Instructions

The user will be given 3 options to choose from. The options are the Assignment 3 problems and are marked according the assignment question number (1,2 & 5). The user must enter the valid inputs otherwise will face an error and will be prompted to enter a valid input until done so.

Option1: the user must enter the size of the queue and the items in the queue by following the prompts on the screen.

Option 2: the user will be prompted to enter a word to check if it's a Palindrome or not and the program will tell the user if it is or not.

Option 5: the user will be shown the pre-existing data on the system about states and their capitals. Then the program will change the capital of California to Los Angeles and will be shown an updated data. Then the user will be prompted to enter a state name of which want to know the capital of. If the state name is in the system, the program will display the capital name or will display "not found" message is that state in not in the system.

Lastly the user will have the option to exit the program or to run the program from the beginning again.

See screenshots below of the program being used

Screenshot 1

```
Welcome to Assignment 3
Please enter the corresponding number of the Problem you wish to check:

1.      Write a new queue function called move_to_rear that moves the element currently at the front
        of the queue to the rear of the queue.The element that was second in line will be the new front
        element.Do these using functions push, front, and pop.

2.      As discussed in Chapter 5, a palindrome is a word that reads the same left to right as right
        to left.Write a recursive function that determines whether its argument string is a palindrome.

5.      Declare the map container stateDataMap to store pairs of the form (stateName, capitalName),
        where stateNameand capitalName are variables of type string :
        -- Write C++ statements that
           add the following pairs to stateDataMap : (Nebraska, Lincoln), (New York, Albany), (Ohio, Columbus),
           (California, Sacramento), (Massachusetts, Boston), and (Texas, Austin).
        -- Write a C++ method
           that outputs the data stored in stateDataMap.
        -- Write a C++ statement that changes the capital
           of California to Los Angeles
        -- Write a C++ method that outputs the capitalName using the stateName
           which will be entered by the user.
```

User is given options to run 3 different programs from Assignment 3. User must enter the numbers which corresponds to the problems

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Screenshot 2

```
2.      As discussed in Chapter 5, a palindrome is a word that reads the same left to right as right
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           that outputs the data stored in stateDataMap.
        -- Write a C++ statement that changes the capital
           of California to Los Angeles
        -- Write a C++ method that outputs the capitalName using the stateName
           which will be entered by the user.
1
Please enter the number of items you want in the queue: 4
Enter position 1
21
Enter position 2
22
Enter position 3
23
Enter position 4
24
The numbers you entered are
Front: 21
Back: 24

After performing the 'move_to_rear' operation you have
Front: 22
Back: 21




Press X to exit program.
OR
If you wish to check another Problem please enter a number again which corresponds with the problem:
```

Explained in screenshot 1

User enters option 1

User enters the size of the queue to be 4

User enters items in each positions

Program modified by the function "move_to_rear" and new front and last position of the queue is displayed

User is given option to exit the program or to check another option

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```
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           that outputs the data stored in stateDataMap.
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           of California to Los Angeles
        -- Write a C++ method that outputs the capitalName using the stateName
           which will be entered by the user.
2
Enter the word you want to check for Palindrome: greg
greg is not Palindrome




Press X to exit program.
OR
If you wish to check another Problem please enter a number again which corresponds with the problem:
```

Explained in screenshot 1

User enters option 2

User is prompted to enter the word. User enters 'greg'

Program determines 'greg' is not a Palindrome

Explained in screenshot 2

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Q Search

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```
1.      Write a new queue function called move_to_rear that moves the element currently at the front
        of the queue to the rear of the queue.The element that was second in line will be the new front
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        -- Write a C++ statement that changes the capital
           of California to Los Angeles
        -- Write a C++ method that outputs the capitalName using the stateName
           which will be entered by the user.
2
Enter the word you want to check for Palindrome: greg
greg is not Palindrome




Press X to exit program.
OR
If you wish to check another Problem please enter a number again which corresponds with the problem: 2
Enter the word you want to check for Palindrome: level
level is Palindrome




Press X to exit program.
OR
If you wish to check another Problem please enter a number again which corresponds with the problem:
```

Explained in screenshot 3

User is given the options to exit the program or run the program again.
the user selected option 2 again.

