EUROPEAN UNIVERSITY OF LEFKE
Faculty of Engineering
Department of Computer Engineering

COMP218
OBJECT-ORIENTED PROGRAMMING

LAB WORK NO. 2

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Task-1: Write a C++ program that:

a. Asks user to specify five floating-point values, adds them, and then displays the result to the screen,

b. Asks user to specify five integers, finds the smallest one, and then displays the result to the screen,

c. Calculates the power of n raised by m, where n and m are user-specified values.

Task - 1(a)

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

int main()
{
    float sumAarray[5]; // array that will hold 5 float values
    float sum=0;  // float value of sum initialized to 0

    cout << "Enter 5 Floating point numbers to be added: "<< endl;
    for (int i=0; i<5; i++) //stores 5 values from user to sumArray
        cin >> sumAarray[i];

    for (int j=0; j<5; j++)
        sum+= sumAarray[j];//Adds the stored values from user & stores it in sum
    cout << " Sum of Floating point number is: "<< sum << endl;

    return 0;
}
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEA
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
Enter 5 Floating point numbers to be added:
4.5
2.5
5.2
10
2.9
 Sum of Floating point number is: 25.1
>
```

Task - 1(b)

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

int main() {
  int random[5],min,x;

  cout<< "Enter 5 random values to calculate the Minimum value among them"<<endl;
  cin>>min; //stores the first value from the user to min

  random[0] = min; //first element in random will be min

  for(int i = 1; i < 5; i++){
    cin>>random[i]; // stores the remaining input to the array
    x = random[i]; //compares two values from the array to find min.
    if(min > x)
      min = x;
  }

  for(int i = 0; i <5;i++)
    cout << random[i] <<setw(3); //prints the input from user
  cout << endl<< "The minimum value is " << min << endl;
}
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/final)
clang++-7 -pthread -std=c++17 -o main main.cpp
./main
Enter 5 random values to calcute the Minimum value armong them
8 7 1 6 9
8  7  1  6  9
The minimum value is 1
```

Task - 1(c)

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

int main() {
  int base, power, temp;
  cout << "Enter your number or base.\n";
  cin>>base;
  cout << "Enter your exponent or power.\n";
  cin>>power;
```

```
  temp = base; // value of base is stored in a temp variable

  if(power==0){
    base=1;
    cout<<base;
  }
  else if(power==1){
    cout<<base;
  }
  else{
    for(int i = 1; i < power;i++)
      base = base * temp;
    cout << temp << " raised to the power of " << power <<" is = " << base;
  }
}
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_70
)
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
Enter your number or base.
8
Enter your exponent or power.
2
8 raised to the power of 2 is = 64>
```

Task-2: Write a menu-driven C++ program that performs the following according to user's choice:

1. Add
2. Subtract
3. Multiply
4. Quit

```
#include <iostream>
#include <cstdlib>
using namespace std;

// menu function
void menu(){
  cout<<"***>>>>MENU<<<<***\n";
  cout<<"1. Add\n";
  cout<<"2. Subtract\n";
  cout<<"3. Multiply\n";
```

```
  cout<<"4. Quit\n";
  cout<<"***>>>>>><<<<<<***\n";
  cout<<endl;
}


int main() {
  int firstNum,secondNum,result;
  char option;
  menu();
  cout<<"Select your choice of operation from 1-4 on the menu..."<<endl;
  cin>>option; //choice from user stored in option

    switch(option){
    case '1':
      cout<<"Enter any two intergers to calculate their result"<<endl;
      cout<<"First value: ";
      cin>>firstNum;
      cout<<"Second value: ";
      cin>>secondNum;
      result= firstNum + secondNum;
      cout<< firstNum << " "<< "+" << " " << secondNum<<" = "<< result <<endl;
    break;
    case '2':
      cout<<"Enter any two intergers to calculate their result"<<endl;
      cout<<"First value: ";
      cin>>firstNum;
      cout<<"Second value: ";
      cin>>secondNum;
      result= firstNum - secondNum;
      cout<< firstNum << " "<< "-" << " " << secondNum <<" = "<< result <<endl;
    break;
    case '3':
      cout<<"Enter any two intergers to calculate their result"<<endl;
      cout<<"First value: ";
      cin>>firstNum;
      cout<<"Second value: ";
      cin>>secondNum;
      result= firstNum * secondNum;
      cout<< firstNum << " "<< "*" << " " << secondNum <<" = "<< result <<endl;
    break;
    case '4':
      cout<<"You just exited from your program..."<<endl;
      _Exit(1);
    break;
```

```
    default:
      cout<<"I'm Sorry you have entered a wrong Option... Please try
again"<<endl;
    break;
  }
}
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/fin
)
clang++-7 -pthread -std=c++17 -o main main.cpp
./main
***>>>>MENU<<<<***
1. Add
2. Subtract
3. Multiply
4. Quit
***>>>>>>>>>>>>>>***

