



**COMSATS University Islamabad, Attock Campus**

**Department of Computer Science**

Assignment 2:

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**COURSE : DATA STRUCTURES**

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**SUBMITTED TO : MR M.KAMRAN**

## CODE :

```
#include <iostream>

#include <stack>

#include <string>

using namespace std;

class BrowserHistory {

private:

    stack<string> backStack;

    stack<string> forwardStack;

    string currentPage;

public:

    BrowserHistory() : currentPage("Home") {}

    void visit(const string& page) {

        if (!currentPage.empty()) {

            backStack.push(currentPage);

        }

        currentPage = page;

        while (!forwardStack.empty()) {

            forwardStack.pop();

        }

        displayCurrentPage();

    }

    void goBack() {

        if (backStack.empty()) {

            cout << "No pages in back history!" << endl;

            return;

        }

        forwardStack.push(currentPage);

        currentPage = backStack.top();

        backStack.pop();

        displayCurrentPage();

    }

};
```

```

}

void goForward() {
    if (forwardStack.empty()) {
        cout << "No pages in forward history!" << endl;
        return;
    }
    backStack.push(currentPage);
    currentPage = forwardStack.top();
    forwardStack.pop();
    displayCurrentPage();
}

void displayCurrentPage() {
    cout << "Current Page: " << currentPage << endl;
}

};

int main() {
    BrowserHistory browser;
    string command, page;
    while (true) {
        cout << "Enter command (Visit, Back, Forward, or Exit): ";
        cin >> command;
        if (command == "Visit") {
            cout << "Enter page name: ";
            cin >> page;
            browser.visit(page);
        } else if (command == "Back") {
            browser.goBack();
        } else if (command == "Forward") {
            browser.goForward();
        } else if (command == "Exit") {
            break;
        }
    }
}

```

```

    } else {

        cout << "Invalid command!" << endl;

    }

}

return 0;

}

```

## OUTPUT :

The screenshot shows a web browser window with the URL `programiz.com/cpp-programming/online-compiler/`. The page features a header with the Programiz logo, a banner for "Premium Coding Courses by Programiz", and a "Programiz PRO" button. Below the header, the compiler interface is visible, showing a file named `main.cpp` with the following code:

```

64  cout << "Enter command (Visit, Back, Forward, or Exit): ";
65  cin >> command;
66
67  if (command == "Visit") {
68      cout << "Enter page name: ";
69      cin >> page;
70      browser.visit(page);
71  } else if (command == "Back") {
72      browser.goBack();
73  } else if (command == "Forward") {
74      browser.goForward();
75  } else if (command == "Exit") {
76      break;
77  } else {
78      cout << "Invalid command!" << endl;
79  }
80
81
82  return 0;
83 }

```

The "Output" panel on the right shows the execution results:

```

/tmp/MIZJoYdxUV.o
Enter command (Visit, Back, Forward, or Exit): Visit
Enter page name: products
Current Page: products
Enter command (Visit, Back, Forward, or Exit): Visit
Enter page name: home
Current Page: home
Enter command (Visit, Back, Forward, or Exit): Back
Current Page: products
Enter command (Visit, Back, Forward, or Exit): Forward
Current Page: home
Enter command (Visit, Back, Forward, or Exit): Visit
Enter page name: store
Current Page: store
Enter command (Visit, Back, Forward, or Exit):

```

The Windows taskbar at the bottom shows the system clock as 8:35 PM on 10/24/2024, with a temperature of 22°C.