
Functions

Divide and Conquer

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Last Time

- ◆ We
 - Completed discussing reading from and writing to files
- ◆ Today we will
 - Begin learning about functions and modularity in C++

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Problem

- ◆ Write a function that sums integers in a particular range
- ◆ Write a program that uses the above function

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Example

```
#include <iostream>
char isEven(int);
int getVal();
int main(void)
{
    int num;
    while ((num = getVal()) != -9999)
    {
        if (isEven(num) == 'E')
            cout << "EVEN" << endl;
        else
            cout << "ODD" << endl;
    }
    return 0;
}
```

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Example (cont.)

```
char isEven(int number)
{
    const char even = 'E';
    const char odd = 'O';
    char answer;
    if (number % 2 == 0)
        answer = even;
    else
        answer = odd;
    return answer;
}
```

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Example (cont.)

```
int getVal()
{
    int number;
    cout << "Enter an integer number: ";
    cin >> number;
    return number;
}
```

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Program

- Write a program that calculates the area of a circle
- Write a program that calculates the area of a circle using three functions, getRadius, calcArea and outputArea

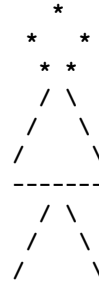
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Program

- Write a program that draws the following stick figure using functions and top down design.



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Program

- Write a function that takes as input two numbers and returns the larger
- Write a function that takes as input two numbers and returns the smaller
- Write a function that computes the average given a sum and number of elements

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Summary

- In today's lecture we covered
 - Library functions
 - Programmer defined functions
- Readings
 - P. 170 - 180

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