**IT 1050 – Programming Logic**  
Take Home Test 1 **THOMAS SPENCER**

Create a project called IT1050-Midterm. Put all of your code into a single Program.cs class’ Main method. Once completed, push to your git repository and share the URL to your repository in

* Create an infinite while loop. Use a Boolean variable called keepLooping that set to true in the loop’s termination condition. Hint: Use CTRL+C or Debug -> Terminate All to end the program.

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp34

{

class Program

{

static void Main(string[] args)

{

int keepLooping = 1;

while (keepLooping == 1)

{

Console.WriteLine("infinite loop");

}

}

}

}

**MY OUTPUT**



* Write a while loop to prints 2 through 128 in brackets, each on a new line. You should initialize your loop control variable to 2. Output the value of the loop control variable each time through the loop.

[2]

[4]

[8]

[16]

[32]

[64]

[128]

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp34

{

class Program

{

static void Main(string[] args)

{

int keepLooping = 2;

while (keepLooping < 129)

{

Console.WriteLine("[{0}]", keepLooping);

keepLooping = keepLooping \* 2;

}

}

}

}

**MY OUTPUT**



* Write a for loop that prints 49 through 1 separated by a comma. Note, you will need to use a condition inside of the loops so it does not print the comma the last time through (no newlines – although there should be a newline after 1. You need to be a little tricky with the newlines).

49, 48, 47, …, 3, 2, 1

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp34

{

class Program

{

static void Main(string[] args)

{

for (int keepLooping = 49; keepLooping > 0; keepLooping--)

{

if (keepLooping > 1)

{

Console.Write("{0},", keepLooping);

}

else

{

Console.Write("{0} \n", keepLooping);

}

}

}

}

}

**MY OUTPUT**



* Write a while loop that prints all odd numbers 1 through 21, each separated by three spaces (no newlines except after the last number).

1 3 5 7 9 11 13 15 17 19 21

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp34

{

class Program

{

static void Main(string[] args)

{

int keepLooping = 1;

Console.Write("{0} ", keepLooping);

while (keepLooping < 22)

{

keepLooping++;

if (keepLooping < 22 && keepLooping %2 != 0)

{

Console.Write("{0} ", keepLooping);

if (keepLooping == 21)

{

Console.WriteLine();

}

continue;

}

}

}

}

}

**MY OUTPUT**



* Implement the following code using a while loop. In a comment in your code, explain the difference in output between the do-while and while.

int n = 8;

int i = 10; // initialize

do {

Console.Write("\*");

i++; // update!

} while (i < n); // test condition

**MY CODE IMPLEMENT AND OUTPUT**

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp35

{

class Program

{

static void Main(string[] args)

{

int n = 8;

int i = 10; // initialize

do

{

Console.Write("\*");

i++; // update!

} while (i < n); // test condition

{

Console.Write(" i = {0}\n", i);

}

//For the DO-WHILE loop, all code between the curly braces, starting after "do", is executed at least ONCE.

//That is why statement "\* i = 11" is outputted even though the WHILE loop states variable i must be less than 8 to run.

//For the WHILE loop, after the do-while loop is executed, No other output is generated because variable i (initialized at 10) is not less than 8 so the test Fails.

}

}

}



* Use AND and OR (&& and ||) to write an if statement that outputs “Let’s go outside!” when both Boolean values are false.

boolean icyRain;  
boolean tornadoWarning;

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp35

{

class Program

{

static void Main(string[] args)

{

int icyRain = 1;

int tornadoWarning = 1;

Console.WriteLine("Is there icy rain outside? Enter \"1\" for Yes or \"0\" for No.");

icyRain = Convert.ToInt32(Console.ReadLine());

Console.WriteLine("Is there a tornado warning? Enter \"1\" for Yes or \"0\" for No.");

tornadoWarning = Convert.ToInt32(Console.ReadLine());

if (icyRain == 0 && tornadoWarning == 0)

{

Console.WriteLine("Let's go outside!");

}

}

}

}

**MY OUPUT**



* Extra Credit: Use nested loops to print the following to the console:

123454321

1234321

12321

121

1