

Q1:Write program to read N characters and push only the small letter characters in stack and then print content of the stack?

```
#include<iostream.h>
```

```
char stack[10];
```

```
int top =0;
```

```
void push(char ch)
```

```
{
```

```
    if (top==10)
```

```
        cout<<"the stack is empty";
```

```
    else
```

```
    {
```

```
        top++;
```

```
        stack[top]=ch;
```

```
    }
```

```
}
```

```
void display()
```

```
{
```

```
    int i;
```

```
        for(i=1;i<=top;i++)
```

```
            cout<<stack[top];
```

```
        }
```

```
main()
```

```
{
```

```
    int N,i;
```

```
    char ch;
```

```
    cin>>N;
```

```
    for(i=1;i<=N;i++)
```

```
    {
```

```
        cin>>ch;
```

```
        if (ch>='a'&& ch<='z')
```

```
            push(ch);
```

```
    }
```

```
    display();
```

```
}
```

**Q2:** Write program to read N characters and insert only the capital letter characters in queue and then print the content of queue.

```
#include<iostream.h>
char queue[10];
int front=-1,Rear=-1;
void inqueue(char ch)
{
    if (Rear==9)
        cout<<"queue is empty";
    else
    {
        if (front==1)
            front=0;
            Rear=Rear+1;
            queue[Rear]=ch;
    }
}
void display()
{
    int i;
    if (front==1)
        cout<<"queue is empty";
    else
    {
        for(i=front; i<=Rear; i++)
            cout<<queue[i];
    }
}
main()
{
    int N,i,ch;
    cin>>N;
    for(i=1;i<=N;i++)
    {
        cin>>ch;
        if(ch>='A' && ch<='Z')
            inqueue(ch);
    }
    display();
}
```

**Q3:** Write program to read 5 struct and insert them queue where each struct contain name and average. Print these structs in reverse.

```
#include<iostream.h>
struct st
{
    char name[10];
    float av ;
}queue[5];
int front=-1,Rear=-1;
void inqueue(char N[10],float av)
{
    if (Rear=5)
        cout<<"empty";
    else
    {
        if(front=-1)
            front=0;
        Rear=Rear+1;
        queue[Rear].name=N;
        queue[Rear].av=av;
    }
}
```

```
main()
{
    int i;
    char N[10];
    float av;
    for(i=1;i<=5;i++)
    {
        cin>>N;
        cin>>av;
        inqueue(N,av);
    }
    for(i=Rear;Rear>=front;i--)
    {
        cout<<queue[i].name;
        cout<<queue[i].av;
    }
}
```

**Q4:** Write program to read 5 struct and insert them into stack where each struct contain name and average. Print the student name only in stack where the average student  $\geq 70$ .

```
#include<iostream.h>
struct st
{
    char name[10];
    float av ;
}stack[5];
int front=-1,Rear=-1,top;
void push(char N[10],float av)
{
    if (top=5)
        cout<<"empty";
    else
    {
        top++;
        stack[top].name=N;
        stack[top].av=av;
    }
}

main ()
{
    char N[10] ;
    float av;
    int i;
    for(i=1;i<=5;i++)
    {
        cin>>N ;
        cin>>av;
        push(N,av);
    }
    for(i=top;i>0;i--)
    {
        if(stack[i].av>=70)
            cout<<stack[i].name;
    }
}
```

**Q5:** Write program to read 10 student degree and insert them into queue. Delete only the first N student degree.

```
#include<iostream.h>
float queue[10];
int front=-1,Rear=-1;
void inqueue(float x)
{
    if (Rear==9)
        cout<<"empty";
    else
    {
        if (front==-1)
            front=0;
        Rear=Rear+1;
        queue[Rear]=x;
    }
}
void dequeue(f)
{
    if (front==-1 || front=Rear)
    {
        cout<<"empty";
        return ;
    }
    else
    {
        cout<<queue[front];
        front=front+1;
    }
}
main()
{
    int i,N ;
    float x;
    for(i=1;i<=10;i++)
    {
        cin>>x;
        inqueue(x);
    }
    cin>>N;
    for(i=1;i<=N;i++)
        dequeue();
}
```

**Q6:** Write program to read 10 student degree and push them into stack .Pop only the N student degree .

```
#include<iostream.h>
float stack[10];
int top=0;
void push(float x)
{
    if (top=10)
        cout<<"full";
    else
    {
        top++;
        stack[top]=x;
    }
}
void pop()
{
    if(top=0)
        cout<<"empty";
    else
    {
        cout<<stack[top];
        top--;
    }
}
main()
{
    int i,N,x;
    for(i=1;i<=1;i++)
    {
        cin>>x;
        push(x);
    }
    for(i=1;i<=N;i++)
        pop();
}
```