

Name: Nazil Iqbal
Application ID: F24CSC025

Scenario 1: Cafeteria Menu Ordering System

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Sale ends in 00d : 13hrs : 35mins : 22s

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main.cpp

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Run

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int choice;
6     double totalBill = 0;
7
8     cout << "Welcome to the Cafeteria!\n";
9
10    do {
11        cout << "\nMenu:\n";
12        cout << "1. Tea - $2\n";
13        cout << "2. Coffee - $3\n";
14        cout << "3. Sandwich - $5\n";
15        cout << "4. Burger - $7\n";
16        cout << "5. Exit\n";
17        cout << "Please select an item (1-5): ";
18        cin >> choice;
19
20        switch (choice) {
21            case 1:
22                cout << "You selected Tea. Adding $2 to your bill.\n";
23                totalBill += 2;
24                break;
25            case 2:
26                cout << "You selected Coffee. Adding $3 to your bill.\n";
27                totalBill += 3;
28                break;
29            case 3:
30                cout << "You selected Sandwich. Adding $5 to your bill.\n";
31                totalBill += 5;
32                break;
```

Output

Clear

```
Welcome to the Cafeteria!

Menu:
1. Tea - $2
2. Coffee - $3
3. Sandwich - $5
4. Burger - $7
5. Exit
Please select an item (1-5): 4
You selected Burger. Adding $7 to your bill.

Menu:
1. Tea - $2
2. Coffee - $3
3. Sandwich - $5
4. Burger - $7
5. Exit
Please select an item (1-5): 3
You selected Sandwich. Adding $5 to your bill.

Menu:
1. Tea - $2
2. Coffee - $3
3. Sandwich - $5
4. Burger - $7
5. Exit
Please select an item (1-5): 5
Exiting the menu...

Thank you for your order!
Your total bill is: $12
```

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```
22     cout << "You selected Tea. Adding $2 to your bill.\n";
23     totalBill += 2;
24     break;
25 case 2:
26     cout << "You selected Coffee. Adding $3 to your bill.\n";
27     totalBill += 3;
28     break;
29 case 3:
30     cout << "You selected Sandwich. Adding $5 to your bill.\n";
31     totalBill += 5;
32     break;
33 case 4:
34     cout << "You selected Burger. Adding $7 to your bill.\n";
35     totalBill += 7;
36     break;
37 case 5:
38     cout << "Exiting the menu...\n";
39     break;
40 default:
41     cout << "Invalid choice. Please select a valid option (1-5).\n";
42     break;
43 }
44 } while (choice != 5);
45
46 cout << "\nThank you for your order!\n";
47 cout << "Your total bill is: $" << totalBill << "\n";
48
49 return 0;
50 }
51
52
```

Output

Clear

```
Welcome to the Cafeteria!

Menu:
1. Tea - $2
2. Coffee - $3
3. Sandwich - $5
4. Burger - $7
5. Exit
Please select an item (1-5): 4
You selected Burger. Adding $7 to your bill.

Menu:
1. Tea - $2
2. Coffee - $3
3. Sandwich - $5
4. Burger - $7
5. Exit
Please select an item (1-5): 3
You selected Sandwich. Adding $5 to your bill.

Menu:
1. Tea - $2
2. Coffee - $3
3. Sandwich - $5
4. Burger - $7
5. Exit
Please select an item (1-5): 5
Exiting the menu...

Thank you for your order!
Your total bill is: $12
```

Scenario 2: Simple ATM Simulator

Name: Nazil Iqbal
Application ID: F24CSC025

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main.cpp

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Run

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     double balance = 1000.0;
6     int choice;
7     double amount;
8
9     cout << "Welcome to the ATM!\n";
10
11     do {
12         cout << "\nATM Menu:\n";
13         cout << "1. Check Balance\n";
14         cout << "2. Withdraw Money\n";
15         cout << "3. Deposit Money\n";
16         cout << "4. Exit\n";
17         cout << "Please select an option (1-4): ";
18         cin >> choice;
19
20         switch (choice) {
21             case 1:
22                 cout << "Your current balance is: $" << balance << "\n";
23                 break;
24             case 2:
25                 cout << "Enter the amount to withdraw: $";
26                 cin >> amount;
27                 if (amount > 0 && amount <= balance) {
28                     balance -= amount;
29                     cout << "Withdrawal successful. Your new balance is: $" << balance <<
                        "\n";
30                 } else if (amount > balance) {
31                     cout << "Insufficient funds. Your current balance is: $" << balance <<
                        "\n";
32                 } else {
33                     cout << "Invalid amount. Please enter a positive value.\n";
34                 }
35                 break;
```

Output

Clear

```
Welcome to the ATM!

