

NAME : _____
STUDENT NO. : _____
GROUP : _____

LESSON 1: SENTINEL-CONTROLLED LOOP

```
int number;  
  
do  
{  
    cout<<"Enter a number: ";  
    cin>>number;  
} while(number != 999);
```

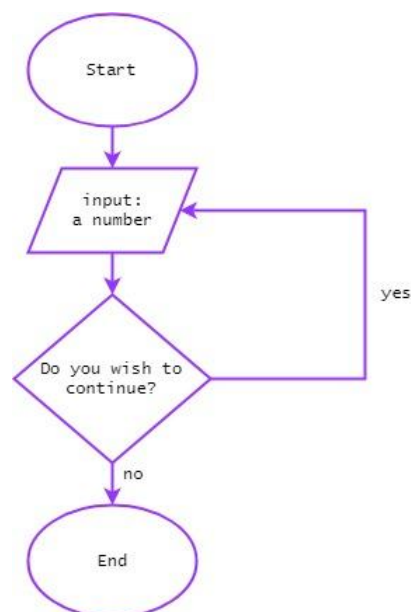
Code 1: Program segment shows a sentinel-controlled loop using `do_while` statement.

```
int number = 0;  
  
while(number != 999)  
{  
    cout<<"Enter a number: ";  
    cin>>number;  
}
```

Code 2: Program segment shows a sentinel-controlled loop using `while` statement.

QUESTION 1

Write a complete program in C++ based on the given flowchart.



QUESTION 2

Study the given algorithm design and write a complete program in C++:

```
Initialize total to 0
Initialize customer to 'Y'
While there is still customer
    Input quantity
    Input price
    Accumulate total
    Continue for another customer?
    Input customer
Display total paid by all customers
```

LESSON 2: LOOPING PLUS SELECTION

QUESTION 1

Convert the given program to its equivalent program using while loop.

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

int main()
{
    int number;
    int max = -1, min = 9999;

    for(int counter = 0; counter < 5; counter++)
    {
        cout<<"Enter a number: ";
        cin>>number;

        if (number > max)
            max = number;

        if (number < min)
            min = number;
    }

    cout<<"\nMinimum number is "<<min<<endl;
    cout<<"Maximum number is "<<max<<endl;

    cout<<endl;
    system("pause");
    return 0;
}
```

QUESTION 2

Write a program that accepts a series of genders from a class of 10 and counts the number of female and male in the class.

LESSON 3: NESTED LOOP

A loop may be executed within another loop. An inner loop is considered as statements in the body of another outer loop.

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

int main()
{
    for(int outerLoop = 0; outerLoop < 5; outerLoop++)
    {
        for(int innerLoop = 0; innerLoop < 5; innerLoop++)
            cout<<innerLoop;
        cout<<endl;
    }
    cout<<endl;
    system("pause");
    return 0;
}
```

Code 3: Example of nested loop

QUESTION 1

Write a complete C++ program to calculate average mark of 4 subjects for 3 students.

QUESTION 2

Write a complete program to display the following pattern using loop statement.

(a) *****

 **
 *

(b) *
 **

(c) @@@@@

@
@@@@@
@
@@@@@

