Name : Antarin Ghosal

La 9.5

```c
/*Author : Antarin Ghosal
Program : WAP to sort an array using Pointer.*/


#include<stdio.h>

void bubblesort();

int main(){
    int arr[6]={6,3,7,1,9,2};

    bubblesort(arr,6);

    return 0;
}

void bubblesort(int *p,int n){
    int i,j,temp;
    for(i=1;i<n;i++){
        for(j=0;j<n-i;j++){
            if(*(p+j)<*(p+j+1)){
                temp=*(p+j);
                *(p+j)=*(p+j+1);
                *(p+j+1)=temp;
            }
        }
    }

    printf("The sorted array is : ");
    for(i=0;i<6;i++){
        printf("%d,",p[i]);
    }
}
```

```
The sorted array is : 9,7,6,3,2,1,
```

La 9.6

```c
/*Author : Antarin Ghosal
Program : WAP to count vowels and consonants in a string using pointer.*/

#include<stdio.h>
#include<string.h>

int main(){
    char s[100];
    char *p;
    int vow=0,consts=0;

    printf("\nEnter a string : ");
    gets(s);

    p=s;

    while(*p!='\0'){
        if(*p=='A'||*p=='E'||*p=='I'||*p=='O'||*p=='U'||*p=='a'||*p=='e'||*p=='i'||*p=='o'
||*p=='u'){
            vow++;
        }
        else{
            if(*p!=' '){
                consts++;
            }
        }
    p++;
    }

    printf("The number of vowels Present are : %d",vow);
    printf(" And consonants are : %d",consts);

    return 0;
}
```

```
Enter a string : Antarin
The number of vowels Present are : 3 And consonants are : 4
```

```
Enter a string : Hello world
The number of vowels Present are : 3 And consonants are : 7
```

La 9.7

```c
/*Author : Antarin Ghosal
Program : WAP to print a string in reverse using a pointer.*/


#include<stdio.h>
#include<string.h>

int main(){
    char s[]="Hello world";
    int i,l;

    l=strlen(s);

    printf("The reversed string is : ");
    for(i=l;i>=0;i--){
        printf("%c",*(s+i));
    }

    return 0;
}
```

```
The reversed string is : dlrow olleH
```

La 9.8

```c
/*Author : Antarin Ghosal
Program : WAP to find the largest element stored in an array of n elements by using
dynamic memory
allocation*/


#include<stdio.h>
#include<stdlib.h>

int main(){
    int n,*a,i,s=0,max;

    printf("Enter the number of elements : ");
    scanf("%d",&n);

    a=(int *)malloc(n*sizeof(int));

    if(a==NULL){
        printf("Unsuccessful !!");
        exit(0);
    }
```

```
    printf("Enter the array Elements : ");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }

    for(i=0;i<n;i++){
        if(a[i]>a[i-1]){
            max=a[i];
        }
        else max=a[i-1];
    }

    printf("The largest element is : %d",max);

    return 0;
}
```

```
Enter the number of elements : 5
Enter the array Elements : 1
2
3
5
The largest element is : 5
```

```
Enter the number of elements : 3
Enter the array Elements : 1
4
2
The largest element is : 4
```

La 9.9

```
/*Author : Antarin Ghosal
Program : WAP to bubble sort array elements declared dynamically using call by reference.*/


#include<stdio.h>

void bubblesort();

int main(){
    int arr[6]={6,3,7,1,9,2};

    bubblesort(arr,6);

    return 0;
}

void bubblesort(int *p,int n){
    int i,j,temp;
    for(i=1;i<n;i++){
        for(j=0;j<n-i;j++){
            if(*(p+j)<*(p+j+1)){
                temp=*(p+j);
                *(p+j)=*(p+j+1);
                *(p+j+1)=temp;
            }
        }
    }
```

```
    printf("The sorted array is : ");
    for(i=0;i<6;i++){
        printf("%d,",p[i]);
    }
}
```

```
The sorted array is : 9,7,6,3,2,1,
```

Sa 9.5

```
/*Author : Antarin Ghosal
Program : WAP to print a string using pointer.*/


#include<stdio.h>

int main(){
    char str[100];
    char *p;
    printf("\nEnter a string : ");
    gets(str);

    p = str;

    printf("\nEntered string is : ");
    while(*p!='\0')
        printf("%c",*p++);

    return 0;
}
```

```
Enter a string : hello

Entered string is : hello
```

```
Enter a string : antarin

Entered string is : antarin
```

Sa 9.6

```
/*Author : Antarin Ghosal
Program : WAP to count vowels in a string using pointer.*/


#include<stdio.h>
#include<string.h>

int main(){
    char s[100];
    char *p;
```

```
    int vow=0;

    printf("\nEnter a string : ");
    gets(s);

    p=s;

    while(*p!='\0'){
        if(*p=='A'||*p=='E'||*p=='I'||*p=='O'||*p=='U'||*p=='a'||*p=='e'||*p=='i'||*p=='o'||*p=='u'){
            vow++;
        }
    p++;
    }

    printf("The number of vowels Present are : %d",vow);

    return 0;
}
```

```
Enter a string : antarin
The number of vowels Present are : 3
```

```
Enter a string : Hello world
The number of vowels Present are : 3
```