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 1
Your current balance is: $1000

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 2
Enter the amount to withdraw: $500
Withdrawal successful. Your new balance is: $500

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 3
Enter the amount to deposit: $1500
Deposit successful. Your new balance is: $2000

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 4
Thank you for using the ATM. Goodbye!
```

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```
25     cout << "Enter the amount to withdraw: $";
26     cin >> amount;
27     if (amount > 0 && amount <= balance) {
28         balance -= amount;
29         cout << "Withdrawal successful. Your new balance is: $" << balance <<
            "\n";
30     } else if (amount > balance) {
31         cout << "Insufficient funds. Your current balance is: $" << balance <<
            "\n";
32     } else {
33         cout << "Invalid amount. Please enter a positive value.\n";
34     }
35     break;
36     case 3:
37         cout << "Enter the amount to deposit: $";
38         cin >> amount;
39         if (amount > 0) {
40             balance += amount;
41             cout << "Deposit successful. Your new balance is: $" << balance << "\n";
42         } else {
43             cout << "Invalid amount. Please enter a positive value.\n";
44         }
45         break;
46     case 4: // Exit
47         cout << "Thank you for using the ATM. Goodbye!\n";
48         break;
49     default:
50         cout << "Invalid choice. Please select a valid option (1-4).\n";
51         break;
52 }
53
54 } while (choice != 4);
55
56 return 0;
57 }
58
```

Output

Clear

```
Welcome to the ATM!

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 1
Your current balance is: $1000

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 2
Enter the amount to withdraw: $500
Withdrawal successful. Your new balance is: $500

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 3
Enter the amount to deposit: $1500
Deposit successful. Your new balance is: $2000

ATM Menu:
1. Check Balance
2. Withdraw Money
3. Deposit Money
4. Exit
Please select an option (1-4): 4
Thank you for using the ATM. Goodbye!
```

Scenario 3: Odd or Even Counter

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Sale ends in 00d : 13hrs : 26mins : 38s

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main.cpp

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Run

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int number;
6     int oddCount = 0;
7     int evenCount = 0;
8
9     cout << "Enter numbers to check if they are odd or even (enter 0 to stop):\n";
10
11     while (true) {
12         cout << "Enter a number: ";
13         cin >> number;
14
15         if (number == 0) {
16             break;
17         }
18
19         if (number % 2 == 0) {
20             evenCount++;
21         } else {
22             oddCount++;
23         }
24     }
25
26     cout << "\nTotal even numbers: " << evenCount << "\n";
27     cout << "Total odd numbers: " << oddCount << "\n";
28
29     return 0;
30 }
31
```

Output

Clear

Enter numbers to check if they are odd or even (enter 0 to stop):
Enter a number: 4
Enter a number: 8
Enter a number: 9
Enter a number: 2
Enter a number: 1
Enter a number: 5
Enter a number: 9
Enter a number: 0

Total even numbers: 3
Total odd numbers: 4

=== Code Execution Successful ===

Scenario 4: Simple Calculator

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Sale ends in 00d : 13hrs : 21mins : 33s

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main.cpp

Share

Run

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int choice;
6     double num1, num2, result;
7
8     cout << "Welcome to the Simple Calculator!\n";
9
10    do {
11        cout << "\nCalculator Menu:\n";
12        cout << "1. Addition\n";
13        cout << "2. Subtraction\n";
14        cout << "3. Multiplication\n";
15        cout << "4. Division\n";
16        cout << "5. Exit\n";
17        cout << "Choose an operation (1-5): ";
18        cin >> choice;
19
20        switch (choice) {
21            case 1:
22                cout << "Enter two numbers: ";
23                cin >> num1 >> num2;
24                result = num1 + num2;
25                cout << "Result: " << num1 << " + " << num2 << " = " << result << "\n";
26                break;
27            case 2:
28                cout << "Enter two numbers: ";
29                cin >> num1 >> num2;
30                result = num1 - num2;
31                cout << "Result: " << num1 << " - " << num2 << " = " << result << "\n";
32                break;
33            case 3:
34                cout << "Enter two numbers: ";
35                cin >> num1 >> num2;
36                result = num1 * num2;
37                cout << "Result: " << num1 << " * " << num2 << " = " << result << "\n";
38                break;
39            case 4:
40                cout << "Enter two numbers: ";

