

```
1  // /
   -----
2  //Name                Sai Chaitanya Kilambi
3  //Course              CPSC 131 Data Structures, Fall, 2022
4  //Assignment          No.4 question:2
5  //Due date            09/21/2022
6  // Purpose:
7  // This program reverses the name that is present in the text file
8  //-----
   -----
9  // list of libraries
10 //
11 //importing the required libraries
12 #include <iostream>
13 #include <fstream>
14 #include<iomanip>
15 #include <string>
16
17 // A structure to represent a stack
18 template <class T, int n>
19 class Stack
20 {
21 private:
22     T Element[n];
23     int counter = 0;
24
25 public:
26     void clearStack()
27     {
28         counter = 0;
29     }
30     bool emptyStack()
31     {
32         return (counter == 0 ? true :
33                 false);
34     }
35     bool fullStack()
36     {
37         return (counter == n ? true :
38                 false);
39     }
40     void pushStack(T x)
41     {
42         Element[counter] = x;
43         counter++;
44     }
45     T popStack()
46     {
```

```
47         counter--;
48         return Element[counter];
49     }
50
51 };
52 std::string reverse(std::string str)
53 {     int n = str.size();
54     Stack<char,6>stack ;
55     //first of all push all characters to stack
56     for (int i = 0; i < n; i++)
57         stack.pushStack(str[i]);
58
59     // Pop all characters of string and
60     // put them back to str
61     for (int i = 0; i < n; i++)
62         str[i] = stack.popStack();
63     return str;
64 }
65 int main()
66 {
67     std::string fName = "file.txt";
68     std::fstream file;
69     file.open(fName,std::ios::in);
70     //open a file to perform read operation using file object
71     if (file.is_open())
72     {     std::string name;
73         while(getline(file, name))
74         { //read data from file object and put it into string.
75             std::cout<<std::left<<std::setw(15) << std::setfill('-')<<name
76                 <<std::right<<std::setw(15) << reverse(name) << std::endl;
77         }
78         file.close(); //close the file object.
79     }
80     return 0;
81 }
82
```