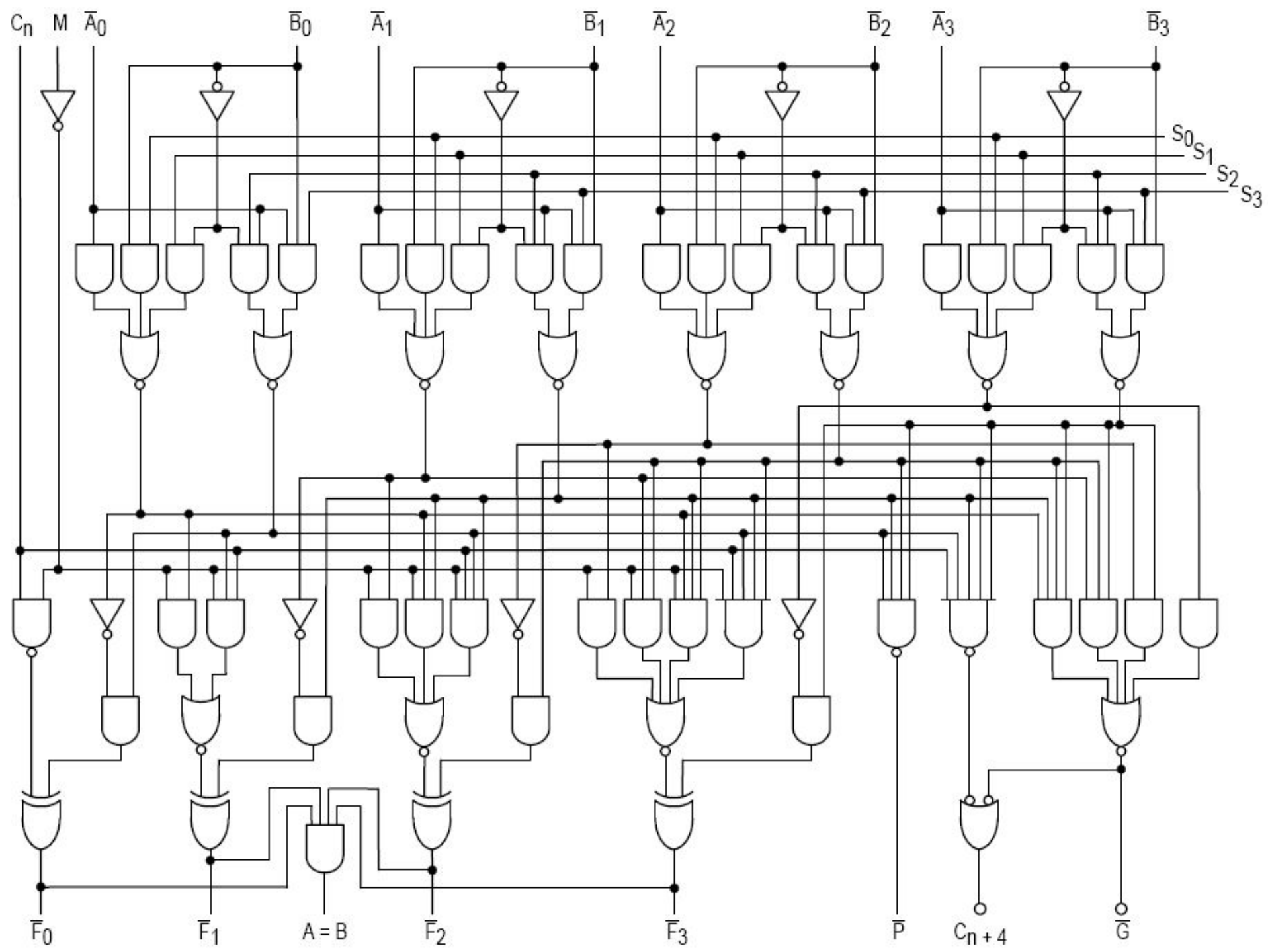


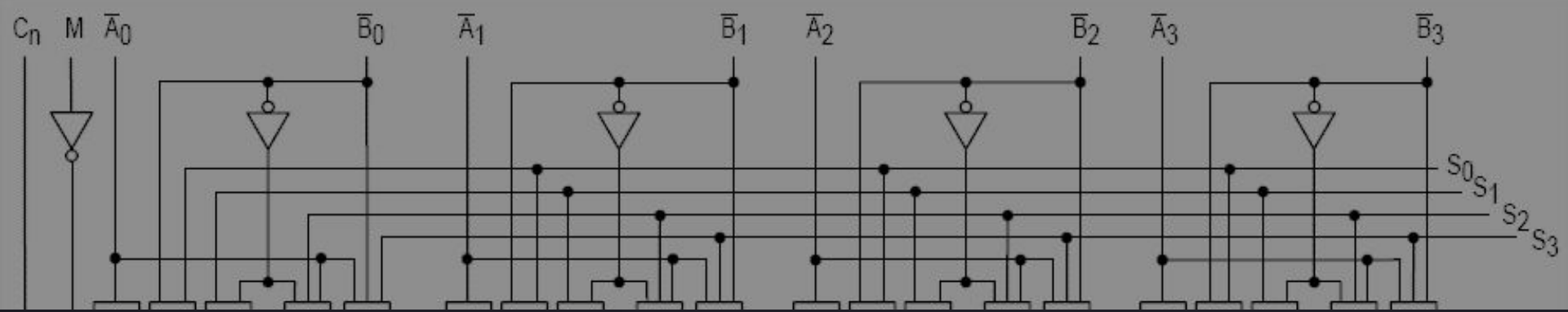
How Automated Tools can Communicate Effective Strategies for Fixing Bugs

Justin Smith



