SDEV 300 - Lab 3  
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**Test Cases**

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| **Test #** | **Scenario** | **Expected Result** | **Actual Result** |
| 1 | The user opens the state data application on the command line using the command ‘python state\_data.py’. The user is welcomed, the menu is displayed, and the user is asked to input a selection from the menu. | Welcome to the U.S. States Data Application!  Please select an option:  a. Display all U.S. states in alphabetical order with their capital, population, and flower  b. Search for a U.S. state and display its capital, population, and an image of its flower  c. Display a bar graph of the top 5 most populated U.S. states  d. Update a state's population  e. Exit Program    Enter selection: |  |
| 2 | The user selects ‘a’ from the menu. All 50 U.S. states are printed in alphabetical order with their capitals, populations, and flowers. | Enter selection: a  State Capital Population Flower  Alabama Montgomery 5,143,033 Camellia  Alaska Juneau 733,536 Alpine Forget-me-not  Arizona Phoenix 7,497,004 Saguaro Cactus Blossom  Arkansas Little Rock 3,089,060 Apple Blossom  California Sacramento 38,889,770 California Poppy  Colorado Denver 5,914,181 Rocky Mountain Columbine  Connecticut Hartford 3,625,646 Mountain Laurel  Delaware Dover 1,044,321 Peach Blossom  Florida Tallahassee 22,975,931 Orange Blossom  Georgia Atlanta 11,145,304 Cherokee Rose  Hawaii Honolulu 1,430,877 Pua Aloalo  Idaho Boise 1,990,456 Syringa  Illinois Springfield 12,516,863 Violet  Indiana Indianapolis 6,892,124 Peony  Iowa Des Moines 3,214,315 Wild Rose  Kansas Topeka 2,944,376 Wild Native Sunflower  Kentucky Frankfort 4,540,745 Goldenrod  Louisiana Baton Rouge 4,559,475 Magnolia  Maine Augusta 1,402,106 White Pine Cone and Tassel  Maryland Annapolis 6,196,525 Black-Eyed Susan  Massachusetts Boston 7,020,058 Mayflower  Michigan Lansing 10,041,241 Apple Blossom  Minnesota St. Paul 5,761,530 Lady Slipper  Mississippi Jackson 2,940,452 Magnolia  Missouri Jefferson City 6,215,144 White Hawthorn Blossom  Montana Helena 1,142,746 Bitterroot  Nebraska Lincoln 1,988,698 Goldenrod  Nevada Carson City 3,210,931 Sagebrush  New Hampshire Concord 1,405,105 Purple Lilac  New Jersey Trenton 9,320,865 Violet  New Mexico Santa Fe 2,115,266 Yucca  New York Albany 19,469,232 Rose  North Carolina Raleigh 10,975,017 Dogwood  North Dakota Bismarck 788,940 Wild Prairie Rose  Ohio Columbus 11,812,173 Red Carnation  Oklahoma Oklahoma City 4,088,377 Mistletoe  Oregon Salem 4,227,337 Oregon Grape  Pennsylvania Harrisburg 12,951,275 Mountain Laurel  Rhode Island Providence 1,098,082 Violet  South Carolina Columbia 5,464,155 Yellow Jessamine  South Dakota Pierre 928,767 American Pasque  Tennessee Nashville 7,204,002 Iris  Texas Austin 30,976,754 Bluebonnet  Utah Salt Lake City 3,454,232 Sego Lily  Vermont Montpelier 647,818 Red Clover  Virginia Richmond 8,752,297 American Dogwood  Washington Olympia 7,841,283 Coast Rhododendron  West Virginia Charleston 1,766,107 Rhododendron  Wisconsin Madison 5,931,367 Wood Violet  Wyoming Cheyenne 586,485 Indian Paintbrush |  |
| 3 | The user selects ‘b’ from the menu and they are prompted to enter a state. | Enter selection: b  Enter a state: |  |
| 4a | When prompted to enter a state, the user input is blank. They are informed that no state was found and prompted to enter a state name again. | Enter a state:  State not found. Please enter a valid U.S. state.  Enter a state: |  |
| 4b | When prompted to enter a state, the user inputs a word that is not a state name. They are informed that no state was found and prompted to enter a state name again. | Enter a state: \*\*not a state name here\*\*  State not found. Please enter a valid U.S. state.  Enter a state: |  |
| 4c | When prompted to enter a state, the user inputs ‘Alabama’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Alabama  State Capital Population Flower  Alabama Montgomery 5,143,033 Camellia  A close up of a pink flower  Description automatically generated |  |
| 4d | When prompted to enter a state, the user inputs ‘Alaska’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Alaska  State Capital Population Flower  Alaska Juneau 733,536 Alpine Forget-me-not  A close up of a flower  Description automatically generated |  |
| 4e | When prompted to enter a state, the user inputs ‘Arizona’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Arizona  State Capital Population Flower  Arizona Phoenix 7,497,004 Saguaro Cactus Blossom  A cactus with white flowers  Description automatically generated |  |
