Internet Application Development
Lab#1

Submitted To	Submitted By
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CODE IMPLEMENTATION

Question:

Consider the table shown in Figure 1 and Code Listing 1. Try to develop a solution of the following problem?

Write code using C/C++ which performs following tasks:

a) Prompt the user to enter number of columns?
b) Prompt the user to enter number of rows?
c) Get data cell by cell from user using a loop?
d) Generate an html page to display above data in a table?
e) Store the page in a folder on desktop.

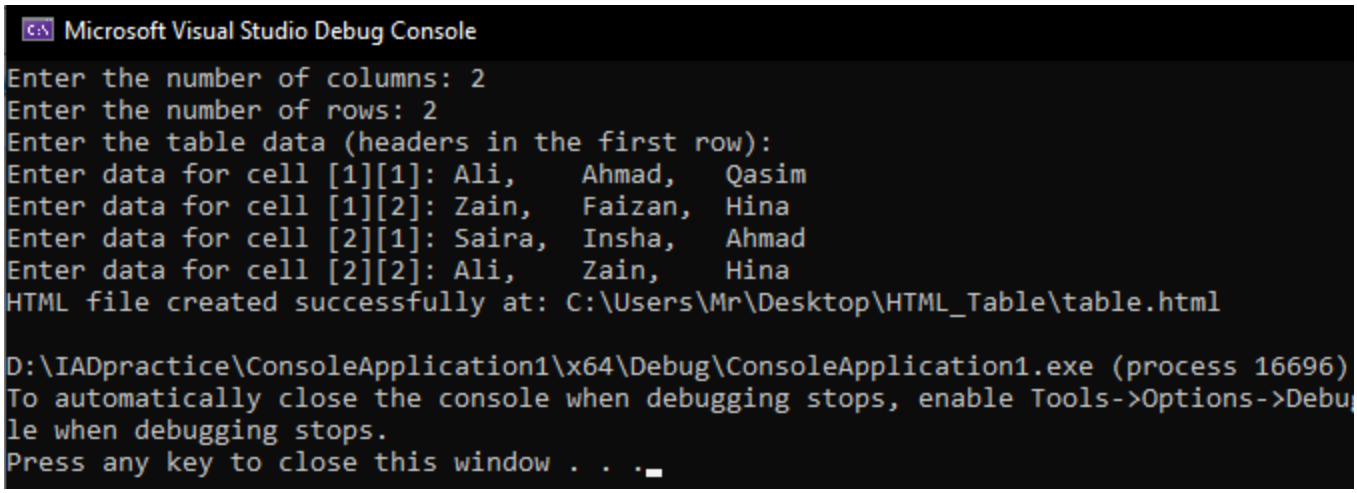
.cpp

```
#include <iostream>
#include <fstream>
#include <string>
#include <vector>
#include <cstdlib>

using namespace std;

void getTableDimensions(int& rows, int& cols) {
   cout << "Enter the number of columns: ";
   cin >> cols;
   cout << "Enter the number of rows: ";
   cin >> rows;
}

vector<vector<string>> getTableData(int rows, int cols) {
   vector<vector<string>> table(rows, vector<string>(cols));
   cout << "Enter the table data (headers in the first row):\n";
   for (int i = 0; i < rows; i++) {
      for (int j = 0; j < cols; j++) {
         cout << "Enter data for cell [" << i + 1 << "][" << j + 1 << "]: ";
         cin >> ws;
         getline(cin, table[i][j]);
      }
   }
   return table;
}


string generateHTMLContent(const vector<vector<string>>& table, int rows, int cols) {
   string htmlContent = R"(<!DOCTYPE html>
<html>
<head>
```

```
<style>
table {
   font-family: arial, sans-serif;
   border-collapse: collapse;
   width: 100%;


}
td, th {
   border: 1px solid #dddddd;
   text-align: left;
   padding: 8px;
}
tr:nth-child(even) {
   background-color: #dddddd;
}
</style>
</head>
<body>
<h2>HTML Table</h2>
<table>
)";


   for (int i = 0; i < rows; i++) {
      htmlContent += "  <tr>\n";
      for (int j = 0; j < cols; j++) {
         if (i == 0)
            htmlContent += "    <th>" + table[i][j] + "</th>\n";
         else
            htmlContent += "    <td>" + table[i][j] + "</td>\n";
      }
      htmlContent += "  </tr>\n";
   }

   htmlContent += R"(</table>
</body>
</html>)";
   return htmlContent;
}


string getDesktopPath() {
   char* userProfile = nullptr;
   size_t len;
   _dupenv_s(&userProfile, &len, "USERPROFILE");
   if (userProfile == nullptr) {
      cerr << "Unable to get user profile path.\n";
      exit(1);
   }
   string desktopPath = string(userProfile) + "\\Desktop\\HTML_Table";
```

```
    free(userProfile);
    string command = "mkdir \"" + desktopPath + "\" >nul 2>&1";
    system(command.c_str());
    return desktopPath + "\\table.html";
}


void saveHTMLToFile(const string& htmlContent, const string& filePath) {
    ofstream htmlFile(filePath);

    if (htmlFile.is_open()) {
        htmlFile << htmlContent;
        htmlFile.close();
        cout << "HTML file created successfully at: " << filePath << endl;
    }
    else {
        cerr << "Unable to create HTML file." << endl;
    }
}

int main() {
    int rows, cols;


    getTableDimensions(rows, cols);


    vector<vector<string>> table = getTableData(rows, cols);


    string htmlContent = generateHTMLContent(table, rows, cols);


    string filePath = getDesktopPath();


    saveHTMLToFile(htmlContent, filePath);

    return 0;
}
```

