**What is the output ?**

For loop

The basic for loop pattern

**for ( init ; condition ; increment )**

**{**

**statement(s);**

**}**

Now let’s trace the output:

1.

for (int i = 0; i < 10; i++)

{

cout << "hello world" << endl;

}

Answer: print 10 lines of “hello world”

2.

for (int i = 0;  ; i++)

{

cout << "hello world" << endl;

}

Answer: infinite “hello world”

3.

for (int i = 0; i < 10; )

{

cout << "hello world" << endl;

}

Answer: infinite “hello world”

4.

for ( ; i < 10; i++)

{

cout << "hello world" << endl;

}

Answer: error (variable I has not be declared)

5.

for (;;)

{

cout << "hello world" << endl;

}

Answer: infinite “hello world”

6.

for (;;)

{

};

cout << "hi" << endl;

Answer: No any output (because the loop never stop with no statements inside the loop)

7.

for (int i=0; i <= 10; i++)

{

};

i = i + 1 ;

cout << i << endl;

Answer: error ( I declare in the for loop can not be use outside the loop)

8.

int i = 0;

for (; i <= 10; i++)

{

};

i = i + 1 ;

cout << i << endl;

Answer: 12

While loop

The basic while loop pattern

**while( condition )**

**{**

**Statement(s)**

**}**

Now let’s trace the output:

1.

while (true)

{

cout << "hello world" << endl;

}

Answer: infinite “hello world”

2.

while (false)

{

cout << "hello world" << endl;

}

Answer: nothing

3.

while (!false)

{

cout << "hello world" << endl;

}

Answer: infinite “hello world”

4.

while (1)

{

cout << "hello world" << endl;

}

Answer: infinite “hello world”

5.

while (0)

{

cout << "hello world" << endl;

}

Answer: nothing

6.

while (1);

cout << "Hello world" << endl;

Answer: no output because the loop never stop with no statement.

7.

while (0);

cout << "Hello world" << endl;

Answer: hello world

8.

int i = 0;

while (i < 5)

{

cout << "Hello world" << endl;

i++;

}

Answer: five lines of hello world

9.

int i = 1;

while (i <= 5)

{

for (int k = 0; k < i; k++)

{

cout << "\* ";

}

cout << endl;

i++;

}

Answer:

\*

\* \*

\* \* \*

\* \* \* \*

\* \* \* \* \*

10.

Write the code to print the following output by using nesting while loop.

Output:

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

Write the code below:

int i = 1, j = 1;

while (i <= 5)

{

while (j <= i)

{

cout << j << " ";

j++;

}

j = 1;

cout << endl;

i++;

}