Sa 9.7

```
/*Author : Antarin Ghosal
Program : WAP to store n elements in an array using dynamic memory allocation and print the elements
using pointer.*/


#include<stdio.h>
#include<stdlib.h>

int main(){
    int n,*a,i,s=0;

    printf("Enter the number of elements : ");
    scanf("%d",&n);

    a=(int *)malloc(n*sizeof(int));

    if(a==NULL){
        printf("Unsuccessful !!");
        exit(0);
    }

    printf("Enter the array Elements : ");
    for(i=0;i<n;i++){
        scanf("%d",&a[i]);
    }

    return 0;
}

int bubble
```

```
Enter the number of elements : 5
Enter the array Elements : 1
2
3
4
5

Entered string is : 12345
```

```
Enter the number of elements : 3
Enter the array Elements : 1
2
3

Entered string is : 123
```

Ha 9.2

```c
#include<stdio.h>
#include<stdlib.h>
int main()
{
    int n,*a,i,max,*b,N;
    int k=0;
    printf("enter number of elment of the array: ");
    scanf("%d",&n);
    a=(int*)malloc(n*sizeof(int));
    b=(int*)malloc(n*sizeof(int));

    printf("Enter the cyclic switch: ");
    scanf("%d",&N);
    if(a==NULL)
    {
        printf("MEMORY ALLOCATION UNSUCCESFULL");
        exit(0);
    }
    else
    {
        printf("\ENTER THE ARRAY ELEMENT ONE by one\n:");
        for(i=0;i<n;i++)
        {
            printf("Enter element number [%d]: ",i+1);
            scanf("%d",(a+i));
        }
    k=N;
    for(i=0;i<n-N;i++)
        *(b+i)=*(a+k++);
    k=0;
    for(i=n-N;i<n;i++)
        *(b+i)=*(a+k++);

    printf("AFTER LEFT CYCLIC SWITCH OF VALUE %d\n",N);

    for(i=0;i<n;i++)
        printf("%d\t",*(b+i));

    }


    return 0;
}
```

```
enter number of elment of the array: 5
Enter the cyclic switch: 1
TER THE ARRAY ELEMENT ONE by one
:Enter elemrnt number [1]: 1
Enter elemrnt number [2]: 2
Enter elemrnt number [3]: 3
Enter elemrnt number [4]: 4
Enter elemrnt number [5]: 5
AFTER LEFT CYCLIC SWITCH OF VALUE 1
2       3       4       5       1
```

```
enter number of elment of the array: 3
Enter the cyclic switch: 2
TER THE ARRAY ELEMENT ONE by one
:Enter element number [1]: 1
Enter element number [2]: 2
Enter element number [3]: 3
AFTER LEFT CYCLIC SWITCH OF VALUE 2
3       1       2
```

Ha 9.3

```c
#include<stdio.h>
#include<string.h>
#include <ctype.h>
int main()
{
    int n;char ch[100],*str=ch;
    int vc=0,c=0,i;
    printf("Enter the string:");
    scanf("%[^\n]s",ch);

    for(i=0;i<strlen(ch);i++)
    {
        if(*(str+i)=='A'||*(str+i)=='E'||*(str+i)=='I'||*(str+i)=='O'||*(str+i)=='U'||*(str+i)=='a'||*(str+i)=='e'||*(str+i)=='i'||*(str+i)=='o'||*(str+i)=='u')
            vc++;
        else if(isalpha(*(str+i)))
                c++;
    }
    printf("VOWEL: %d\n",vc);
    printf("CONSONANT: %d\n",c);

return 0;
}
```

```
Enter the string:antarin
VOWEL: 3
CONSONANT: 4
```

```
Enter the string:Hello world
VOWEL: 3
CONSONANT: 7
```

Ha 9.4

```c
#include <stdio.h>
#include <string.h>

void swap(char *x, char *y)
{
    char temp;
    temp = *x;
    *x = *y;
    *y = temp;
}
void permute(char *a, int l, int r)
{
int i;
if (l==r)
    printf("%s\n",a);
else
{
    for(i=l;i<=r;i++)
    {
        swap((a+l),(a+i));
        permute(a,l+1, r);
        swap((a+l),(a+i));
    }
}
}

int main()
{
    char str[100];
    printf("Enter the string:");
    scanf("%[^\n]s",str);
    int n = strlen(str);
    permute(str, 0, n-1);
    return 0;
}
```

```
Enter the string:hel
hel
hle
ehl
elh
leh
lhe
```

```
Enter the string:123
123
132
213
231
321
312
```

Ha 9.5

```c
#include <stdio.h>
#include <string.h>
void swap(char* str)
{
```

```
    char c=0;
    int length=0,i=0;
    length = strlen(str);

    if (length % 2 == 0)
    {
        for(i=0;i<length;i+=2)
        {
            c=str[i];
            str[i]=str[i+1];
            str[i+1] =c;
        }
        printf("%s\n", str);
    }
    else {

        printf("NA\n");
    }
}

int main()
{
    char str[100];
    printf("Enter the string:");
    scanf("%[^\n]s",str);

    swap(str);

    return 0;
}
```

```
Enter the string:he
eh
```

```
Enter the string:an
na
```

Ha 9.6

```
#include <stdio.h>
#include <string.h>


void main()
{
    char str[100], sub[100];
    int count=0,count1=0;

    int i,j,l,l1,l2;

    printf("Enter a string : ");
    scanf("%[^\n]s", str);

    l1=strlen(str);

    printf("\nEnter a substring : ");
    scanf(" %[^\n]s", sub);

    l2=strlen(sub);
```

```
    for(i=0;i<l1;)
    {
        j=0;
        count=0;
        while((str[i]==sub[j]))
        {
            count++;
            i++;
            j++;
        }
        if(count==l2)
        {
            count1++;
            count=0;
        }
        else
            i++;
    }
    printf("%s occurs %d times in %s", sub, count1, str);
}
```