| 4f | When prompted to enter a state, the user inputs ‘Arkansas’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Arkansas  State Capital Population Flower  Arkansas Little Rock 3,089,060 Apple Blossom  A close up of a flower  Description automatically generated |  |
| 4g | When prompted to enter a state, the user inputs ‘California’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: California  State Capital Population Flower  California Sacramento 38,889,770 California Poppy  A close up of a flower  Description automatically generated |  |
| 4h | When prompted to enter a state, the user inputs ‘Colorado’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Colorado  State Capital Population Flower  Colorado Denver 5,914,181 Rocky Mountain Columbine  A purple and white flower  Description automatically generated |  |
| 4i | When prompted to enter a state, the user inputs ‘Connecticut’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Connecticut  State Capital Population Flower  Connecticut Hartford 3,625,646 Mountain Laurel  A close up of white flowers  Description automatically generated |  |
| 4j | When prompted to enter a state, the user inputs ‘Delaware’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Delaware  State Capital Population Flower  Delaware Dover 1,044,321 Peach Blossom  A close up of pink flowers  Description automatically generated |  |
| 4k | When prompted to enter a state, the user inputs ‘Florida’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Florida  State Capital Population Flower  Florida Tallahassee 22,975,931 Orange Blossom    A close up of flowers  Description automatically generated |  |
| 4l | When prompted to enter a state, the user inputs ‘Georgia’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Georgia  State Capital Population Flower  Georgia Atlanta 11,145,304 Cherokee Rose  A white flower with yellow center  Description automatically generated |  |
| 4m | When prompted to enter a state, the user inputs ‘Hawaii’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Hawaii  State Capital Population Flower  Hawaii Honolulu 1,430,877 Pua Aloalo  A yellow flower with green leaves  Description automatically generated |  |
| 4n | When prompted to enter a state, the user inputs ‘Idaho’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Idaho  State Capital Population Flower  Idaho Boise 1,990,456 Syringa  A close up of a flower  Description automatically generated |  |
| 4o | When prompted to enter a state, the user inputs ‘Illinois’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Illinois  State Capital Population Flower  Illinois Springfield 12,516,863 Violet  A purple flower in a green plant  Description automatically generated |  |
| 4p | When prompted to enter a state, the user inputs ‘Indiana’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Indiana  State Capital Population Flower  Indiana Indianapolis 6,892,124 Peony  A close up of a pink flower  Description automatically generated |  |
| 4q | When prompted to enter a state, the user inputs ‘Iowa’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Iowa  State Capital Population Flower  Iowa Des Moines 3,214,315 Wild Rose  A close up of a flower  Description automatically generated |  |
| 4r | When prompted to enter a state, the user inputs ‘Kansas’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Kansas  State Capital Population Flower  Kansas Topeka 2,944,376 Wild Native Sunflower  A group of yellow flowers  Description automatically generated |  |
| 4s | When prompted to enter a state, the user inputs ‘Kentucky’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Kentucky  State Capital Population Flower  Kentucky Frankfort 4,540,745 Goldenrod  A close up of a yellow flower  Description automatically generated |  |
| 4t | When prompted to enter a state, the user inputs ‘Louisiana’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Louisiana  State Capital Population Flower  Louisiana Baton Rouge 4,559,475 Magnolia  A white flower with green leaves  Description automatically generated |  |
| 4u | When prompted to enter a state, the user inputs ‘Maine’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Maine  State Capital Population Flower  Maine Augusta 1,402,106 White Pine Cone and Tassel  A close-up of a pine tree  Description automatically generated |  |
