ASSIGNMENT-5:-

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subject name :- Programming for Reasoning

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Q) Write a C program to find the sum of elements of an array.

Ans:

```
#include <stdio.h>
int main()
{ int a[5], i, sum=0;
  printf("Enter 5 elements:\n");
  for (i=0; i<5; i++)
  { scanf("%d", &a[i]);
    sum += a[i];
  }
  printf("sum of array elements = %d", sum);
  return 0;
}
```

Input:
1 2 3
output:
6

Q) Maximum and Minimum in each row of a 2D array.

Ans:

```
#include <stdio.h>
int main()
{ int a[2][3], i, j, max, min;
  for (i=0; i<2; i++)
  for (j=0; j<3; j++)
    scanf("%d", &a[i][j]);
  for (i=0; i<2; i++){
    max = min = a[i][0];
    for (j=1; j<3; j++){
      if (a[i][j] > max) max = a[i][j];
      if (a[i][j] < min) min = a[i][j];
    } printf("Row %d -> Max = %d Min = %d\n", i, max, min);
  }
  return 0;
}
```

Input:
2 5 1
output:
max = 5
min = 1

3) Write a C program to find the frequency of elements in an array.

Ans:

```
#include<stdio.h>
int main(){
  int a[5], i, j, c;
  for (i=0; i<5; i++) scanf("%d", &a[i]);
  for (i=0; i<5; i++){
      c=1;
    if (a[i]==-1) continue;
    for (j=i+1; j<5; j++)
    if (a[i]==a[j]){ c++; a[j]=-1; }
    printf("%d -> %d\n", a[i], c);
  }
}
```

Input:
1 2 1
output:
frequency of 1 is 2

4) Write a C program to merge two arrays?

Ans:

```
#include<stdio.h>
int main(){
  int a[3], b[3], c[6], i;
  for (i=0; i<3; i++) scanf("%d", &a[i]);
  for (i=0; i<3; i++) scanf("%d", &b[i]);
  for (i=0; i<3; i++) c[i]=a[i];
  for (i=0; i<3; i++) c[i+3]=b[i];
  for (i=0; i<6; i++) printf("%d", c[i]);
  return 0;
}
```

Input:
1 2
3 4
output:
1 2 3 4

5) Write a C program to find length of a string without using strlen()?

Ans

```
#include <stdio.h>
int main()
{
    char s[50];
    int i=0;
    gets(s);
    while(s[i]!='\0') i++;
    printf("Length = %d", i);
    return 0;
}
```

Input:
abc
output:
3

Write a C program for Concatenate two strings?

Ans:

```
#include <stdio.h>
int main()
{
    char a[50], b[50];
    int i=0, j=0;
    gets(a);
    gets(b);
    while(a[i]!='\0') i++;
    while(b[j]!='\0')
        a[i++]=b[j++];
    a[i]='\0';
    puts(a);
    return 0;
}
```

Input:
Hello
world
output:
Helloworld

7.) Write a C program to count vowels and consonants in a string.

Ans

```
#include<stdio.h>
int main(){
  char s[50];
  int i, v=0, c=0;
  gets(s);
 for(i=0; s[i]; i++){
 if(s[i]=='a'||s[i]=='e'||s[i]=='i'||s[i]=='o'||
    s[i]=='u')
      v++;
 else if(s[i]>='a'&&s[i]<='z')
      c++;
 }
 printf("vowels=%d  Consonants=%d", v, c);
 return 0;
}
```

Input:-
abc
output:-
vowels=1
Consonants=2

8.) Write a C program to check palindrome or not?

Ans:

```
#include<stdio.h>
#include<string.h>
int main(){
  char s[50], r[50];
  gets(s);
  strcpy(r, s);
  strrev(r);
 if(strcmp(s,r)==0)
  printf("palindrome");
 else
  printf("Not palindrome");
  return 0;
}
```

Input:-
madam
output:-
palindrome

9) Write a C program to reverse a string?

Ans:

```
#include <stdio.h>
#include <string.h>
int main() {
    char s[50];
    gets(s);
    strrev(s);
    puts(s);
    return 0;
}
```

Input:-
abc
Output:-
cba

10.) Write a C program to count the words in a string?

Ans:

```
#include <stdio.h>
int main() {
    char s[50];
    int i, count=1;
    gets(s);
    for(i=0; s[i]; i++)
    if(s[i]==' ')
        count++;
    printf("Words = %d", count);
    return 0;
}
```

Input:-
my name
Output:-
2

11.) Define a structure for student record and print details?

Ans:-

```
#include<stdio.h>
struct student {
    int id;
    char name[20];
};
int main()
{
    struct student s;
    printf("Enter the student Id:\n");
    scanf("%d", &s.id);
    printf("Enter the student name");
    scanf("%s", s.name);
    printf("student ID=%d\n", s.id);
    printf("student name = %s\n", s.name);

    return 0;
}
```

Input:-
10252509
Mohith kumar

output:-
student ID:- 10252509
St Name:- Mohith kumar.

13) Write a program to pass a structure of a function.

Ans:

```
#include<stdio.h>
struct data {
  int x;
};
void display(struct data d){
  printf("%d", d.x);
}
int main(){
  struct data d;
  scanf("%d", &d.x);
  display(d);
  return 0;
}
```

Input:
50
output:
50

14) Write a C program to store multiple student records using array of structures.

Ans:

```
#include<stdio.h>
struct student {
  int id;
  char name[20];
  float marks;
};
int main(){
  struct student s[3];
  int i;
  for(i=0; i<3; i++){
```

19.) Write a C-program Employee details. using structure?

Ans:

```
#include<stdio.h>
Struct emp{
    int id;
    char name[20];
    float salary;
};
int main(){
    struct emp e;
    printf("Enter the employee Id:\n");
    Scanf("%d",&e.id);
    printf("Enter the employee name:\n");
    Scanf("%s", &ename);
    Printf("Enter the employee Salary:\n");
    Scanf("%f", &esalary);
    printf("%d %s %.2f", e.id, e.name, e.salary);
    return 0;
}
```

Input:

230166
kumar
300,000

Output:

employee id:- 230166
employee name:- kumar
employee salary:- 3,00,000

```
printf("Enter ID, Name, Marks:")
Scanf("%d %s %f", &s[i].id, s[i].name,
                  &s[i].marks);
}
printf("\n Student Details:\n");
for (i=0; i<3; i++){
printf("ID: %d  Name: %s  Marks: %.2f\n",
    s[i].id, s[i].name, s[i].marks);
}
return 0;
}
```

15-) Write a C program to find the frequency of each character in a string.

```
#include<stdio.h>
int main()
{ char s[50];
 int i, j, count;
 gets(s);
 for (i=0; s[i]; i++){
    count = 1;
    if (s[i] == ' ') continue;
 for (j=i+1; s[j]; j++){
    if (s[i] == s[j]){
        count++;
        s[j] = ' ';
    }
}
```

Input:
aabcdd

output:
a = 2
b = 1
c = 1
d = 2

```
printf ("%d\n", a[3], count);
}
return 0;
}
```