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 <https://jssmith1.github.io/>



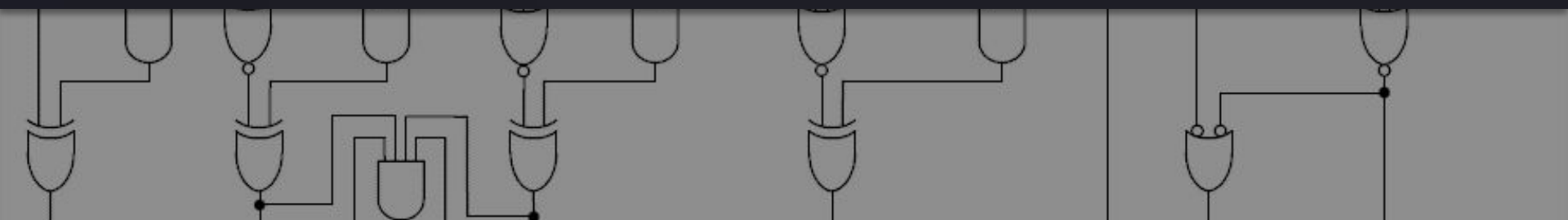
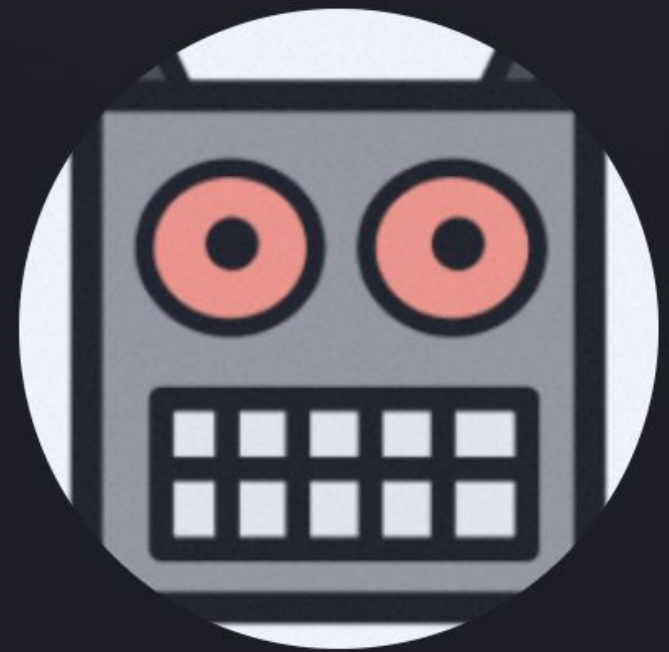