| 4v | When prompted to enter a state, the user inputs ‘Maryland’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Maryland  State Capital Population Flower  Maryland Annapolis 6,196,525 Black-Eyed Susan  A yellow flower with a brown center  Description automatically generated |  |
| 4w | When prompted to enter a state, the user inputs ‘Massachusetts’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Massachusetts  State Capital Population Flower  Massachusetts Boston 7,020,058 Mayflower  A group of purple flowers  Description automatically generated |  |
| 4x | When prompted to enter a state, the user inputs ‘Michigan’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Michigan  State Capital Population Flower  Michigan Lansing 10,041,241 Apple Blossom |  |
| 4y | When prompted to enter a state, the user inputs ‘Minnesota’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Minnesota  State Capital Population Flower  Minnesota St. Paul 5,761,530 Lady Slipper  A close up of a flower  Description automatically generated |  |
| 4z | When prompted to enter a state, the user inputs ‘Mississippi’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Mississippi  State Capital Population Flower  Mississippi Jackson 2,940,452 Magnolia  A white flower with green leaves  Description automatically generated |  |
| 4aa | When prompted to enter a state, the user inputs ‘Missouri’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Missouri  State Capital Population Flower  Missouri Jefferson City 6,215,144 White Hawthorn Blossom  A close-up of white flowers  Description automatically generated |  |
| 4bb | When prompted to enter a state, the user inputs ‘Montana’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Montana  State Capital Population Flower  Montana Helena 1,142,746 Bitterroot  A purple flower with white center  Description automatically generated |  |
| 4cc | When prompted to enter a state, the user inputs ‘Nebraska’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Nebraska  State Capital Population Flower  Nebraska Lincoln 1,988,698 Goldenrod    A close up of a yellow flower  Description automatically generated |  |
| 4dd | When prompted to enter a state, the user inputs ‘Nevada’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Nevada  State Capital Population Flower  Nevada Carson City 3,210,931 Sagebrush  Close-up of a plant with a leafy stem  Description automatically generated |  |
| 4ee | When prompted to enter a state, the user inputs ‘New Hampshire’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: New Hampshire  State Capital Population Flower  New Hampshire Concord 1,405,105 Purple Lilac  A close up of purple flowers  Description automatically generated |  |
| 4ff | When prompted to enter a state, the user inputs ‘New Jersey’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: New Jersey  State Capital Population Flower  New Jersey Trenton 9,320,865 Violet  A purple flower in a green plant  Description automatically generated |  |
| 4gg | When prompted to enter a state, the user inputs ‘New Mexico’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: New Mexico  State Capital Population Flower  New Mexico Santa Fe 2,115,266 Yucca  A close up of a flower  Description automatically generated |  |
| 4hh | When prompted to enter a state, the user inputs ‘New York’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: New York  State Capital Population Flower  New York Albany 19,469,232 Rose  A close up of a pink rose  Description automatically generated |  |
| 4ii | When prompted to enter a state, the user inputs ‘North Carolina’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: North Carolina  State Capital Population Flower  North Carolina Raleigh 10,975,017 Dogwood  A group of white flowers on a tree branch  Description automatically generated |  |
| 4jj | When prompted to enter a state, the user inputs ‘North Dakota’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: North Dakota  State Capital Population Flower  North Dakota Bismarck 788,940 Wild Prairie Rose  A close up of a flower  Description automatically generated |  |
| 4kk | When prompted to enter a state, the user inputs ‘Ohio’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Ohio  State Capital Population Flower  Ohio Columbus 11,812,173 Red Carnation  A close-up of a red flower  Description automatically generated |  |
