

2 Write a C program to find length of the string and calculate the no. of vowels in it. The missing statement is scanf statement to read in the input string from the user. I've also added an additional check for upper case vowels. Finally it is changed the void main() declaration to int main().

```
#include <stdio.h>
int main()
{
    char str[50];
    int i = 0, count = 0;
    printf("Enter a string");
    scanf("%s", str);
    while (str[i] != '\0')
    {
        i++;
    }
    for (int j = 0; j < i; j++)
    {
        if (str[j] == 'a' || str[j] == 'e' || str[j] == 'i' || str[j] == 'u' || str[j] == 'A' || str[j] == 'E' || str[j] == 'O' || str[j] == 'U')
        {
            count++;
        }
    }
    printf("Length of the string: %d\n", i);
    printf("Number of vowels in the string: %d\n", count);
    return 0;
}
```

output:

Enter a number
to find factorial: 6
factorial of 6: 720

Q. a C Program for Program for Student
abase using Structure

Here the missing statement in the given program is the header file #include <string.h> for the function puts() which is used to displays the name of the students

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

```
struct student
```

```
{
    char name[50];
    int roll;
    float marks;
}
```

```
s[10];
void main ( )
```

```
{
    int i;
    printf ("Enter details for 3 students: \n");
    for (i=0; i<3; i++)
```

```
{
    printf ("\n Enter roll number");
    scanf ("%d", &s[i].roll);
    printf ("Enter name: \n");
    scanf ("%s", s[i].name);
    printf ("Enter marks");
    scanf ("%f", &s[i].marks);
    printf ("\n");
}
```

```
printf ("Displaying details for the students \n\n");
for (i=0; i<3; i++)
{
    printf ("Roll number: %d \n");
    printf ("Name");
    puts (s[i].name);
    printf ("Marks: %f \n", s[i].marks);
    printf ("\n");
}
```

Output:

```
for roll number 2.
Enter first name: anju
Enter marks: 97
Displaying Information:
Roll number: 1
First name: kaivu
Marks: 87.0
Roll number: 2
First name: anju
Marks: 97.0
```


Program to take input in a matrix (2D array) and print only the diagonal elements using multidimensional array.
To write code for 2d matrix using multidimensional array.

```
#include <stdio.h>
int main()
{
    int matrix[3][3];
    int i, j;
    printf("Enter the elements of the matrix:\n");
    for (i = 0; i < 3; i++)
    {
        for (j = 0; j < 3; j++)
        {
            scanf("%d", &matrix[i][j]);
        }
    }
    printf("\n\nThe diagonal elements of the matrix are:\n");
    for (i = 0; i < 3; i++)
    {
        printf("%d", matrix[i][i]);
    }
    return 0;
}
```

Program to calculate the factorial of the given no :

The missing statement in the given program is the one which updates the values of 'f' in each iteration of the while loop. Also, the return type of the 'main()' function should be 'int'. Here's the corrected program with the missing statement added :

```
#include <stdio.h>
#include <conio.h>
int main()
{
    int n = 0, f = 1;
    printf("Enter the number");
    scanf("%d", &n);
    while (n > 0)
    {
        f *= n;
        n--;
    }
    printf("The factorial is %d", f);
    return 0;
}
```

output :

Enter a number to find factorial : 6
factorial of 6 : 720.