Activity No. 4.3	
Sorting and Searching Arrays	
Course Code: CPE 007	**Program:** Computer Engineering
Course Title: Computer Programming Logic and Design	**Date Performed: September 16, 2025**
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Name(s): Lopez, Andrei Dion C.	**Instructor: Engr. Jimlord M. Quejado**

6. Output

7. Supplementary Activity

Activity 1:

- Screenshot of Code:

```cpp
#include <iostream>
#include <string>
using namespace std;

#define SIZE 7

int main() {
    string day[SIZE] =  {"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"};
    int key;

        while (true) {

        cout << "Search Day: ";
        cin >> key;

        if (key >=0 && key < 7) {
            cout << "The day is: " << day[key]<< endl;
        }
        else{
            cout << "Error, no such day";
            break;
        }
    }
    return 0;
}
```

- Output of Code (label and compile ALL possible outputs):

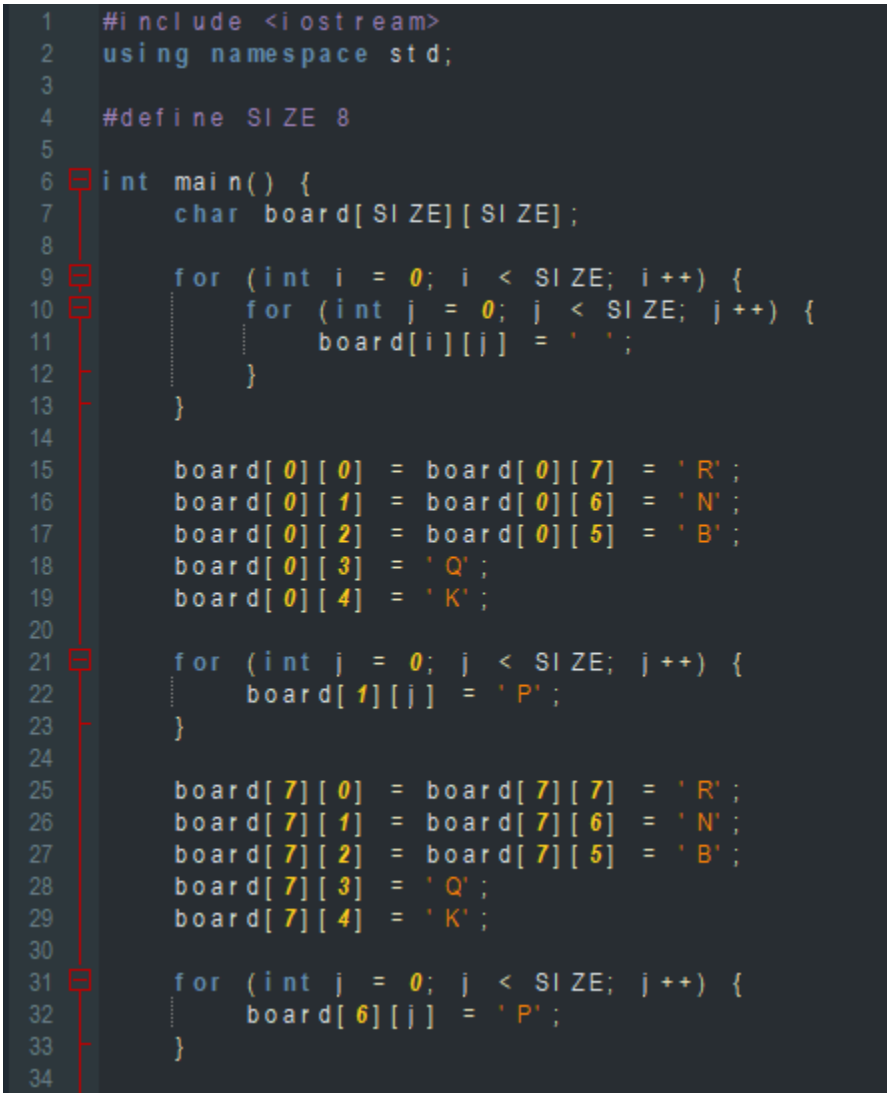
```
Search Day: 0
The day is: Sunday
Search Day: 1
The day is: Monday
Search Day: 2
The day is: Tuesday
Search Day: 3
The day is: Wednesday
Search Day: 4
The day is: Thursday
Search Day: 5
The day is: Friday
Search Day: 6
The day is: Saturday
Search Day: 7
Error, no such day
--------------------------------
Process exited after 6.385 seconds with return value 0
Press any key to continue . . .
```

- Short Analysis(min 5 sentences):

  Starting off I added the preprocessor directive "**#include <string>**" to allow the usage of the keyword string for the different days of the week. I then defined the value of size using the preprocessor command "**#define SIZE 7**" and proceeded with initializing the string array and the input value "key". using the while loop it will first ask for an input for the integer "key", after getting an input it would first proceed to the if statement. The if statement would check if "key" is a value greater than or equal to 0 **and** a value less than 7, the reason for this is for the program to output the error statement and end the program if it meets neither of those conditions. If the "key" value meets the conditions then it would output the value of that index in the string array.

Activity 2

- Screenshot of Code:



```
#include <iostream>
using namespace std;

#define SIZE 8

int main() {
    char board[SIZE][SIZE];

    for (int i = 0; i < SIZE; i++) {
        for (int j = 0; j < SIZE; j++) {
            board[i][j] = ' ';
        }
    }

    board[0][0] = board[0][7] = 'R';
    board[0][1] = board[0][6] = 'N';
    board[0][2] = board[0][5] = 'B';
    board[0][3] = 'Q';
    board[0][4] = 'K';

    for (int j = 0; j < SIZE; j++) {
        board[1][j] = 'P';
    }

    board[7][0] = board[7][7] = 'R';
    board[7][1] = board[7][6] = 'N';
    board[7][2] = board[7][5] = 'B';
    board[7][3] = 'Q';
    board[7][4] = 'K';

    for (int j = 0; j < SIZE; j++) {
        board[6][j] = 'P';
    }

```

```
34
35      for (int i = 0; i < SIZE; i++) {
36          for (int j = 0; j < SIZE; j++) {
37              cout << board[i][j] << " ";
38          }
39          cout << endl;
40      }
41
42      return 0;
43  }
44
```

- Output of Code (label and compile ALL possible outputs):

```
R N B Q K B N R
P P P P P P P P




P P P P P P P P
R N B Q K B N R

--------------------------------
Process exited after 0.4283 seconds with return value 0
Press any key to continue . . .
```

- Short Analysis(min 5 sentences):

  First I used the preprocessor command "**#define**" to set the keyword for SIZE to the integer of 8, after this I initialized an array that would create an empty chessboard, after which I set all elements of the array to be an empty space using a for loop, then I changed all elements of the first row of the array to have the rook, knight, bishop, king, and queen in their respective places, after of which I set the row underneath the first one to be all pawns using a for loop, I repeated this for the bottom rows as well, and then printed out the chessboard using the last for loop in the program.

8. Conclusion

Guide in creating a conclusion:

- Summary of lessons learned
- Analysis of the procedure
- Analysis of the supplementary activity
- Concluding statement / Feedback: How well did you think you did in this activity? What are your areas for improvement?

note: answer this in a paragraph form not bullet or per question.

This activity and lesson has expanded what I already know about arrays, using the arrays to sort out data and search what value is located in the index and print out its value, by using an if statement that would check if the inputted value correlates to the condition statements and is a real value otherwise it would print out an error statement and end the program, and by using a multi-dimensional array to print out multiple rows and columns of an array, change the values of the pre-existing elements of said array.