StartupBot

The future has landed

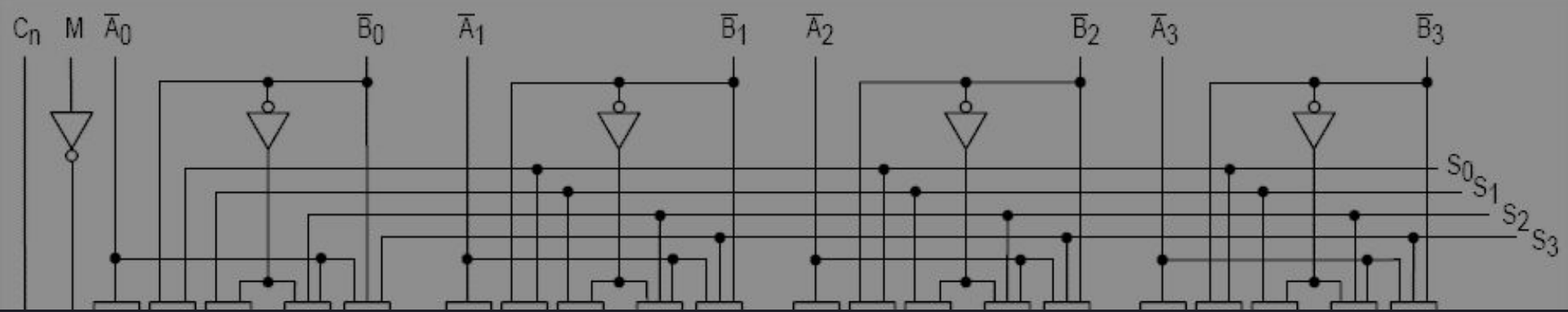
And there are no hoverboards or flying cars.

Just startups. Lots of computer generated startups.

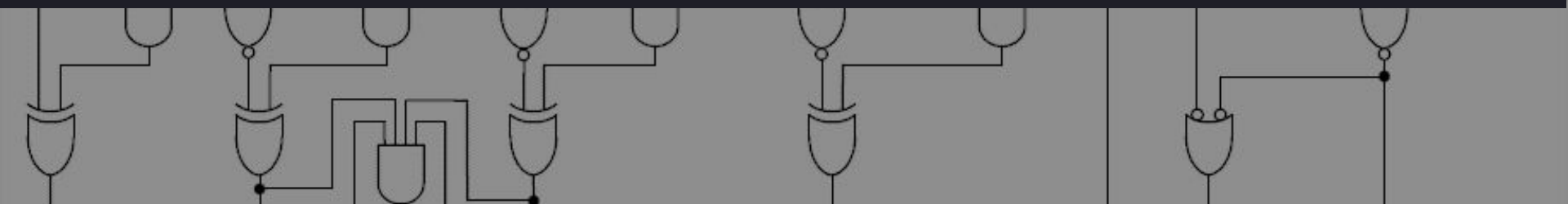
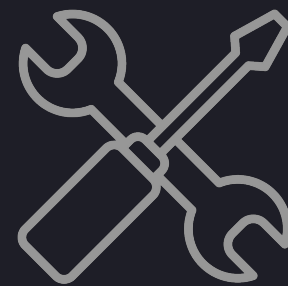


“We believe the process of creating a startup can be largely automated.”

<http://startupbot.github.io/>



Many of our defect
detection tools are
stuck in the dark ages.





