**ASSIGNMENT 2**

Page 47,Question 27

1. Type of loop used in Program 3.8 is do…while loop.Its differs from Program 3.7 because it test the condition at the end of the loop body.
2. The purpose of N is to execute the amount of loop in the program and its also represent the number of student.
3. We need variable weightCnt because to ensure the program is true so that it can continue to repeat within the range of N.It is initialize to 0,
4. i. Failed to execute.

ii.Failed to execute.

Page 48,Question 28

1. To display marks user get for test 1.
2. We need ONE value to make sure the program is running.If the value enter is less than 0 or greater that 100,the program will repeat so that user can enter marks between the range stated in the condition.
3. Between 1-99
4. In do…while loop,the program will execute at least one value unlike while loop,the computer will execute nothing if the value enter is false.

 e) #include <iostream>

using namespace std;

int main(){

 int mark;

 do

 {

 cout <<"\nEnter marks for test 1: ";

 cin >> mark;

 } while ((mark <0) || (mark >100));

 while (!(cin>>mark)){

 cout << "Please enter the correct mark.";

 cin.clear();

 cin.ignore (100 , '\n');

 }

 cout << "\nYour mark for test 1 is " << mark;

 cout << "\n\nEnd of Program";

 return 0;

 }

Page 48,Question 29

 #include <iostream>

 using namespace std;

 int main()

 {

 int mark;

 int count=1;

 do

 {

 cout<<"\n Enter mark for test " <<count<< " :" <<endl;

 cin>>mark;

 cout<<"\n Your mark for test " <<count<< "is"<< mark<<endl;

 count+=1;

 }while((mark > 0) || (mark < 100));

 return 0;

 system("PAUSE");

 }

Page 49,Question 30

 for ( int num=-10;num <= 10;num=num+2)

 {

 cout << num <<" ";

 }

Page 49,Question 31

 for ( int num=55;num <= 100;num=num+5)

 {

 cout << num <<" ";

 }

Page 49,Question 32

1. The program display 5 weights and calculate the average weight and the total weight.This program use for loop and does not use variable weightCnt anymore,instead the variable changed to variable s\_Num.
2. The body of the loop is :

for (int s\_Num = 0; s\_Num < 5; s\_Num++)

{

 cout << "Enter the weight of a student: ";

 cin >> weight;

 totWeight += weight;

}

It repeats 5 times.

1. Because the program will repeat until it reach the maximum number the variable s\_Num holds.
2. i.The output changes,user can enter one more weight which make it 6 weights.

ii.The output changes.User remain to enter 5 weights but the average weights are different because the number of student increase to 25 people.

iii.The output doesn’t change.

iv.The output changed .It is because total weight when divided by zero will give error.

//Program 3.10

#include <iostream>

using namespace std;

int main() {

 double weight, totWeight=0;

 cout << "Calculate the Average and Total Weight";

 cout << " of Students\n\n";

 for (int s\_Num = 0; s\_Num < 20; s\_Num++)

 {

 cout << "Enter the weight of a student: ";

 cin >> weight;

 totWeight += weight;

 }

 cout << "\nThe Average Weight: "<<(totWeight / s\_Num);

 cout << "\nThe Total Weight : " << totWeight;

 cout << "\n\nEnd of Program";

 return 0;

 }

Page 50,Question 34

 While loop statement :

 int total = 0;

 int count = 0;

 while (count <= 30)

 {

 total += count;

 count++;

 }

 do..while loop statement:

 int total = 0;

 int count = 0;

 do

 {

 total += count;

 count++;

 }while (count <= 30);

Page 50,Question 35

 int ringgit = 0;

 for ( int sen = 1; sen < 100;sen++)

 {

 ringgit += sen;

 sen++;

 }

Page 50,Question 36

 Bool nonstop = true;

 int num,total = 0;

 cin >> num;

 do

 {

 if ((num%2) == 0){

 total +=num;

 cin >>num;

 }

 else

nonstop = false;

}while (nonstop == true )

Page 52,Question 38

 //Program 3.12

#include <iostream>

#include <iomanip>

using namespace std;

int main () {

 cout << "\n\t Multiplication Tables";

 cout << "\n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n\n";

 //Print multiplication table for 4812

 for (int j = 1; j <= 9; j++)

 {

 cout << setw(4) << j \* 4 ;

 }

 cout << endl;

 //Print multiplication table for 51015

 for (int j = 1; j <= 9; j++)

 {

 cout << setw(4) << j \* 5;

 }

 cout << endl;

 //Print multiplication table for 121824

 for (int j = 2 ; j <= 9; j++)

 {

 cout << setw(4) << j \* 6;

 }

 cout << endl;

 return 0;

 }

This is a good way of writing the program because it is easy for user to make a read and make changes in the program.

