Programming with C I

Fangtian Zhong
CSCI 112

Gianforte School of Computing
Norm Asbjornson College of Engineering
E-mail: fangtian.zhong@montana.edu

2024.01.31

Library Functions

code reuse

- reusing program fragments that have already been written and tested

C standard libraries

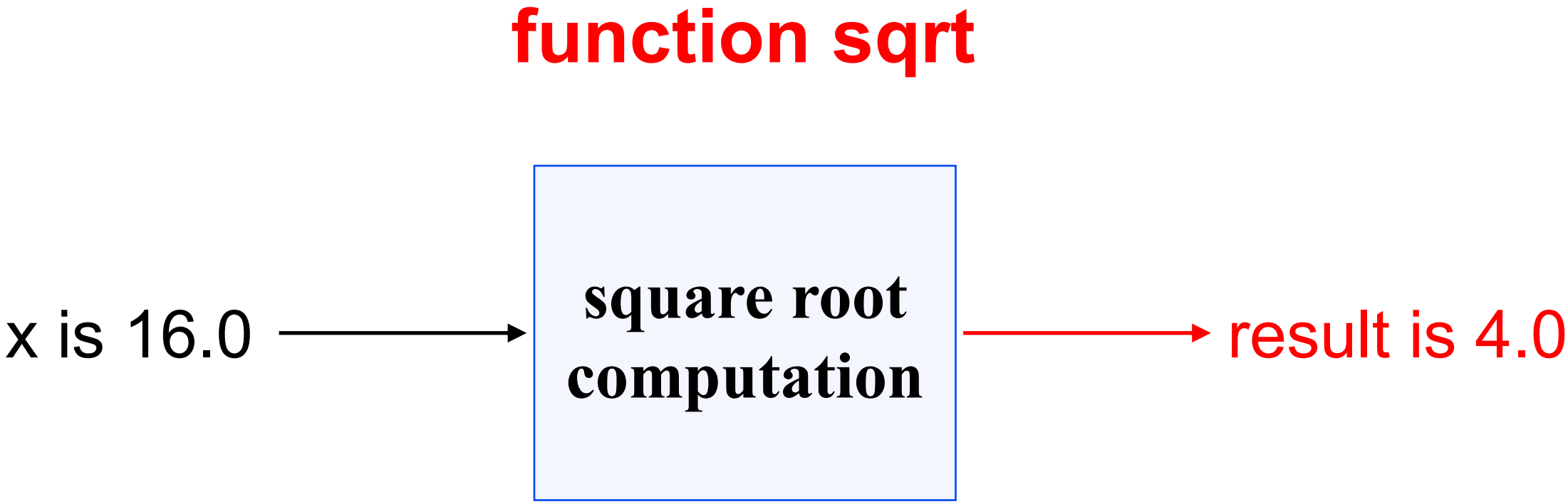
- many predefined functions can be found here

stdio.h

stdlib.h

Note: gcc –o exe **–Wall** my_c_program.c

Figure Function sqrt as a “Black Box”



C Math Library Functions

Examples

- abs(x)
- ceil(x)
- log(x)
- sin(x)
- sqrt(x)

Figure Function scale

```
/*
 * Multiplies its first argument by the power of 10 specified
 * by its second argument.
 * Pre : x and n are defined and math.h is included.
 */
double
scale(double x, int n)
{
        double scale_factor;      /* local variable */
        scale_factor = pow(10, n);

        return (x * scale_factor);
}
```

Wrap Up

- Code reuse is good.
- When possible, develop your solution from existing information.
- Use C’s library functions to simplify mathematical computations.
- You can write functions with none, one, or multiple input arguments.
- Functions can only return one value.

THE END

Fangtian Zhong
CSCI 112

Gianforte School of Computing
Norm Asbjornson College of Engineering
E-mail: fangtian.zhong@montana.edu

2024.01.31