Java ▼

Example ▼

```
1 void setup(){  
2   int thing = 1.5;  
3 }
```

cannot convert from float to int





processing cannot convert from float to int

× 🔍

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About 3,980,000 results (0.58 seconds)

[https://stackoverflow.com > questions > cannot-convert-from-float-to-int-processing-java](https://stackoverflow.com/questions/cannot-convert-from-float-to-int-processing-java)

Cannot convert from float to int Processing/Java - Stack Overflow

Jul 28, 2017 — This code gives an error on both samples of returning a value saying "**Type mismatch**: Cannot convert from float to int.

[2 answers](#) · Top answer: You need to change the return type to float in order to return decimal ...

Cannot convert from float to int Processing/Java

Asked 2 years, 9 months ago Active 2 years, 9 months ago Viewed 1k times

I have some code here:

```
int mutate(float x){
    if (random(1) < .1){
        float offset = randomGaussian()/2;
        float newX = x + offset;
        return newX;
    } else {
        return x;
    }
}
```

This code gives an error on both samples of returning a value saying "Type mismatch: Cannot convert from float to int." What is wrong with my code?

Thanks in advance.

processing

Cannot convert from float to int Processing/Java

Asked 2 years, 9 months ago Active 2 years, 9 months ago Viewed 1k times

I have

3



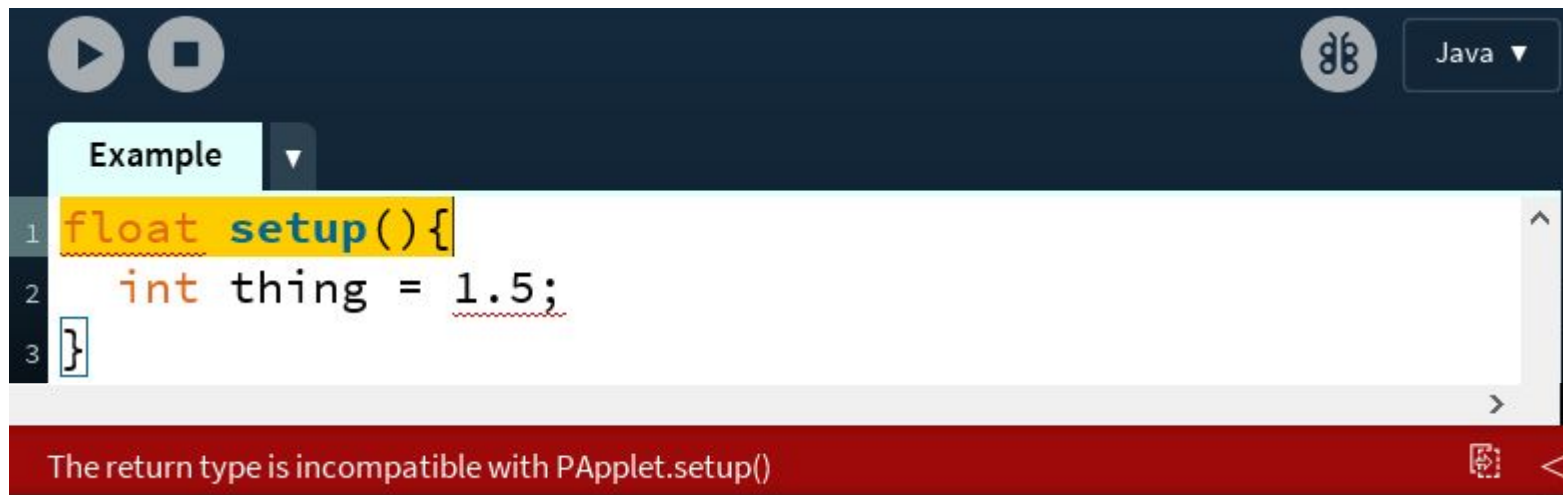
You need to change the return type to float in order to return decimal values (if that's what you are interested in):

```
float mutate(float x){  
    if (random(1) < .1){  
        float offset = randomGaussian()/2;  
        float newx = x + offset;  
        return newx;  
    } else {  
        return x;  
    }  
}
```

This code gives an error on both samples of returning a value saying "Type mismatch: Cannot convert from float to int." What is wrong with my code?

