~~**Worksheet 1.4**~~

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Branch: CSE - AIML **Section/Group: 21AML - 9 - "A"**
Semester: 3rd
Subject Name: Data Structures **Subject Code:** 21CSH-241

1. Aim/Overview of the practical:

Program to perform various operation in stack

1. **pop**
2. **push**
3. **display**

2. Algorithm/Flowchart :

Step1: Start
Step2: Creat a function for pushing the value in the stack.
Step3: Creat a function for pop the value from the stack.
Step4: Creat a function for display the value of stack.
Step5: Input the size of the stack from the user.
Step6: Input the operation which user want to perform in the stack .
Step7: Creat a switch with case 1. Push 2.Pop 3.display
Step8: Call the function according to there cases
Step9: Stop

Code:

```
#include <stdio.h>
#define Max 100
int top,i,size,value,choice;
int stack[Max];
void push(void){
   if(top>=size-1){
      printf("\n stack overflow");
   }
   else{
     top=top+1;
     printf("\n Enter the element user like to push in stack:");
     scanf("%d",&value);
     stack[top]=value;
   }
}
void pop(void){
   if(top<=-1){
      printf("stack underflow");
   }
```

```
    else{
        printf("poped element from the stack %d:",stack[top]);
        top--;
    }
}
void display(void){
    if(top>=0){
        for(i=top;i>=0;i--){
            printf("\n %d",stack[i]);
        }
    }
    else{
        printf("no stack found");
    }
}
int main()
{
    top=-1;
    choice=1;
    printf("Enter the size of the stack:");
    scanf("%d",&size);
    while(choice!=0){
   printf("\n 1.push operation \n 2.pop operation \n 3.Display operation \n 4.exit the program");
    printf("\n Enter the choice:");
    scanf("%d",&choice);

        switch(choice){
            case 1: push();
                    break;
            case 2: pop();
                    break;
            case 3: display();
                    break;
            case 4: printf("\n Exit the program");
                    choice==0;
                    break;
            default: printf("\n Enter valid choice");
        }
    }
    return 0;
}
```

Output:

Push:

```
Enter the size of the stack:4

 1.push operation
 2.pop operation
 3.Display operation
 4.exit the program
 Enter the choice:1

 Enter the element user like to push in stack:32
```

Pop:

```
 1.push operation
 2.pop operation
 3.Display operation
 4.exit the program
 Enter the choice:2
poped element from the stack 32:
```

Display:

```
 1.push operation
 2.pop operation
 3.Display operation
 4.exit the program
 Enter the choice:3
no stack found
```

Learning Outcome:

1. **Learn the concept of stack .**
2. **Learn the concept of pushing the value in the stack.**
3. **Learn the concept of pop the value from the stack.**
4. **Learn the concept to value from the stack.**

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Viva		
2.	Performance		
3.	Worksheet		