| 4ll | When prompted to enter a state, the user inputs ‘Oklahoma’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Oklahoma  State Capital Population Flower  Oklahoma Oklahoma City 4,088,377 Mistletoe  A plant with white flowers and green leaves  Description automatically generated |  |
| 4mm | When prompted to enter a state, the user inputs ‘Oregon’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Oregon  State Capital Population Flower  Oregon Salem 4,227,337 Oregon Grape  A yellow flowers on a plant  Description automatically generated |  |
| 4nn | When prompted to enter a state, the user inputs ‘Pennsylvania’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Pennsylvania  State Capital Population Flower  Pennsylvania Harrisburg 12,951,275 Mountain Laurel  A close up of white flowers  Description automatically generated |  |
| 4oo | When prompted to enter a state, the user inputs ‘Rhode Island’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Rhode Island  State Capital Population Flower  Rhode Island Providence 1,098,082 Violet  A purple flower in a green plant  Description automatically generated |  |
| 4pp | When prompted to enter a state, the user inputs ‘South Carolina’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: South Carolina  State Capital Population Flower  South Carolina Columbia 5,464,155 Yellow Jessamine  Yellow flowers on a plant  Description automatically generated |  |
| 4qq | When prompted to enter a state, the user inputs ‘South Dakota’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: South Dakota  State Capital Population Flower  South Dakota Pierre 928,767 American Pasque  A bee on a purple flower  Description automatically generated |  |
| 4rr | When prompted to enter a state, the user inputs ‘Tennessee’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Tennessee  State Capital Population Flower  Tennessee Nashville 7,204,002 Iris  A close up of a purple flower  Description automatically generated |  |
| 4ss | When prompted to enter a state, the user inputs ‘Texas’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Texas  State Capital Population Flower  Texas Austin 30,976,754 Bluebonnet  Close-up of a blue and red flower  Description automatically generated |  |
| 4tt | When prompted to enter a state, the user inputs ‘Utah’. Its name, capital, population and flower are printed and an image of its flower is displayed. | State Capital Population Flower  Utah Salt Lake City 3,454,232 Sego Lily  A white flower with yellow center  Description automatically generated |  |
| 4uu | When prompted to enter a state, the user inputs ‘Vermont’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Vermont  State Capital Population Flower  Vermont Montpelier 647,818 Red Clover  A close-up of a flower  Description automatically generated |  |
| 4vv | When prompted to enter a state, the user inputs ‘Virginia’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Virginia  State Capital Population Flower  Virginia Richmond 8,752,297 American Dogwood  A white flowers on a tree  Description automatically generated |  |
| 4ww | When prompted to enter a state, the user inputs ‘Washington’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Washington  State Capital Population Flower  Washington Olympia 7,841,283 Coast Rhododendron  Close-up of a pink and white flower  Description automatically generated |  |
| 4xx | When prompted to enter a state, the user inputs ‘West Virginia’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: West Virginia  State Capital Population Flower  West Virginia Charleston 1,766,107 Rhododendron  A close up of a flower  Description automatically generated |  |
| 4yy | When prompted to enter a state, the user inputs ‘Wisconsin’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Wisconsin  State Capital Population Flower  Wisconsin Madison 5,931,367 Wood Violet  A purple flower with green leaves  Description automatically generated |  |
| 4zz | When prompted to enter a state, the user inputs ‘Wyoming’. Its name, capital, population and flower are printed and an image of its flower is displayed. | Enter a state: Wyoming  State Capital Population Flower  Wyoming Cheyenne 586,485 Indian Paintbrush  A close up of a flower  Description automatically generated |  |
| 5 | The user selects ‘c’ from the menu and a bar graph of the 5 most populated U.S. states is displayed. | Enter selection: c  \*\*Bar graph with the 5 most populated states (currently Pennsylvania, New York, Florida, Texas, and California) and their populations\*\* |  |
