Hands-on Activity 2.1	
Control Structures	
Course Code: CPE007	**Program:** Computer Engineering
Course Title: Programming Logic and Design	**Date Performed:** 08/6/2025
Section: CPE11S1	**Date Submitted: 0**8/6/2025
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6. Output

1.

```
Start
   Input accountNumber
   While accountNumber is not -1
       Input beginningBalance
       Input totalCharges
       Input totalCredits
       Input creditLimit
       Set newBalance = beginningBalance + totalCharges - totalCredits
       If newBalance > creditLimit then
          Output "Account: ", accountNumber
          Output "Credit limit: ", creditLimit
          Output "Balance: ", newBalance
          Output "Credit Limit Exceeded."
       Else
          Output "Account: ", accountNumber
          Output "Credit limit: ", creditLimit
          Output "Balance: ", newBalance
          Output "Within credit limit."
      End if
      Input accountNumber
   End while
      Output "Program ends."
Stop
```

main.cpp

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

int main() {
    int accountNumber;
    float beginningBalance;
    float totalCharges;
    float totalCredits;
    float creditLimit;
    float newBalance;

    cout << fixed << setprecision(2);

    cout << "Enter account number (-1 to stop):";
    cin >> accountNumber;

    while (accountNumber != -1) {
        cout << "Enter beginning balance: ";
        cin >> beginningBalance;

        cout << "Enter total charges: ";
        cin >> totalCharges;

        cout << "Enter total credits: ";
        cin >> totalCredits;

        cout << "Enter credit limit: ";
        cin >> creditLimit;
```

Output

```
Account: 100
Credit limit: 100000.00
Balance: 6752945.00
Credit Limit Exceeded.

Enter account number (-1 to stop): 200
Enter beginning balance: 78364873
Enter total charges: 400
Enter total credits: 500
Enter credit limit: 5500
Account: 200
Credit limit: 5500.00
Balance: 78364768.00
Credit Limit Exceeded.

Enter account number (-1 to stop): 330
Enter beginning balance: 79875
Enter total charges: 777
Enter total credits: 444
Enter credit limit: 90000
Account: 330
Credit limit: 90000.00
Balance: 80208.00
Within credit limit.

Enter account number (-1 to stop): -1
Program end.


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

2.

Start
  Set totalMiles = 0
  Set totalGallons = 0

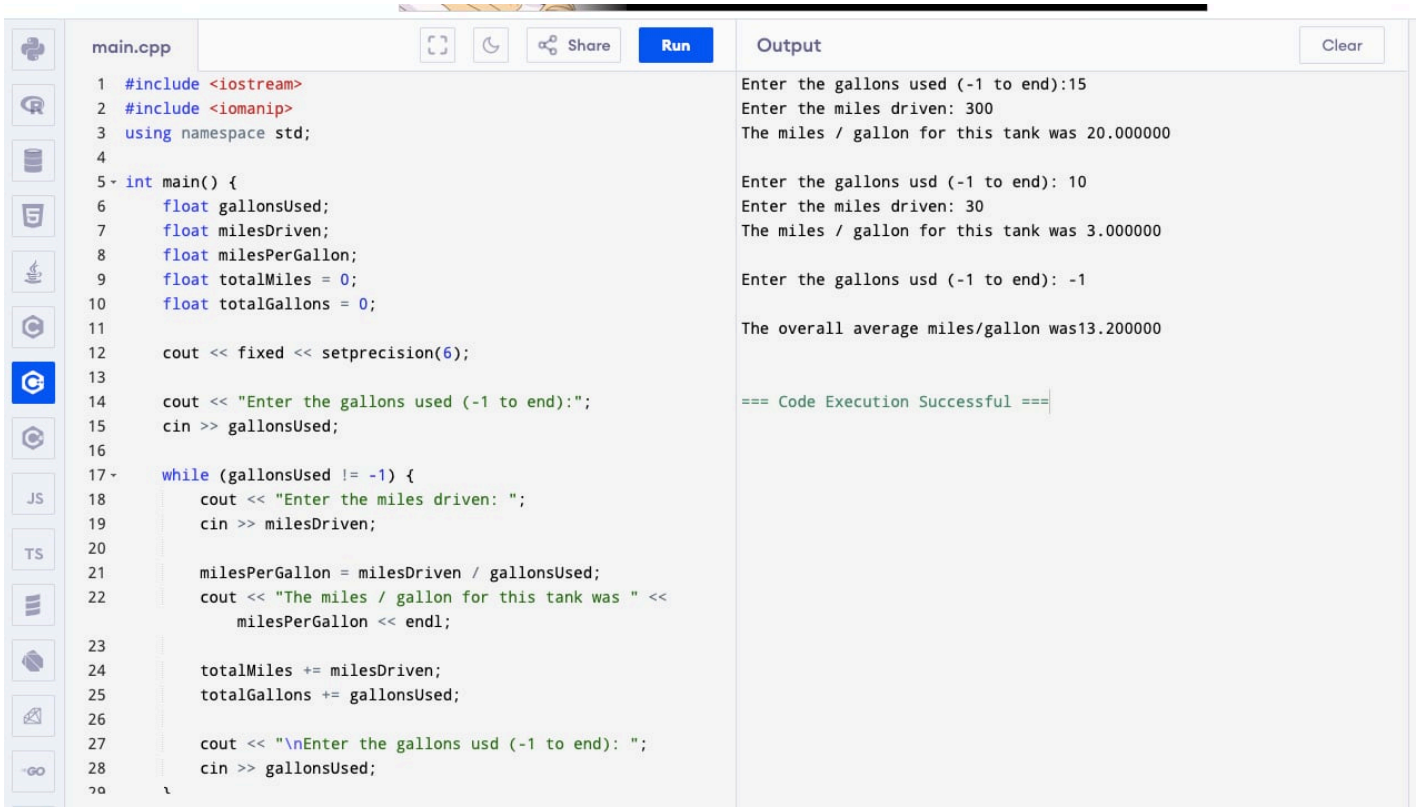
  Output "Enter the gallons used (-1 to end): "
  Input gallonsUsed

