**Comments**

How can another programmer easily understand your code?

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\* Purpose: Read in all of the file, summing the numbers

\* Parameters: Scanner – Scanner for reading from file

\* Algorithm: For each value in the file, read in and add to total.

\* Return value: int – the total from the file

\*/

public static int sumFromFile( Scanner scan )

{

int total = 0;

while(scan.hasNext())

total += scan.nextInt();

return total;

}

**Objects as Parameters**

We learned that variables are copied

What does that mean for objects?

public static void main(String[ ] args)

{

File myFile = new File(“acorns.txt”);

Scanner myScan = new Scanner(myFile);

int num = sumFromFile (myScan);

System.out.println(“There are “ + num + “ acorns.”);

}

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public static int sumFromFile( Scanner scan )

{

int total = 0;

while(scan.hasNext())

total += scan.nextInt();

return total;

}

**Any Method can call any method**

public class FileMinimum

{

public static void main(String[ ] args)

{

File myFile = new File(“acorns.txt”);

Scanner myScan = new Scanner(myFile);

int num = findMinFromFile (myScan);

}

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\* Purpose: Read in all of the file and find smallest value

\* Parameters: Scanner – Scanner for reading from file

\* Algorithm: For each value in the file, read in and check if minimum

\* Return value: int – the minimum value from the file

\*/

public static int findMinFromFile( Scanner scan )

{

int min =

while(scan.hasNext())

{

int value = scan.nextInt();

min = minimum(

}

return min;

}

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\* Purpose: Return the smaller of the two parameters

\* Parameters: int a, int b – two numbers to compare

\* Algorithm: Return a if it is the smallest, otherwise return b

\* Return value: int – the smaller value

\*/

public static intminimum(int a, int b)

{

if(a < b)

return a;

else

return b;

}

}

**What should be methods (other than main) in this algorithm?**

1. Announce that the purpose of the program is to calculate how many gallons of paint to buy for painting each room of a house.
2. Ask the user for their name.
3. While the user is not yet ready to stop
   1. Ask the user by name for the width of the room in feet and additional inches
   2. Ask the user by name for the length of the room in feet and additional inches
   3. Ask the user by name for the height of the room in feet and additional inches
   4. Calculate the width to be only in inches by feet\*12 + inches
   5. Calculate the height to be only in inches by feet\*12 + inches
   6. Calculate the length to be only in inches by feet\*12 + inches
   7. Calculate the dimensions of the room as width\*length\*height (in inches) and store in room\_size
   8. Ask the user by name for the number of doors in the room
   9. Subtract 192 \* num\_doors from room\_size
   10. Ask the user by name for the number of windows in the room
   11. Set the sum of window size to 0
   12. For each window in the room
       1. Ask the user by name for the width of the window in inches
       2. Ask the user by name for the height of the window in inches
       3. Calculate the dimensions of the window as width\*height
       4. Add dimensions to the sum of windows size
   13. Subtract the sum of windows size from room\_size
   14. Convert room\_size to feet by room\_size / 12 (integer), store in room\_feet
   15. Find leftover inches by (room\_size/12.0 – room\_feet)\*12
   16. Calculate num\_gallons as the ceiling of room\_feet / 300
   17. Output to the user that the room’s walls have area room\_feet and room\_inches
   18. Output to the user that the room will need num\_gallons of paint, since one gallon covers 300 sq ft of wall.
4. Thank the user for using the software and wish them luck in their painting

**Important Concepts**

* Defining a method:
* Calling a method:
* Argument:
* Parameter:
* Passing a value:
* Scope:
* Returning a value:
* Static: