FUNCTION PROTOTYPE

Function prototype is a declaration statement that identifies function with function name, data type, a list of a arguments. All the function need to be declared before they are used. (i.e. called)

Syntax:

returntype functionname (parameter list);

- Return type – data type of return value. It can be int, float, double, char, void etc.
- Function name – name of the function
- Parameter type list –It is a comma separated list of parameter types.

Example:

int add(int a, int b);

Function declaration must be terminated with a semicolon(;).

Types of function prototypes:

1. Function with no arguments and no return values
2. Function with arguments and no return values
3. Function with arguments and one return values
4. Function with no arguments and with return values

Prototype 1: Function with no arguments and no return values

- This function doesn‟t accept any input and doesn‟t return any result.
- These are not flexible.

Program

```
#include<stdio.h>
#include<conio.h>
void  show(); //function prototype
void main()
{
        show( );                //function call
        getch();
}
```

```
void show( ) //function definition
{
        printf(“Hai \n”);
}
```

Output:

```
Hai
```

Prototype 2: Function with arguments and no return values

Arguments are passed through the calling function. The called function operates on the values but no result is sent back.

Program

```
#include<stdio.h>
#include<conio.h>
void show(int);
void main()
{
        int a;
        printf(“Enter the value for a \n”);
        scanf(“%d”, &a);
        show(a);
        getch();
}
void show(int x)
{
        printf(“Value =%d”, x);
}
```

Output:

```
Enter the value for a: 10
Value = 10
```

Prototype 3: Function with arguments and return values

- Arguments are passed through the calling function
- The called function operates on the values.

The result is returned back to the calling function.

Program

```
#include<stdio.h>
#include<conio.h>
float circlearea(int);
void main()
{
        int r;
        float area;
        printf(“Enter the radius \n”);
        scanf(“%d”,&r);
        area=circlearea(r);
        printf(“Area of a circle =%d\n”, area);
        getch();
}
int circlearea(int r1)
{
        return 3.14 * r1 * r1;
}
```

Output:

```
Enter the radius
2
Area of circle = 12.000
```

Prototype 4: Function with no arguments and with return values

- This function doesn‟t accept any input and doesn‟t return any result.
- The result is returned back to the calling function.

Program

```
#include<stdio.h>
#include<conio.h>
float circlearea();
void main()
```

```
{
        float area;
        area=circlearea();
        printf("Area of a circle =%d\n", area);
        getch();
}
int circlearea()
{
        int r=2;
        return 3.14 * r * r;
}
```

Output:

```
Enter the radius
2
Area of circle = 12.000
```