Swati Mall. Programming in C.

08-04-2020 CS-1st yr

Program to find cube using function

```
/**
 * C program to find cube of any number using function
 */
#include <stdio.h>

/* Function declaration */
double cube(double num);

int main()
{
    int num;
    double c;

    /* Input number to find cube from user */
    printf("Enter any number: ");
    scanf("%d", &num);

    c = cube(num);

    printf("Cube of %d is %.2f", num, c);

    return 0;
}

/**
 * Function to find cube of any number
 */
double cube(double num)
{
    return (num * num * num);
```

Important note: Inside `cube()` function you can also use a temporary variable to store cube of `num`. Which is

```
double cube(double num)
{
    double c = num * num * num;
```

```
    return c;
}
```

However, the above approach is not worth. In addition, it increases complexity to declare a useless variable `c`. Instead we can directly return cube of `num` as in first approach.

`%.2f` prints fractional numbers up to 2 decimal places. You can also use `%f`, to print fractional numbers up to 6 decimal places (default).

```
Output
Enter any number: 5
Cube of 5 is 125.00
```

C program to find diameter, circumference and area of circle using

Declare functions to find diameter, circumference and area of circle

1. First assign a meaningful name to all the three functions. Say function to calculate diameter, circumference and area are - `getDiameter()`, `getCircumference()` and `getArea()` respectively.
2. All the above three functions uses one input i.e. radius of circle to calculate output. Hence all the three function must accept a parameter of `double` or `int` type.

Program to find diameter, circumference and area using functions

```
/**
 * C program to find diameter, circumference and area of a circle using functions
 */

#include <stdio.h>
#include <math.h> // Used for constant PI referred as M_PI


/* Function declaration */
```

```c
double getDiameter(double radius);
double getCircumference(double radius);
double getArea(double radius);


int main()
{
    float radius, dia, circ, area;

    /* Input radius of circle from user */
    printf("Enter radius of circle: ");
    scanf("%f", &radius);

    dia  = getDiameter(radius);       // Call getDiameter function
    circ = getCircumference(radius);  // Call getCircumference function
    area = getArea(radius);           // Call getArea function

    printf("Diameter of the circle = %.2f units\n", dia);
    printf("Circumference of the circle = %.2f units\n", circ);
    printf("Area of the circle = %.2f sq. units", area);

    return 0;
}


/**
 * Calculate diameter of circle whose radius is given
 */
double getDiameter(double radius)
{
    return (2 * radius);
}


/**
 * Calculate circumference of circle whose radius is given
 */
double getCircumference(double radius)
{
    return (2 * M_PI * radius); // M_PI = PI = 3.14 ...
}


/**
 * Find area of circle whose radius is given
 */
double getArea(double radius)
{
    return (M_PI * radius * radius); // M_PI = PI = 3.14 ...
}
```

Output

```
Enter radius of the circle: 10
Diameter of the circle = 20.00 units
Circumference of the circle = 62.83 units
Area of the circle = 314.16 sq. units
```