  While gallonsUsed is not equal to -1
  Output "Enter the miles driven: "
  Input milesDriven

  Set milesPerGallon = milesDriven / gallonsUsed
  Output "The miles/gallon for this tank was ", milesPerGallon

  totalMiles = totalMiles + milesDriven
  totalGallons = totalGallons + gallonsUsed

  Output "Enter the gallons used (-1 to end): "
  Input gallonsUsed
End while
  If totalGallons > 0 then
    Set overallAverage = totalMiles / totalGallons
    Output "The overall average miles/gallon was ", overallAverage
  End if
Stop



3.

Start

Input Weight

If weight > 1000 then

Output "Parcel exceeds maximum weight limit."

Else

If weight <= 100 then

cost ← 2.00

Else if weight <= 300 then

cost ← 5.00

Else

cost ← 5.00

extraWeight ← weight - 300

extraUnits ← extraWeight / 100

If extraWeight mod 100 ≠ 0 then

extraUnits ← extraUnits + 1

End if

cost ← cost + (extraUnits * 2.00)

End if

Output "The cost of sending the parcel is: P", cost

End if

Stop

main.cpp

Share | Run

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

int main() {
    int weight;
    float cost;

    cout << fixed << setprecision(2);

    cout << "Enter weight of parcel in grams:";
    cin >> weight;

    if (weight > 100) {
        cout << "Parcel exceeds maximum weight limit." << endl;
    } else {
        if (weight <= 100) {
            cost = 2.00;
        }
        else if (weight <= 300) {
            cost = 5.00;
        }
        else {
            cost = 5.00;
            int extrememeweight = weight - 300;
            int extraunits = extrememeweight / 100;

            if (extrememeweight % 100 != 0) {
                extraunits += 1;
```

Output | Clear

```
Enter weight of parcel in grams:100
The cost of sending the parcel is: P2.00


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

Output

```
Enter weight of parcel in grams:300
The cost of sending the parcel is: P5.00


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

Output

```
Enter weight of parcel in grams:1000
The cost of sending the parcel is: P7.00


