**IT 1050 – Programming Logic**

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Take Home Test 1

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

1. 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.

int i = 12;

Boolean keepLooping = true;

while (keepLooping)

{

if ( i<= 11)

keepLooping = false;

i++;

Console.WriteLine(i);

}

1. 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]

int num = 2;

while (num <= 128)

{

{

if ((num % 2) == 0)

{

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

}

else if ((num % 2) != 0)

{

Console.Write("");

}

num \*= 2;

}

}

1. 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

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

{

Console.Write("{0}{1}", x, x == 1 ? "" : ",");

}

1. 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

int n1 = 0;

while (n1 <= 0)

{

for (n1 = 1; n1 <= 22; n1++)

{

if (n1 % 2 != 0)

{

Console.Write(n1 + " ");

}

}

}

1. 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

//Explanation: The While() loop will never execute because "i"

//is greater than "n" to begin with.

//the Do While() Loop will print one star because it was told

//to until the condition was met.

int n = 8;

int i = 10; // initialize

do

{

Console.Write("\*");

i++; // update!

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

Console.WriteLine();

n = 8;

i = 10; // initialize

while (i < n) // test condition

{

Console.Write("\*");

i++; // update!

}

1. 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;

bool icyRain = false;

bool tornadoWarning = false;

if (!icyRain && !tornadoWarning)

{

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

}

1. Extra Credit: Use nested loops to print the following to the console:

123454321

1234321

12321

121

1

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

{

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

{

Console.Write(" ");

}

for (int n2 = 0; n2 < 5 - row;)

{

Console.Write(++n2);

}

for (int n2 = 5 - row; n2 > 1;)

{

Console.Write(--n2);

}

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

{

Console.Write(" ");

}

Console.WriteLine();

}