User enters the word "Level" this time
(Which is a Palindrome)

Program determines that the entered word is a Palindrome

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Cloudy

Q Search

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Welcome to Assignment 3 ─────────────
Please enter the corresponding number of the Problem you wish to check:

1.   Write a new queue function called move_to_rear that moves the element currently at the front
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5.   Declare the map container stateDataMap to store pairs of the form (stateName, capitalName),
        where stateNameand capitalName are variables of type string :   Explained in screenshot 1
        -- Write C++ statements that
           add the following pairs to stateDataMap : (Nebraska, Lincoln), (New York, Albany), (Ohio, Columbus),
           (California, Sacramento), (Massachusetts, Boston), and (Texas, Austin).
        -- Write a C++ method
           that outputs the data stored in stateDataMap.
        -- Write a C++ statement that changes the capital
           of California to Los Angeles
        -- Write a C++ method that outputs the capitalName using the stateName
           which will be entered by the user.

hiu ─────────────
Invalid input
Try again!   Couple of invalid entries were made and the
55   errors catching works perfectly. The user will
Invalid input   be prompted to enter valid input until done so
Try again!

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If you wish to check another Problem please enter a number again which corresponds with the problem: 5 ───────   Lastly user enters option 5

Data currently in the system:

State   : California
Capital : Sacramento

State   : Massachusetts
Capital : Boston

State   : Nebraska   Current data in the system is displayed
Capital : Lincoln

State   : New York
Capital : Albany

State   : Ohio
Capital : Columbus

State   : Texas
Capital : Austin

After changing the capital of Californi to Los Angeles ─────────────

State   : California
Capital : Los Angeles

State   : Massachusetts
Capital : Boston

State   : Nebraska   Program changes the capital of
Capital : Lincoln   California to Los Angeles. And the
                                                                                                         new updated data is displayed
State   : New York
Capital : Albany

State   : Ohio
Capital : Columbus

State   : Texas
Capital : Austin

Enter the name of the state you wish to find: | Tested in screenshot 7

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```
Capital : Boston

State   : Nebraska
Capital : Lincoln

State   : New York
Capital : Albany

State   : Ohio
Capital : Columbus

State   : Texas
Capital : Austin


After changing the capital of Californi to Los Angeles


State   : California
Capital : Los Angeles

State   : Massachusetts
Capital : Boston

State   : Nebraska
Capital : Lincoln

State   : New York
Capital : Albany

State   : Ohio
Capital : Columbus

State   : Texas
Capital : Austin


Enter the name of the state you wish to find: ohio
The capital of Ohio is Columbus



Press X to exit program.
OR
If you wish to check another Problem please enter a number again which corresponds with the problem:
```

Explained in screenshot 6

User is prompted to enter the name of the state they wish to find the capital of. User enters "Ohio" and the program finds it and displays the capital of Ohio in the next line

```
After changing the capital of Californi to Los Angeles


State   : California
Capital : Los Angeles

State   : Massachusetts
Capital : Boston

State   : Nebraska
Capital : Lincoln

State   : New York
Capital : Albany

State   : Ohio
Capital : Columbus

State   : Texas
Capital : Austin


Enter the name of the state you wish to find: kansas

!***Information for Kansas is not in our data***!




Press X to exit program.
OR
If you wish to check another Problem please enter a number again which corresponds with the problem: x

C:\Users\shahr\source\repos\CS303 Assignment 3\Debug\CS303 Assignment 3.exe (process 19712) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console when debugging stops.
Press any key to close this window . . .
```

Explained in screenshot 6

this time user enter "Kansas" for the state name and information on that state is not in the system so the program displays that error on in the next line.

The user is once again given the option to either exit program or to continue. The user chooses to exit this time by entering 'X'. And the program ends.