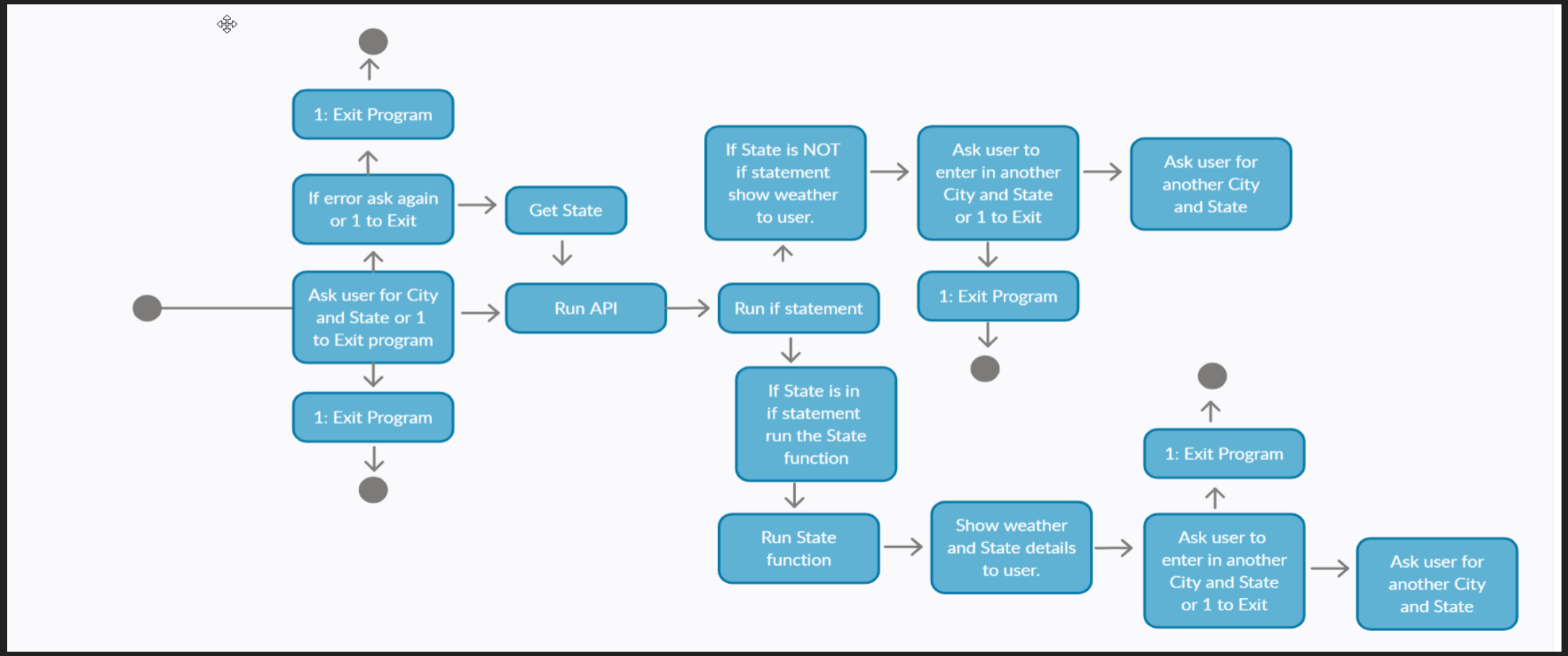
State with “NO” Additional Information

```
--Enter 1 to EXIT program--
Please enter a city: atlanta
Please enter a state: georgia

--Atlanta, Georgia Coordinates--
Longitude: -84.39
Latitude: 33.75

--Atlanta, Georgia Weather--
Clear
clear sky
No additional information for this state.
--Enter 1 to EXIT program--
Please enter a city:
```

State Diagram



State Diagram