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

Output

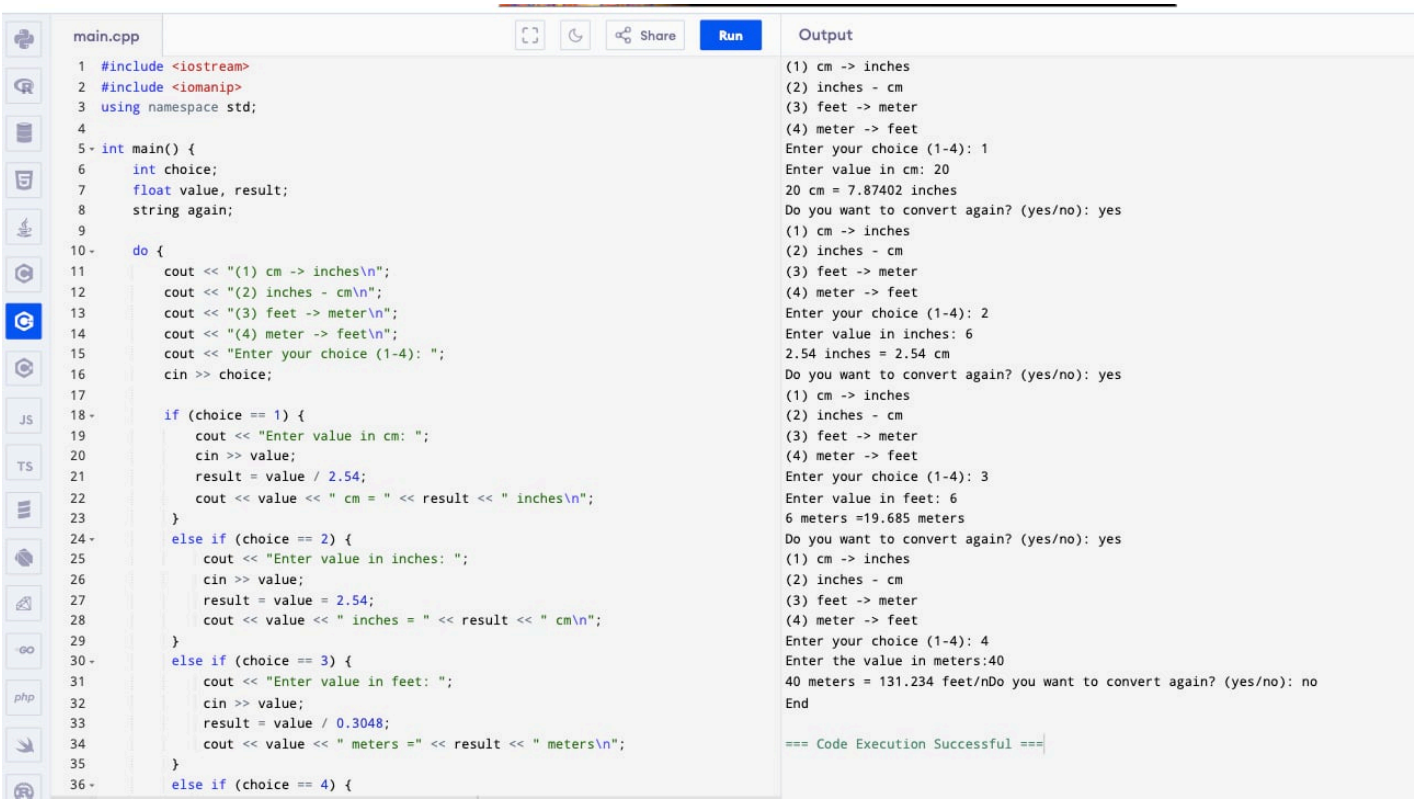
```
Enter weight of parcel in grams:20202020
Parcel exceeds maximum weight limit.


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

4.

```
Start
do
output "(1) cm -> inches"
output "(2) inches -> cm"
output "(3) feet -> meter"
output "(4) meter -> feet"
output "Enter your choice (1-4): "
input choice
if choice == 1 then
output "Enter value in cm: "
input value
result = value / 2.54
output value, " cm = ", result, " inches"
else if choice == 2 then
output "Enter value in inches: "
input value
result = value * 2.54
output value, " inches = ", result, " cm"
else if choice == 3 then
output "Enter value in feet: "
input value
result = value * 0.3048
output value, " feet = ", result, " meters"
else if choice == 4 then
output "Enter value in meters: "
input value
result = value / 0.3048 output value, " meters = ", result, " feet"
else
output "Invalid choice. Please select 1-4."
end if
output "Do you want to convert again? (yes/no): "
input again
```

while again == "yes" or again == "Yes"
output “End”
stop



5.
Start
Repeat
Output "(1) Area of Circle"
Output "(2) Area of Rectangle"
Output "(3) Area of Triangle"
Output "(4) Area of Square"
Output "Enter your choice (1-4): "
Input choice

If choice = 1 then
Output "Enter radius: "
Input radius
area = 3.1416 * radius * radius
Output "Area of Circle = ", area
Else if choice = 2 then
Output "Enter length: "
Input length
Output "Enter width: "
Input width
area = length * width
Output "Area of Rectangle = ", area

Else if choice = 3 then
Output "Enter base: "
Input base
Output "Enter height: "
Input height
area = 0.5 * base * height
Output "Area of Triangle = ", area
Else if choice = 4 then
Output "Enter side: "
Input side area = side * side
Output "Area of Square = ", area
Else
Output "Invalid choice. Please select 1-4."
End if

Output "Do you want to compute again? (yes/no): "
Input again
Until again ≠ "yes" and again ≠ "Yes"

Output "End"
Stop

main.cpp

Share Run

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

int main() {
    int choice;
    float radius, lenght, width, base, height, side, area;
    string again;

    do {
        cout << "(1) Area of Circle\n";
        cout << "(2) Area of Rectangle\n";
        cout << "(3) Area of Triangle\n";
        cout << "(4) Area of Square\n";
        cout << "Enter your choice (1-4): ";
        cin >> choice;

        if (choice == 1) {
            cout << "Enter radius: ";
            cin >> radius;
            area = 3.1416 * radius * radius;
            cout << "Area of Circle = " << area << endl;
        }
        else if (choice == 2) {
            cout << "Enter length: ";
            cin >> lenght;
            cout << "Enter width: ";
            cin >> width;
            area = lenght * width;
            cout << "Area of Rectangle = " << area << endl;
        }
        else if (choice == 3) {
            cout << "Enter base: ";
            cin >> base;
            cout << "Enter height: ";
            cin >> height;
            area = 0.5 * base * height;
            cout << "Area of Triangle = " << area << endl;
        }
        else if (choice == 4) {
            cout << "Enter side:";
            cin >> side;
            area = side * side;
            cout << "Area of Square = " << area << endl;
        }
```