Output:


Microsoft Visual Studio Debug Console
Enter the number of columns: 2
Enter the number of rows: 2
Enter the table data (headers in the first row):
Enter data for cell [1][1]: Ali, Ahmad, Qasim
Enter data for cell [1][2]: Zain, Faizan, Hina
Enter data for cell [2][1]: Saira, Insha, Ahmad
Enter data for cell [2][2]: Ali, Zain, Hina
HTML file created successfully at: C:\Users\Mr\Desktop\HTML_Table\table.html
D:\IADpractice\ConsoleApplication1\x64\Debug\ConsoleApplication1.exe (process 16696)
To automatically close the console when debugging stops, enable Tools->Options->Debu
le when debugging stops.
Press any key to close this window . . .

HtmlTable:

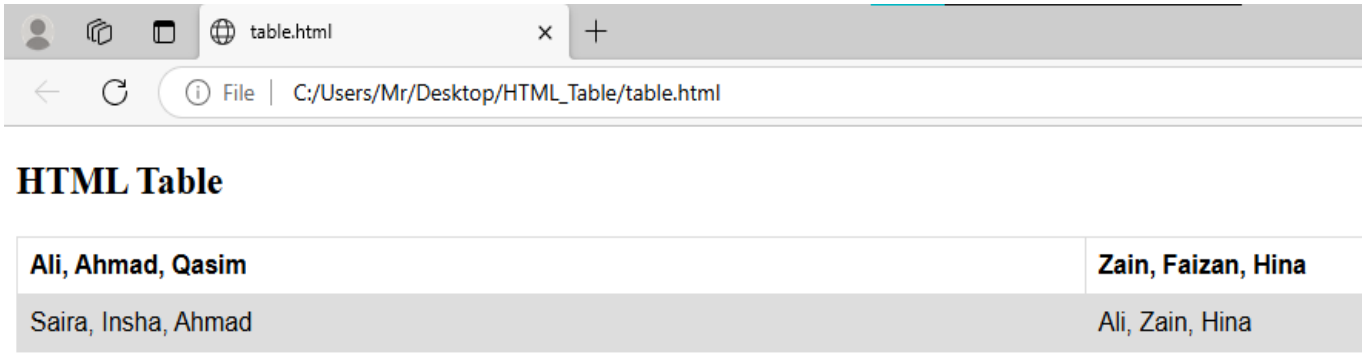


table.html
File
C:/Users/Mr/Desktop/HTML_Table/table.html
HTML Table
Ali, Ahmad, Qasim
Zain, Faizan, Hina
Saira, Insha, Ahmad
Ali, Zain, Hina