Thanks in advance.

processing

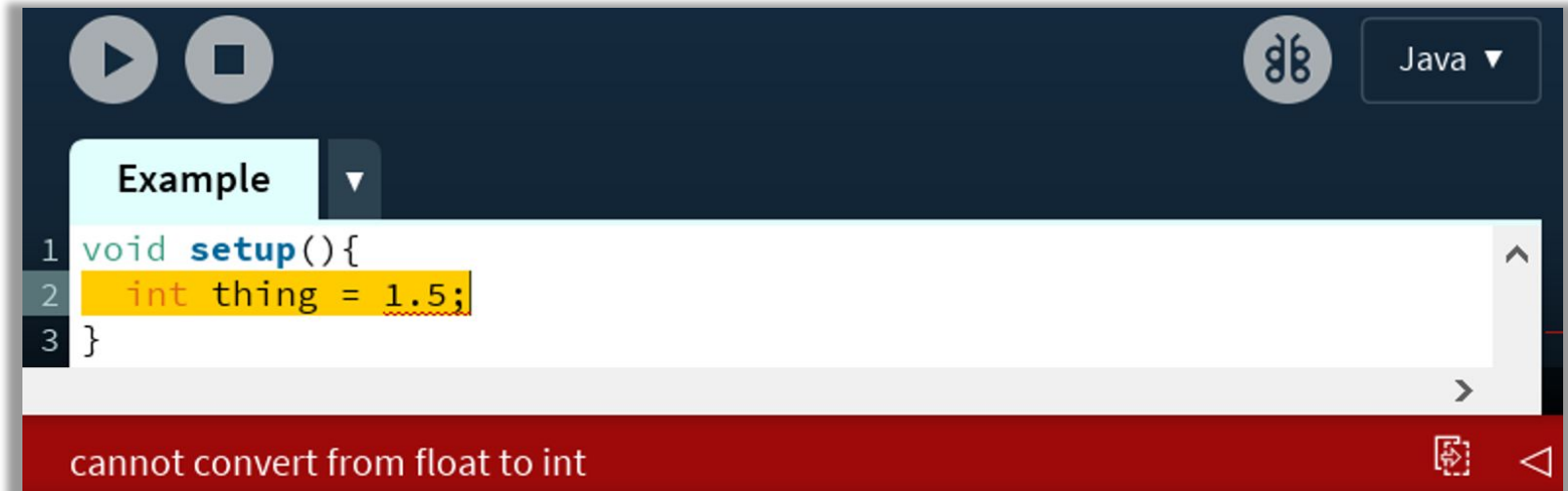


Example ▾

```
1 float setup(){  
2     int thing = 1.5;  
3 }
```

The return type is incompatible with PApplet.setup()

What went wrong?



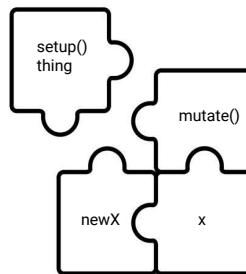
The screenshot shows an IDE window with a dark theme. At the top, there are play and stop buttons, a logo, and a language dropdown set to 'Java'. Below the toolbar is a tab labeled 'Example'. The code editor contains three lines of Java code:

```
1 void setup(){  
2   int thing = 1.5;  
3 }
```

The line `int thing = 1.5;` is highlighted in yellow. A red error bar at the bottom of the editor displays the message: `cannot convert from float to int`.



No
Explanation



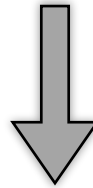
Mismatched
Example



Different
Root Cause

MatchingRef

cannot convert from float to int



Translation: You are trying to use the variable *thing* of type *int* as a *float*-type variable.

You may have assigned a *float* value to variable *thing* of type *int*.



You may have returned a *float* value in a method that expects to return a *int* value.