Output

```
(1) Area of Circle
(2) Area of Rectangle
(3) Area of Triangle
(4) Area of Square
Enter your choice (1-4): 1
Enter radius: 10
Area of Circle = 314.16

Do you want to compute again? (yes/no): yes
(1) Area of Circle
(2) Area of Rectangle
(3) Area of Triangle
(4) Area of Square
Enter your choice (1-4): 2
Enter length: 20
Enter width: 30
Area of Rectangle = 600

Do you want to compute again? (yes/no): yes
(1) Area of Circle
(2) Area of Rectangle
(3) Area of Triangle
(4) Area of Square
Enter your choice (1-4): 3
Enter base: 66
Enter height: 90
Area of Triangle = 2970

Do you want to compute again? (yes/no): yes
(1) Area of Circle
(2) Area of Rectangle
(3) Area of Triangle
(4) Area of Square
Enter your choice (1-4): 4
Enter side:30
Area of Square = 900

Do you want to compute again? (yes/no): no
End

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

7. Supplementary Activity

8. Conclusion

I learned while typing the pseudo codes how to arrange and rearrange certain steps to make a program. While it was tough making this, I still learned something in the process

9. Assessment Rubric

Rubric for SO 7 (8)

Criteria	Ratings						Pts
SO 7 PI 1 IILO4 Utilize lifelong learning skills in pursuit of personal development and excellence in professional practice. threshold: 4.8 pts	6 pts Excellent | Educational interests and pursuits exist and flourish outside classroom requirements,knowledge and/or experiences are pursued independently and applies knowledge learned into practice	5 pts Good | Educational interests and pursuits exist and flourish outside classroom requirements,knowledge and/or experiences are pursued independently	4 pts Satisfactory | Look beyond classroom requirements, showing interest in pursuing knowledge independently	3 pts Unsatisfactory | Begins to look beyond classroom requirements, showing interest in pursuing knowledge independently	2 pts Poor | Relies on classroom instruction only	1 pts Very Poor | No initiative or interest in acquiring new knowledge	6 pts
SO 7 PI 2 IILO4 Utilize lifelong learning skills in pursuit of personal development and excellence in professional practice. threshold: 4.8 pts	6 pts Excellent | Completes an assigned task independently and practices continuous improvement	5 pts Good | Completes an assigned task without supervision or guidance	4 pts Satisfactory | Requires minimal guidance to complete an assigned task	3 pts Unsatisfactory | Requires detailed or step-by-step instructions to complete a task	2 pts Poor | Shows little interest to complete a task independently	1 pts Very Poor | No interest to complete a task independently	6 pts
SO 7 PI 3 IILO4 Utilize lifelong learning skills in pursuit of personal development and excellence in professional practice. threshold: 4.8 pts	6 pts Excellent | Synthesizes and integrates information from a variety of sources; formulates a clear and precise perspective; draws appropriate conclusions	5 pts Good | Evaluate information from a variety of sources; formulates a clear and precise perspective.	4 pts Satisfactory | Analyze information from a variety of sources; formulates a clear and precise perspective.	3 pts Unsatisfactory | Apply the gathered information to formulate the problem	2 pts Poor | Gather and summarized the information from a variety of sources but failed to formulate the problem	1 pts Very Poor | Gather information from a variety of sources	6 pts
SO 7 PI 4 IILO4 Utilize lifelong learning skills in pursuit of personal development and excellence in professional practice. threshold: 4.8 pts	6 pts Excellent | Ideas are combined in original and creative ways in line with the new and emerging technology trends to solve a problem or address an issue.	5 pts Good | Ideas are creative and adapt the new knowledge to solve a problem or address an issue	4 pts Satisfactory | Ideas are creative in solving a problem, or address an issue	3 pts Unsatisfactory | Shows some creative ways to solve the problem	2 pts Poor | Shows initiative and attempt to develop creative ideas to solve the problem	1 pts Very Poor | Ideas are copied or restated from the sources consulted	6 pts
							Total Points: 24