Select your choice of operation from 1-4 on the menu...
1
Enter any two intergers to calculate their result
First value: 55
Second value: 2
55 + 2 = 57
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/f
)
clang++-7 -pthread -std=c++17 -o main main.cpp
./main
***>>>>MENU<<<<***
1. Add
2. Subtract
3. Multiply
4. Quit
***>>>>>>>>>>>>>>***

Select your choice of operation from 1-4 on the menu...
2
Enter any two intergers to calculate their result
First value: 10
Second value: 5
10 - 5 = 5
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/fin
)
clang++-7 -pthread -std=c++17 -o main main.cpp
./main
***>>>>MENU<<<<***
1. Add
2. Subtract
3. Multiply
4. Quit
***>>>>>>>>>>>>>>***

Select your choice of operation from 1-4 on the menu...
3
Enter any two intergers to calculate their result
First value: 8
Second value: 2
8 * 2 = 16
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/fir
)
clang++-7 -pthread -std=c++17 -o main main.cpp
./main
***>>>>MENU<<<<***
1. Add
2. Subtract
3. Multiply
4. Quit
***>>>>>>>>>>>>>>***

Select your choice of operation from 1-4 on the menu...
4
You just exited from your program...
exit status 1
```

Task-3: Rewrite the program written for Task-2, where instead of asking to choose between 1 through 4, user directly enters symbols like '+', '-', '*', and '.' for quitting.

```
#include <iostream>
#include <cstdlib>
using namespace std;
// menu function
void menu(){
  cout<<"***>>>>MENU<<<<***\n";
  cout<<"1. +  -> Add\n";
```

```
  cout<<"2. -  -> Subtract\n";
  cout<<"3. x  -> Multiply\n";
  cout<<"4. .  -> Quit the program...\n";
  cout<<"***>>>>>><<<<<<***\n";
  cout<<endl;
}



int main() {
  int firstNum,secondNum,result;
  char option;
  menu();
  cout<<"Select your choice of operation from 1-4 on the menu..."<<endl;
  cin>>option;

    switch(option){
    case '+':
      cout<<"Enter any two intergers to calculate their result"<<endl;
      cout<<"First value: ";
      cin>>firstNum;
      cout<<"Second value: ";
      cin>>secondNum;
      result= firstNum + secondNum;
      cout<< firstNum << " "<< "+" << " " << secondNum<<" = "<< result <<endl;
    break;
    case '-':
      cout<<"Enter any two intergers to calculate their result"<<endl;
      cout<<"First value: ";
      cin>>firstNum;
      cout<<"Second value: ";
      cin>>secondNum;
      result= firstNum - secondNum;
      cout<< firstNum << " "<< "-" << " " << secondNum <<" = "<< result <<endl;
    break;
    case '*':
      cout<<"Enter any two intergers to calculate their result"<<endl;
      cout<<"First value: ";
      cin>>firstNum;
      cout<<"Second value: ";
      cin>>secondNum;
      result= firstNum * secondNum;
      cout<< firstNum << " "<< "*" << " " << secondNum <<" = "<< result <<endl;
    break;
    case '.':
```

```
            cout<<"You just exited from your program..."<<endl;
            _Exit(1);
        break;
        default:
            cout<<"I'm Sorry you have entered a wrong Option... Please try
    again"<<endl;
        break;
      }
    }
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/
)
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
***>>>>MENU<<<<***
1. +  -> Add
2. -  -> Subtract
3. x  -> Multiply
4. .  -> Quit the program...
***>>>>>>>><<<<<<<***

Select your choice of operation from 1-4 on the menu...
+
Enter any two intergers to calculate their result
First value: 5
Second value: 8
5 + 8 = 13
>
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700
)
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
***>>>>MENU<<<<***
1. +  -> Add
2. -  -> Subtract
3. x  -> Multiply
4. .  -> Quit the program...
***>>>>>>>><<<<<<<***

Select your choice of operation from 1-4 on the menu...
-
Enter any two intergers to calculate their result
First value: 10
Second value: 8
10 - 8 = 2
>
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/f
)
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
***>>>>MENU<<<<***
1. +  -> Add
2. -  -> Subtract
3. x  -> Multiply
4. .  -> Quit the program...
***>>>>>>>><<<<<<<***

Select your choice of operation from 1-4 on the menu...
*
Enter any two intergers to calculate their result
First value: 50
Second value: 10
50 * 10 = 500
>
```

```
clang version 7.0.0-3~ubuntu0.18.04.1 (tags/RELEASE_700/fi
)
> clang++-7 -pthread -std=c++17 -o main main.cpp
> ./main
***>>>>MENU<<<<***
1. +  -> Add
2. -  -> Subtract
3. x  -> Multiply
4. .  -> Quit the program...
***>>>>>>>><<<<<<<***

Select your choice of operation from 1-4 on the menu...
.
You just exited from your program...
exit status 1
>
```