Jiangxi University of Science and Technology

Ch06 Modularity Using Functions: Part I

Lecture0602 Returning a Value

6.2 Returning a Value

➢ **From its side of the return transaction, the called function must provide:**

- Data type of the returned value, which is specified in the function's header line
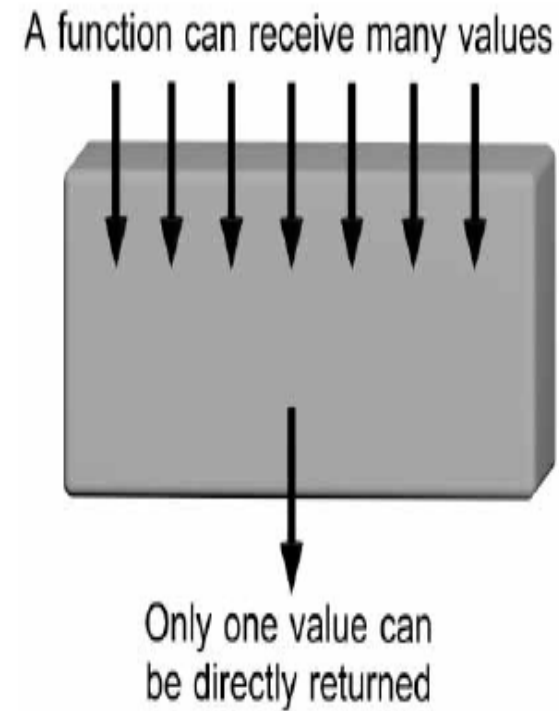- Actual value being returned, which is specified by a return statement

A function can receive many values

Only one value can
be directly returned

Figure 6.7 A function directly returns at most one value when it is called by value

6.2 Returning a Value

➢ To return a value, use a return statement

- *return (expression);*
- *or,*
- *return expression;*

➢ **The expression is evaluated first; its value is then automatically converted to the return value's data type as specified in the function's header line before being sent back to the calling function**

➢ **Return value is converted to the data type declared in the function's header line**

6.2 Returning a Value

Program 6.4

1. #include <stdio.h>
2. int main(){
3. float findMax(float, float);//the function prototype
4. float firstnum, secnum, max;
5. printf("\nEnter a number: ");
6. scanf("%f", &firstnum);
7. printf("Great! Please enter a second number: ");
8. scanf("%f", &secnum);
9. **max=findMax(firstnum, secnum)**;//the function is called
10. printf("\nThe maximum of the two numbers is %f\n", max);
11. return 0;
12. }

```
13.  float findMax(float x, float y)
14.  {
15.  float maxnum;
16.          if (x >= y)
17.  maxnum = x;
18.          else
19.  maxnum = y;
20.          return (maxnum);
21.  }
```

6.2 Returning a Value

➢ Program 6.5

```
1.   #include <stdio.h>
2.   #define MAXCOUNT 4
3.   int main(){
4.        float tempConvert(float);
5.        float celsius, fahren;
6.        for(int count = 1; count <= MAXCOUNT; count++){
7.            printf("\nEnter a Fahrenheit temperature: ");
8.            scanf("%f", &fahren);
9.            celsius = tempConvert(fahren);
10.           printf("The Celsius equivalent is %5.2f\n", celsius);
11.       }
12.       return 0;
13.  }
```

➢ Program 6.5

```
13.  /* convert fahrenheit to celsius */
14.  float tempConvert(float inTemp)
15.  {
16.       return( (5.0/9.0)*(inTemp-32.0) );
17.  }
```

Value is automatically converted from double to float (it may also generate a compiler warning message)

6.2 Returning a Value

➢Function Stubs(函数存根)

   – A stub is the beginning of a final function, used as a **placeholder**(占位符号) until the final function is completed

```
float findMax(float x, float y)
{
 printf("In findMax()\n");
 printf("The value of x is %f\n", x);
 printf("The value of x is %f\n ", y);
 return 1.0;
}
```

6.2 Returning a Value

➤Function Stubs (函数存根)

- – A stub must compile and link with its calling module

- – Stub should display a message that it has been entered successfully and the value(s) of its

  received arguments

Reference

- BOOK
- Some part of this PPT given by Prof 欧阳城添

(Prof: Chengtian Ouyang)

- with special thank
- https://www.codingunit.com/c-tutorial-first-c-program-hello-world