| 6 | The user selects ‘d’ from the menu and they are prompted to enter a state to update its population. | Enter selection: d  Update State’s Population  Enter a state: |  |
| 7a | When prompted to enter a state, the user input is blank. They are informed that no state was found and prompted to enter a state name again. | Enter a state:  State not found. Please enter a valid U.S. state.  Enter a state: |  |
| 7b | When prompted to enter a state, the user inputs a word that is not a state name. They are informed that no state was found and prompted to enter a state name again. | Enter a state: \*\*not a state name here\*\*  State not found. Please enter a valid U.S. state.  Enter a state: |  |
| 7c | When prompted to enter a state, the user inputs a valid U.S. state. They are then prompted to enter its new population. | Enter a state: \*\*valid state name here\*\*  Enter population: |  |
| 8a | When prompted to enter the population, the user input is blank. They are informed that population must be a positive integer and are prompted to enter the population again. | Enter population:  Invalid response. Population must be a positive integer. Please try again.  Enter population: |  |
| 8b | When prompted to enter the population, the user input is a word. They are informed that population must be a positive integer and are prompted to enter the population again. | Enter population: \*\*word here\*\*  Invalid response. Population must be a positive integer. Please try again.  Enter population: |  |
| 8c | When prompted to enter the population, the user enters a positive integer. The user is informed the selected state’s population has been updated. | Enter a state: Maryland  Enter population: 2222222  Updated Maryland's population to 2,222,222. |  |
| 9 | The user selects ‘d’ from the menu. They enter a valid state and updated population. They then select ‘b’ from the menu and enter the same state. The state’s data is printed including the updated population. | Enter selection: d  Update State's Population  Enter a state: Delaware  Enter population: 10000000  Updated Delaware's population to 10,000,000.  Please select an option:  a. Display all U.S. states in alphabetical order with their capital, population, and flower  b. Search for a U.S. state and display its capital, population, and an image of its flower  c. Display a bar graph of the top 5 most populated U.S. states  d. Update a state's population  e. Exit Program    Enter selection: b  Enter a state: Delaware  State Capital Population Flower  Delaware Dover 10,000,000 Peach Blossom |  |
| 10 | The user selects ‘d’ from the menu. They enter a state with a low population and update it to the highest population of all the states. They then select ‘c’ from the menu. A bar graph of the most populated U.S. states is displayed with the new state present. | Enter selection: d  Update State's Population  Enter a state: Delaware  Enter population: 40000000  Updated Delaware's population to 40,000,000.  Please select an option:  a. Display all U.S. states in alphabetical order with their capital, population, and flower  b. Search for a U.S. state and display its capital, population, and an image of its flower  c. Display a bar graph of the top 5 most populated U.S. states  d. Update a state's population  e. Exit Program    Enter selection: c  \*\*Bar graph with Delaware as most populated state with 40,000,000 people\*\* |  |
| 11 | The user selects ‘e’ from the menu. An exiting and thank you message is displayed and the application exits. | Enter selection: e  Exiting program. Thanks for using the U.S. State Data Application.  Process finished with exit code 0 |  |
| 12 | The user selects ‘f’ from the menu. They are informed that their selection is invalid and they must make a selection from a to e. They are prompted to try again. | Enter selection: f  Invalid menu selection. Please enter a valid option (a - e).  Please select an option:  a. Display all U.S. states in alphabetical order with their capital, population, and flower  b. Search for a U.S. state and display its capital, population, and an image of its flower  c. Display a bar graph of the top 5 most populated U.S. states  d. Update a state's population  e. Exit Program    Enter selection: |  |

**Pylint Results**

I was only able to achieve at 8.80/10 because of errors importing PIL and matplotlib. I was unable to find the solution and it was not affecting the program, so I ignored these two errors.

A screenshot of a computer

Description automatically generated