ASSIGNMENT 4

1.

using System;

using System.Collections;

namespace ExceptionHandling

{

public class Stack

{

static readonly int MAX = 1000;

int top;

int[] stack = new int[MAX];

public bool IsEmpty()

{

return (top < 0);

}

public Stack()

{

top = -1;

}

public bool Push(int data)

{

if (top >= MAX)

{

Console.WriteLine("Stack Overflow");

return false;

}

else

{

stack[++top] = data;

return true;

}

}

public int Pop()

{

if (top < 0)

{

Console.WriteLine("Stack Underflow");

return 0;

}

else

{

int value = stack[top--];

return value;

}

}

public void Peek()

{

if (top < 0)

{

Console.WriteLine("Stack Underflow");

return;

}

else

Console.WriteLine("The topmost element of Stack is : {0}", stack[top]);

}

public void PrintStack()

{

if (top < 0)

{

Console.WriteLine("Stack Underflow");

return;

}

else

{

Console.WriteLine("Items in the Stack are :");

for (int i = top; i >= 0; i--)

{

Console.WriteLine(stack[i]);

}

}

}

public virtual object Clone()

{

return new StackImplementation.Stack();

}

}

class Program

{

public static void Main(string[] args)

{

Stack myStack = new Stack();

myStack.Push(10);

myStack.Push(20);

myStack.Push(30);

myStack.Push(40);

myStack.PrintStack();

myStack.Peek();

Console.WriteLine("Item popped from Stack : {0}", myStack.Pop());

myStack.PrintStack();

}

}

}