Page 53,Question 39

1. Output of the program

 Multiplication Tables

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 1 2 3 4 5 6 7 8 9 10

 1 2 3 4 5 6 7 8 9 10

End of Program

--------------------------------

Process exited after 3.587 seconds with return value 0

Press any key to continue . . .

1. The program counts the multiplication table for 1 only .

 //Program 3.13

#include <iostream>

#include <iomanip>

using namespace std;

int main () {

 cout << "\n\t Multiplication Tables";

 cout << "\n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n\n";

 //Print multiplication table for 1 to 2

 for (int n = 1; n <= 1; n++)

 {

 for (int j = 1; j <= 10; j++)

 {

 cout << setw(4) << j \* 1;

 }

 cout << endl;

 for (int j = 1; j <= 10; j++)

 {

 cout << setw(4) << j \* 2;

 }

 cout << endl;

 }

 cout << "\nEnd of Program";

 return 0;

}

1. The outer loop is for loop.The body of the outer loop will execute 2 times .

Each outer loop represent counter variable n.The code that determine the number of times the outer loop will execute is n <= 2

1. The inner loop is for loop.The body of the inner loop will execute 10 times .

 Each inner loop represent the counter variable j.The code that determine the number of

 times the inner loop will execute is j <= 10

Page 53,Question 41

 a.Variable j at line 13 play as counter variable in for loop. It is set to 1 to begin the loop.

 b.Variable j at line 17 play as sentinel value in a while loop. It is incremented with 1 to end the loop.

Page 54,Question 42

 a. //Program 3.14

#include <iostream>

#include <iomanip>

using namespace std;

int main (){

 int j;

 cout << "\n\t Multiplication Tables";

 cout << "\n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n\n";

 //Print multiplication table for 1 to 10

 for (int n = 1; n <= 10; n++)

{

 j = 1;

 do

 {

 cout << setw(4) << j \* n;

 j++;

 }

 while (j <= 10);

 cout << endl;

 }

 cout << "\nEnd of Program";

 return 0;

}

 b. #include <iostream>

 #include <iomanip>

 using namespace std;

 int main (){

 int j;

 cout << "\n\tMultiplication Tables";

 cout << "\n\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\n\n";

 //Print multiplication table for 1 to 10

 int n = 1;

 while ( n <= 10)

 {

 for (int j = 1;j <= 10; j++){

 cout << setw(4) << j \* n;

 }

 cout << endl;

 n++;

 }

 cout << "\nEnd of Program";

 return 0;

 }

Page 54,Question 43

a.#include <iostream>

 #include <iomanip>

 using namespace std;

 int main ()

 {

 int num,count;

 for(count = 1;count<5;count++){

 for (num =1; num<=count ; num++){

 if (num<count)

 cout << num;

 else

 cout << num << endl;}

 }

 system("PAUSE");

 return 0;

}

b. #include <iostream>

 #include <iomanip>

 using namespace std;

 int main ()

 {

 int num,count;

 for(count = 1;count<5;count++){

 for (num =4; num>=count ; num--){

 if (num>count)

 cout << num;

 else

 cout << num << endl;}

 }

 system("PAUSE");

 return 0;

 }

Page 54,Question 44

 //Program 3.15

#include <iostream>

using namespace std;

int main(){

 for (int row = 0; row < 5; row++)

 {

 for (int hash = 0; hash < 10; hash++)

 {

 cout << '#';

 if ( hash == 5)

 break;

 }

 cout << endl;

 }

 return 0;

}

The output is :

######

######

######

######

######

--------------------------------

Process exited after 0.1816 seconds with return value 0

Press any key to continue . . .

Page 55,Question 45

//Program 3.16

#include <iostream>

using namespace std;

int main (){

 int test = 0;

 while (test++ < 10)

 {

 if (test == 4)

 continue;

 cout << test << " ";

 }

 return 0;

}

1. The output is :

1 2 3 5 6 7 8 9 10

--------------------------------

Process exited after 0.1187 seconds with return value 0

Press any key to continue . . .

1. i. Output remains the same

ii.Output changes .

4 5 6 7 8 9 10

--------------------------------

Process exited after 0.1012 seconds with return value 0

Press any key to continue . . .

 iii. Output changes

 1 2 3 4 9 10

--------------------------------

Process exited after 0.2098 seconds with return value 0

Press any key to continue . . .