```

Output

Clear

Welcome to the Simple Calculator!

Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Choose an operation (1-5): 1
Enter two numbers: 5 9
Result: 5 + 9 = 14

Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Choose an operation (1-5): 3
Enter two numbers: 5 9
Result: 5 * 9 = 45

Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Choose an operation (1-5): 4
Enter two numbers: 9 5
Result: 9 / 5 = 1.8

Calculator Menu:
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. Exit
Choose an operation (1-5): 6
Invalid choice. Please select a valid option (1-5).

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main.cpp

23 cin >> num1 >> num2;

24 result = num1 + num2;

25 cout << "Result: " << num1 << " + " << num2 << " = " << result << "\n";

26 break;

27 case 2:

28 cout << "Enter two numbers: ";

29 cin >> num1 >> num2;

30 result = num1 - num2;

31 cout << "Result: " << num1 << " - " << num2 << " = " << result << "\n";

32 break;

33 case 3:

34 cout << "Enter two numbers: ";

35 cin >> num1 >> num2;

36 result = num1 * num2;

37 cout << "Result: " << num1 << " * " << num2 << " = " << result << "\n";

38 break;

39 case 4:

40 cout << "Enter two numbers: ";

41 cin >> num1 >> num2;

42 if (num2 != 0) {

43 result = num1 / num2;

44 cout << "Result: " << num1 << " / " << num2 << " = " << result << "\n";

45 } else {

46 cout << "Error: Division by zero is not allowed.\n";

47 }

48 break;

49 case 5:

50 cout << "Exiting the calculator. Thank you!\n";

51 break;

52 default:

53 cout << "Invalid choice. Please select a valid option (1-5).\n";

54 break;

55 }

56 }

57 } while (choice != 5);

58 }

59 return 0;

60 }

61 }

Output

Clear

1. Addition

2. Subtraction

3. Multiplication

4. Division

5. Exit

Choose an operation (1-5): 3

Enter two numbers: 5 9

Result: 5 * 9 = 45

Calculator Menu:

1. Addition

2. Subtraction

3. Multiplication

4. Division

5. Exit

Choose an operation (1-5): 4

Enter two numbers: 9 5

Result: 9 / 5 = 1.8

Calculator Menu:

1. Addition

2. Subtraction

3. Multiplication

4. Division

5. Exit

Choose an operation (1-5): 6

Invalid choice, Please select a valid option (1-5).

Calculator Menu:

1. Addition

2. Subtraction

3. Multiplication

4. Division

5. Exit

Choose an operation (1-5): 5

Exiting the calculator. Thank you!

=== Code Execution Successful ===

Scenario 5: Password Checker

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Sale ends in 00d : 13hrs : 17mins : 23s

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Programiz PRO >

main.cpp

1 #include <iostream>

2 #include <string>

3 using namespace std;

4

5 int main() {

6 const string predefinedPassword = "1234";

7 string enteredPassword;

8 const int maxAttempts = 3;

9

10 cout << "Password Checker\n";

11

12 for (int attempt = 1; attempt <= maxAttempts; attempt++) {

13 cout << "Attempt " << attempt << " of " << maxAttempts << ": Enter your

14 password: ";

15 cin >> enteredPassword;

16

17 if (enteredPassword == predefinedPassword) {

18 cout << "Access granted\n";

19 break;

20 } else {

21 cout << "Incorrect password.\n";

22 if (attempt == maxAttempts) {

23 cout << "Access denied. You have used all attempts.\n";

24 }

25 }

26 }

27 return 0;

28 }

29 }

Output

Clear

Password Checker

Attempt 1 of 3: Enter your password: 1245

Incorrect password.

