LOKESH PANDEY

MCA 2C

TMC-201

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Date 4/6/21
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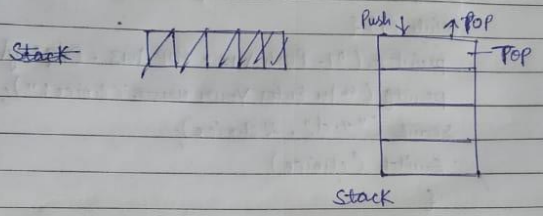
TMC201
Lokesh Panday
MCA 2C.

(2) Stack is a linear data structure which follows a particular order in which the operations are performed. The order may be LIFO (last in First out) or FILO (First in last out).



Example of Stack is :- Like plates stacked over one another in the party. The place which is one at the top will removed first, i.e the plate at last remain for longer time in stack. So that is why it follows LIFO.

⇒ C program to display Push, pop, display function of the stack using linklist

```
#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 ("\n IMPLEMENTING STACKS USING LINKED LISTS \n");
    while (1) {
    printf ("1. Push \n2. POP \n3. Display \n4. exit \n");
    printf ("\n Enter Your choice:");
    Scanf ("%d", &choice);
    Switch (choice)
     {
     Case 1: printf ("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 ("\n Invalid choice \n")
     }}}
```

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```
void Push (int value)
{
Struct Node * newnode;
newNode = (struct Node*) malloc (Size of (struct Node));
now Node => 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 ("\n Empty 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");
```

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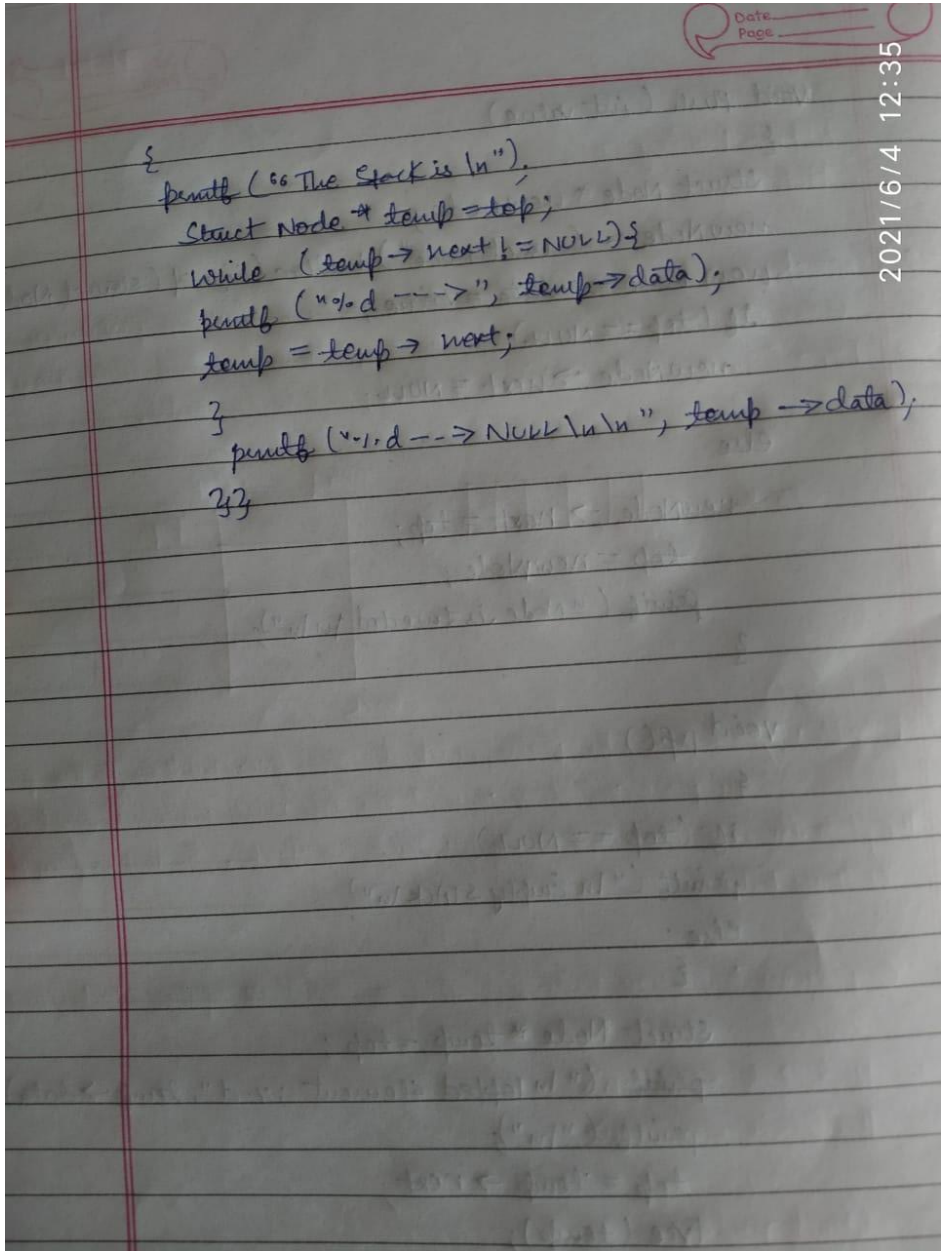

```
{
printf ("The Stack is \n");
struct Node *temp = top;
while (temp -> next != NULL){
printf ("%d --->", temp->data);
temp = temp -> next;
}
printf ("%d ---> NULL \n\n", temp -> data);
}}
```

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