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C programming

Assignment-1

1. program to calculate the factorial of the given number.

```
#include<stdio.h>
int main ()
{
 int i, fact=1, n;
 printf("Enter a number to find factorial:");
 scanf("%d",&n);
 for(i=1; i<n; i++)
 fact= fact*i;
 printf("Factorial of %d is: %d", n, fact);
 return 0;
}
```

2. write a c program to find length of the string and calculate the no of vowels in it.

```
#include<stdio.h>
#include<ctype.h>
int main()
{
 // initializing variable.
 char str[100];
 int i, vowels = 0;
 // Accepting input.
 printf("Enter the string:");
 // best way to read string rather than gets/fgets
 scanf("%[^\n]s",&str);
```

```
// initializing for loop.
for(i=0; str[i]; i++)
{
// counting the vowels.
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')
   {
    vowels++;
   }
}
// printing the count of vowels.
printf("Total number of vowels: %d\n", vowels);
return 0;
}
```

3. Write a c program for student database using structure.

```
#include<stdio.h>
struct student
{
char fullname[50];
int roll;
float marks;
};
s[5];
int main()
{
int i;
printf("Enter information of students:\n");
// storing information.
```

3(a)

```
for(i=0; i<5; ++i)
{
 sci].roll = i+1;
 printf("\nFor roll number %d\n", sci].roll);
 printf("Enter first name: ");
 scanf("%s", sci].firstName);
 printf("Enter marks: ");
 scanf("%f", &sci].marks);
}
 printf("Displaying information:\n\n");
 //displaying information.
 for(i=0; i<5; ++i)
{
 printf("\nRoll number: %d\n", i+1);
 printf("First name: ");
 puts(sci].firstName);
 printf("marks: %.1f", sci].marks);
 printf("\n");
}
 return 0;
}
```

4. program to search an element in the given array using linear search.

```
#include<stdio.h>
#include<conio.h>
int main()
{
 int a[10], i=0, ele=0, flag=1;
 //changed flag value to 1
 printf("enter array elements: ");
 for(i=0; i<10; i++)
```

```
{
  scanf("%d",&a[i]);
}
printf("enter the element to search:");
scanf("%d",&ele);
for(i=0; i<10; i++)
{
  if(a[i]==ele)
  {
    flag=0;
    break;
  }
}
if(flag==0)
// changed condition to flag==0
printf("element found");
else
  printf("element not found");
  return 0;
}
```

5. To write code for 2d matrix using multidimensional array.

```
#include<stdio.h>
int main()
{
int matrix[10][10];
int i,j,rows,cols;
printf("Enter the number of rows and columns
      of the matrix:");
```

```
scanf("%d %d", &rows, &cols);
printf("Enter the elements of the matrix:\n");
for(i=0; i<rows; i++)
{
 for(j=0; j<cols; j++)
 {
 scanf("%d", &matrix[i][j]);
 }
}
 printf("The diagonal elements of the matrix are:\n");
 for(i=0; i<rows; i++)
 {
 for(j=0; j<cols; j++)
 {
  if(i==j)
  {
  printf("%d", matrix[i][j];
  }
 }
}
  return 0;
}
```