Attempt 2 of 3: Enter your password: 1234

Access granted

=== Code Execution Successful ===

Scenario 6: Grade Calculator

Name: Nazil Iqbal
Application ID: F24CSC025

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main.cpp

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Run

Output

Clear

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int marks;
6     char choice;
7
8     cout << "Welcome to the Grade Calculator!\n";
9
10    do {
11        cout << "Enter marks (0-100): ";
12        cin >> marks;
13
14        if (marks < 0 || marks > 100) {
15            cout << "Invalid marks! Please enter a value between 0 and 100.\n";
16        } else {
17
18            if (marks >= 90) {
19                cout << "Grade: A\n";
20            } else if (marks >= 80) {
21                cout << "Grade: B\n";
22            } else if (marks >= 70) {
23                cout << "Grade: C\n";
24            } else if (marks >= 60) {
25                cout << "Grade: D\n";
26            } else {
27                cout << "Grade: F\n";
28            }
29
30            cout << "Do you want to calculate another grade? (y/n): ";
31            cin >> choice;
32
33        } while (choice == 'y' || choice == 'Y');
34
35        cout << "Thank you for using the Grade Calculator. Goodbye!\n";
36
37        return 0;
38    }
```

```
Welcome to the Grade Calculator!
Enter marks (0-100): 101
Invalid marks! Please enter a value between 0 and 100.
Do you want to calculate another grade? (y/n): y
Enter marks (0-100): 70
Grade: C
Do you want to calculate another grade? (y/n): n
Thank you for using the Grade Calculator. Goodbye!

=== Code Execution Successful ===
```

Scenario 7: Number Divisors

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Sale ends in 00d : 13hrs : 09mins : 38s

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main.cpp

Share

Run

Output

Clear

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int number;
6
7     cout << "Enter a positive integer: ";
8     cin >> number;
9
10    if (number <= 0) {
11        cout << "Invalid input! Please enter a positive integer.\n";
12        return 1;
13    }
14
15    cout << "The divisors of " << number << " are: ";
16
17    for (int i = 1; i <= number; i++) {
18        if (number % i == 0) {
19            cout << i << " ";
20        }
21    }
22
23    cout << endl;
24    return 0;
25 }
```

```
Enter a positive integer: 16
The divisors of 16 are: 1 2 4 8 16

=== Code Execution Successful ===
```

Scenario 8: Reverse Number Pattern

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Application ID: F24CSC025

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main.cpp

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Run

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int n;
6
7     cout << "Enter a positive integer: ";
8     cin >> n;
9
10    if (n <= 0) {
11        cout << "Invalid input! Please enter a positive integer.\n";
12        return 1;
13    }
14
15    for (int i = n; i >= 1; i--) {
16        for (int j = i; j >= 1; j--) {
17            cout << j << " ";
18        }
19        cout << endl;
20    }
21    return 0;
22 }
23
```

Output

Clear

Enter a positive integer: 5
5 4 3 2 1
4 3 2 1
3 2 1
2 1
1

=== Code Execution Successful ===

Scenario 9: Square and Cube Table

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main.cpp

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Run

```
1 #include <iostream>
2 #include <iomanip>
3 using namespace std;
4
5 int main() {
6     int n;
7
8     cout << "Enter a positive integer: ";
9     cin >> n;
10
11    if (n <= 0) {
12        cout << "Invalid input! Please enter a positive integer.\n";
13        return 1;
14    }
15
16    cout << setw(10) << "Number"
17         << setw(10) << "Square"
18         << setw(10) << "Cube" << endl;
19
20    for (int i = 1; i <= n; i++) {
21        cout << setw(10) << i
22             << setw(10) << i * i
23             << setw(10) << i * i * i << endl;
24    }
25
26    return 0;
27 }
28
```

Output

Clear

Enter a positive integer: 3

Number	Square	Cube
1	1	1
2	4	8
3	9	27

=== Code Execution Successful ===