Bahria University,

Karachi Campus

A picture containing text, room

Description automatically generated

LAB EXPERIMENT NO.

\_\_\_\_**5**\_\_\_\_\_

LIST OF TASKS

|  |  |
| --- | --- |
| TASK NO | OBJECTIVE |
| **1** | **Write a program to build your own stack class. The minimum your stack class should include is using your enrollment no :**  **A Push(Object) method**  **A Pop() method**  **A Peek() method**  **A IsFull() method**  **A IsEmpty() method**  **A Display() method**  **A Count() method** |
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Submitted On:

\_\_\_\_25/11/2021\_\_\_\_

(Date: DD/MM/YY)

**Task No. 1 : Write a program to build your own stack class. The minimum your stack class should include is using your enrollment no :**

**A Push(Object) method**

**A Pop() method**

**A Peek() method**

**A IsFull() method**

**A IsEmpty() method**

**A Display() method**

**A Count() method**

**Solution:**

**Stack Class**

internal class Stack

{

static readonly int Max = 1000;

int top;

object[] stack\_array = new object[Max];

public Stack()

{

top = -1;

}

internal bool Push(object data)

{

if (IsFull())

{

Console.WriteLine("Stack OverFlow");

return false;

}

else

{

stack\_array[++top] = data;

return true;

}

}

internal object Pop()

{

if (IsEmpty())

{

Console.WriteLine("Stack UnderFlow");

return 0;

}

else

{

object value = (object)stack\_array[top--];

return value;

}

}

internal void Peek()

{

if (IsEmpty())

{

Console.WriteLine("Stack UnderFlow");

return ;

}

else

{

Console.WriteLine("\nThe Topmost element of Stack is : {0}",stack\_array[top]);

}

}

internal void Display()

{

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\_array[i]);

}

}

}

public bool IsEmpty()

{

return top < 0;

}

public bool IsFull()

{

return top >= Max;

}

}

**Main Method**

static void Main(string[] args)

{

Stack myStack = new Stack();

myStack.Push("02-131202-016");

myStack.Push("02-131202-028");

myStack.Push("02-131202-045");

myStack.Push("02-131202-057");

myStack.Display();

Console.WriteLine("\nStack is Full = {0}", myStack.IsFull());

myStack.Peek();

Console.WriteLine("Item POP from Stack is : {0}\n",myStack.Pop());

myStack.Display();

myStack.Pop();

myStack.Pop();

myStack.Pop();

Console.WriteLine("\nStack is Empty = {0}", myStack.IsEmpty());

Console.ReadLine();

}

**Output:**

