Looping

```
int  i = 1;
Console.WriteLine ("{0,10}", i);

i = 2;
Console.WriteLine ("{0,10}", i);

i = 3;
Console.WriteLine ("{0,10}", i);
         :
i = 10;
Console.WriteLine ("{0,10}", i);
```

initial condition   looping condition   step / (increment)
                                                         (decrement)

```
for (int i = 1;   i < 11;   i++)
{
Console.WriteLine ("{0 | 10}" , i);
}
```

while loops

```
int i = 1;   // initial condition

  while ( i < 11 )  // looping condition
  {
    Console.WriteLine ("{0, 10}", i);
      i++;  // step
  }
```

do-while loops

```
i = 1;   // initial condition
do
{
    Console.WriteLine ("{0,10}", i);
    i++;   // step
} while (i < 11);   // looping
                    //  condition
```

for → known # of loops

while → check before looping

do-while → checks after the loop
(always runs one time)

```
i = 21;        // initial condition

while ( i < 11 )   // looping condition
{
    Console.WriteLine ("{0,10}", i );
        i++;   // step
}
```

do-while loops

```
i = 21;   // initial condition
do
{
    Console.WriteLine ("{0,10}", i);
    i++;   // step
} while ( i < 11 );   // looping
                       condition
```

What does this code do?

```
static void Main(string[] args)
    {
        Console.WriteLine("Looping!  Example of for loop.");
        Console.WriteLine("What does this code do?\n\n");

        int count = 0;
        const int perLine = 10;
        for (int i = 1; i <= 200; i++)
        {
            //Console.Write($"{i,10}");
            Console.Write("{0,10}", i);
            count++;
            if (perLine <= count)
            {
                count = 0;
                Console.WriteLine();
            }
        }
        Console.Write("\n\n\tPress the any key to exit.");
        Console.ReadKey(true);
    }
```

What does this code do?

```csharp
static void Main(string[] args)
{
    Console.WriteLine("Looping!  Example of while loop.");
    Console.WriteLine("What does this code do?\n\n");

    int count = 0;
    const int perLine = 10;
    int skip = 1;
    int i = 1;
    while (i <= 200)
    {
        Console.Write($"{i,10}");
        //Console.Write("{0,10}", i);
        count++;
        if (perLine <= count)
        {
            count = 0;
            Console.WriteLine();
        }
        i++;
        skip++;
        if (skip == 7)
        {
            skip = 1;
            i++;
        }
    }
    Console.Write("\n\n\tPress the any key to exit.");
    Console.ReadKey(true);
}
```

What does this code do?

```
static void Main(string[] args)
{
    Console.WriteLine("Looping!  Example of while
loop.");
    Console.WriteLine("What does this code do?\n\n");

    int count = 0;
    const int perLine = 10;
    int skip = 1;
    int i = 1;
    do
    {
        Console.Write($"{i,10}");
        //Console.Write("{0,10}", i);
        count++;
        if (perLine <= count)
        {
            count = 0;
            Console.WriteLine();
        }
        i++;
        skip++;
        // if (skip == 7)
        // {
        //     skip = 1;
        //     i++;
        // }
    } while (i <= 200);
    Console.Write("\n\n\tPress the any key to exit.");
    Console.ReadKey(true);
}
```