Bahria University,

Karachi Campus

A picture containing text, room

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LAB EXPERIMENT NO.

\_\_\_\_**05**\_\_\_\_\_

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 |

Submitted On

02/11/2022

(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**

**Solution:**

**Main Class:**

Stack myStack = new Stack();

Console.WriteLine("\*\*\*\*\*\*\* Push Method \*\*\*\*\*\*\*");

myStack.push(02131212007);

myStack.push(02131212008);

myStack.push(02131212009);

myStack.push(02131212010);

Console.WriteLine("\n\*\*\*\*\*\*\* Display Method \*\*\*\*\*\*\*");

myStack.printList();

Console.WriteLine("\n\*\*\*\*\*\*\* Peek Method \*\*\*\*\*\*\*");

myStack.peek();

Console.WriteLine("\n\*\*\*\*\*\*\* Full Method \*\*\*\*\*\*\*");

Console.WriteLine("Is the stack full? \n" + myStack.isFull());

Console.WriteLine("\n\*\*\*\*\*\*\* Pop Method \*\*\*\*\*\*\*");

Console.WriteLine("Items pop from top of stack is " + myStack.pop());

myStack.printList();

myStack.pop();

myStack.pop();

myStack.pop();

Console.WriteLine("\n\*\*\*\*\*\*\* Empty Method \*\*\*\*\*\*\*");

Console.WriteLine("The stack is empty {0} ", myStack.isEmpty());

**Stack Class:**

static readonly int max = 1000;

int top;

int[] stack = new int[max];

public bool isFull(){

return top >= max;}

public Stack(){

top = -1;}

internal bool push(int data){

if (top >= max){

Console.WriteLine("Stack Overflow");

return false;}

else{

stack[++top] = data;

return true;}}

internal int pop(){

if (top < 0){

Console.WriteLine("Stact Underflow");

return 0;}

else{

int value = stack[--top];

return value;}}

internal void peek(){

if (top < 0){

Console.WriteLine("Stack Underflow");

return;}

else{

Console.WriteLine("The top most value of Stack Array is {0} " + stack[top]);}}

internal void printList(){

if (top < 0){

Console.WriteLine("Stack Underflow");

return;}

else{

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

Console.WriteLine(stack[i]);}}}

public bool isEmpty(){

return top < 0;}

**Output:**

