OOPS ASSIGNMENT-02

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1. Write a function called reversit ( ) that reverses a string. Use a for loop that swaps the first and last characters, then the second and next to last characters and so on. The string should be passed to reversit ( ) as an argument. Write a program to exercise reversit ( ). The program should get a string from the user, call reversit ( ), and print out the result. Use an input method that allows embedded blanks. Test the program with Napoleon's famous phrase, "Able was I" to "I saw elbA".

```
import java.util.Scanner;

public class ClassBasics21 {
	private static String str;
	private static Scanner s;

	public static void main(String[] args) {
		s = new Scanner(System.in);
		str = s.nextLine();
		str.trim();
		String res=reverseit(str);
		System.out.println("reversed String: "+res);
	}

	private static String reverseit(String str2) {


		String st[]=str2.split(" ");
		str2="";

		for(String w:st) {
			w.trim();
			char t[]=w.toCharArray();
			for(int j=0;j<w.length()/2;j++) {

				char temp=t[j];
				t[j]=t[w.length()-j-1];
				t[w.length()-j-1]=temp;
			}
			StringBuilder sb=new StringBuilder();
			sb.append(t);
			str2=sb.toString()+" "+str2;

		}

		return str2.trim();
	}
}
```

2. Write a C++ program to change the case (lower to upper and upper to lower cases) of each character of a given string.

```
#include<iostream>
using namespace std;
int main(){
	string s;
	cin>>s;
	for(int i=0;i<s.length();i++){
		if(s[i]>=97 and s[i]<=122){
			s[i]=(s[i]-32);
		}
		else if(s[i]>64 and s[i]<90) {

			s[i]=(s[i]+32);
		}
	}

	cout<<s<<endl;

}
```

3. Write a C++ program to rearrange the elements of a given array of integers in zig-zag fashion way. Note: The format zig-zag array in form a< b > c < d > e < f.

```
#include<iostream>
#include<bits/stdc++.h>
using namespace std;
int main(){
	cout<<"Enter number f elements.";
	int n;
	cin>>n;
	int a[n];
	cout<<"Enter array elements:";
	for(int i=0;i<n;i++){
		cin>>a[i];
	}

	for(int i=0;i<n;i++){
		for(int j=0;j<n-i-1;j++){
			if(a[j]>a[j+1]){
				swap(a[j+1],a[j]);
			}
		}
	}

	int i=0,j=(n+1)/2;
	while(i!=(n+1)/2 ){
		cout<<a[i++]<<" ";

		if(j<n){
			cout<<a[j++]<<" ";

		}
	}

}
```

4. Write a C++ program to rearrange a given sorted array of positive integers so that in final array, first element should be maximum value, second minimum value, third second maximum value, fourth second minimum value, fifth third maximum and so on.

```
#include<iostream>
#include<bits/stdc++.h>
using namespace std;
int main(){

	cout<<"Enter number f elements.";
	int n;
	cin>>n;
	int a[n];
	cout<<"Enter array elements:";
	for(int i=0;i<n;i++){
		cin>>a[i];
	}

	for(int i=0;i<n;i++){
		for(int j=0;j<n-i-1;j++){
			if(a[j]>a[j+1]){
				swap(a[j+1],a[j]);
			}
		}
	}

	int i=0,j=n-1;
	while(i<=j){
		cout<<a[j]<<" ";
		j--;
		if(i!=j+1){
			cout<<a[i]<<" ";
			i++;
		}

	}


}
```