You may have used *int*-type variable *thing* in an operation involving *float* type.



☐ **Change the type of *thing* from *int* to *float*.**



Incorrect Example

```
int thing = 3;  
thing = thing * 3.14;
```

Correct Example

```
float thing = 3;  
thing = thing * 3.14;
```

Happy with these suggestions?



MatchingRef

Cannot convert from **float** to **int**

*Translation: You are trying to use the variable **thing** of type **int** as a **float**-type variable.*

1: You may have assigned a **float value to variable **thing** of type **int****



Tick the box once you have tried the suggestion

☐ Suggestion 1: Change variable declaration of **thing** to type **float**



```
int thing = 5.0;
```

```
float thing = 5.0;
```

☐ Suggestion 2: Change value of **thing** to a **int** value



```
SQLFileCache.java X AddPatientFileA... ReportAdverseEv... AdverseEventBea... ReportAdverseEv...

}

private List<String> parseSQLFile(String filepath) throws FileNotFoundException, IOException {
    List<String> queries = new ArrayList<String>();
    BufferedReader reader = new BufferedReader(new FileReader(new File(filepath)));
    String line = "";
    String currentQuery = "";
    while ((line = reader.readLine()) != null) {
        for (int i = 0; i < line.length(); i++) {
            if (line.charAt(i) == ';') {
                queries.add(currentQuery);
                currentQuery = "";
            } else
                currentQuery += line.charAt(i);
        }
    }
}
```

Bug Info

Resolution Strategy

Console

▼ ☐ Potential Path Traversal (Line 27 foo.java)

Detected By: Find Security Bugs (FSB)

FSB Confidence/Severity: High/High

FSB Pattern: [Path Traversal - Read File](#)

▶ ☐ Read the vulnerability info.

▼ ☐ Check for a false positive.

If the user cannot control the filepath, then this instance is a false positive.

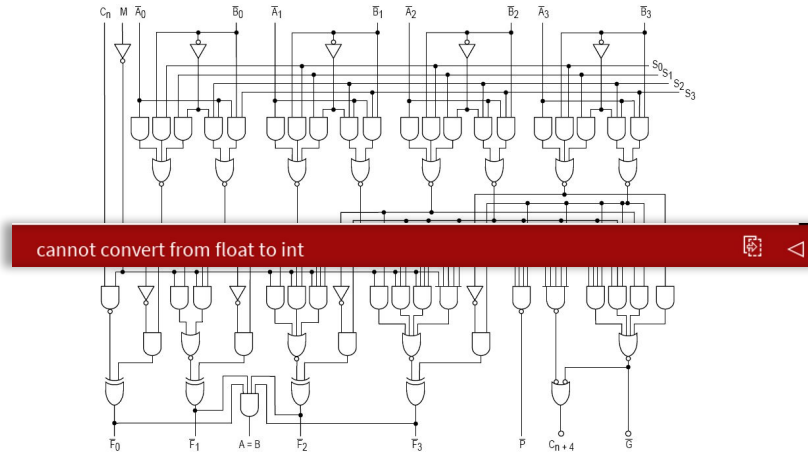
▼ ☐ Determine where the filepath is defined.

Invoke [Open Declaration](#) on the filepath variable.

▶ ☐ Determine where this method can be called.

▶ ☐ Consider the possible fixes.

Takeaways



Cannot convert from float to int

Translation: You are trying to use the variable *thing* of type *int* as a *float*-type variable.

1: You may have assigned a float value to variable *thing* of type *int*

Tick the box once you have tried the suggestion

☐ Suggestion 1: Change variable declaration of *thing* to type *float*

`int thing = 5.0;`

`float thing = 5.0;`

☐ Suggestion 2: Change value of *thing* to a *int* value

[Processing Plugin](https://github.com/jssmith1/helpful-java-mode)


<https://github.com/jssmith1/helpful-java-mode>

[MatchingRef Strategies](https://github.com/jssmith1/RefPage)

<https://github.com/jssmith1/RefPage>

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