Dsa-Lab-Task : 8

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Qns1:

```
#include<iostream>
#include<string>
using namespace std;
class stack{
public:
char *arr;
int capacity;
int top;
stack(int cap)
{
   arr=new char[cap];
   capacity=cap;
   top=-1;

}
bool is_empty(){
   return (top==-1);
}
bool is_full()
{
   return (top==capacity-1);
```

```
}
void push(int v)
{
   if(is_full())
   {
      cout <<"Is already full cant insert more in stack!"<<endl;
      return ;
   }
   arr[++top]=v;
}
void pop()
{
   if(is_empty())
{
   cout <<"stack is already empty cant delete further!"<<endl;
   return ;
}
   --top;
}

char peek()
{
   if(is_empty())
{
   cout<<"Stack is empty!\n";
   return '\0';
}
   return arr[top];
}
```

```
bool chaek_palindrome(stack &t)
{
   //for single element
   if(t.top==0)
   {
   return true;
   }

   //for even
   if (t.capacity%2==0){
   stack d(t.capacity/2);
   for(int i=0;i<t.capacity/2;i++)
   {
   d.push(t.peek());
   t.pop();
   }
   while(d.peek()==t.peek())
   {
      d.pop();
      t.pop();
      if(t.is_empty() || d.is_empty()){
      return true;
      }
   }

}
   //for odd
   else{
```

```
    stack d(t.capacity/2);
    for(int i=0;i<t.capacity/2;i++)
    {
    d.push(t.peek());
    t.pop();
    }
    t.pop();



    while(d.peek()==t.peek())
    {
        d.pop();
        t.pop();
        if(t.is_empty() || d.is_empty()){
        return true;
        }
    }

}

  return false;
}

};
int main() {
    string wor;
    cout<<"Write the Word To cheak for palidrome: "<<endl;
    getline(cin,wor);
```

```
    stack s(wor.length());
    for(int i=0;i<wor.length();i++)
    {
        s.push(wor[i]);
    }
    if(s.chaek_palindrome(s)){
        cout<<"Yes palindrome!"<<endl;
    }
    else{
        cout<<"Not a palindrome!"<<endl;
    }
}
```