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Course → MCA
Scc → B
Sub → Data Structure & File Organisation using C

Ans2 A stack is an abstract data type (ADT) commonly used in most programming languages. It is named stack as it behaves like a real world stack, for eg → a deck of cards or a pile of plates etc. A real world stack allows operations at one end only. This feature makes it LIFO data structure. LIFO stands for Last in-first Out. In stack terminology, insertion operation is called PUSH operation and removal operation is called POP operation.

Program

```
# include <stdio.h>
# include <conio.h>
 Struct Node
{ int data;
 struct Node *next;
}
  *top = NULL
  Void push (int);
  Void pop ( );
```

```
void display ( );
int main ( )
{ int choice, value ;
printf ("In Implementation Stack Using LL \n");
while (1)
{
printf ("1. Push \n2. Pop \n3 . Display \n4. Exit \n");
printf ("In Enter your choice :");
scanf ("%d", & choice);
switch (choice)
{ case 1: printf ("In Enter the value to insert :");
scanf ("%d", &value);
push (value);
break;
Case 2: pop ( );
break;
Case 3: display ( );
break;
case 4: exit (0);
break;
default : printf ("In Invalid choice \n");
}}}
void push (int value)
{ struct Node *newNode;
newNode = (struct Node*) malloc (size of (struct Node));
newNode -> data = value;
if (top == NULL)
newNode -> next = NULL;
else
```

```
newNode -> next = top;
 top = newNode;
printf ("Node is Inserted \n\n");
}
Void pop()
{ if (top== NULL)
printf ("\nEmpty Stack\n");
else{
Struct Node *temp = top;
printf ("\n Popped Element : %d", temp->data);
printf ("\n");
 top = temp -> next;
free (temp);
}}
Void display()
{ if (top== NULL)
printf ("\n Empty Stack \n");
else
{ printf (" The stack is \n");
Struct Node * temp = top;
while (temp -> next != NULL)
{ printf ("%d -->", temp -> data);
 temp = temp -> next;
}
printf ("%d --> NULL\n\n", temp->data);
}
}
```