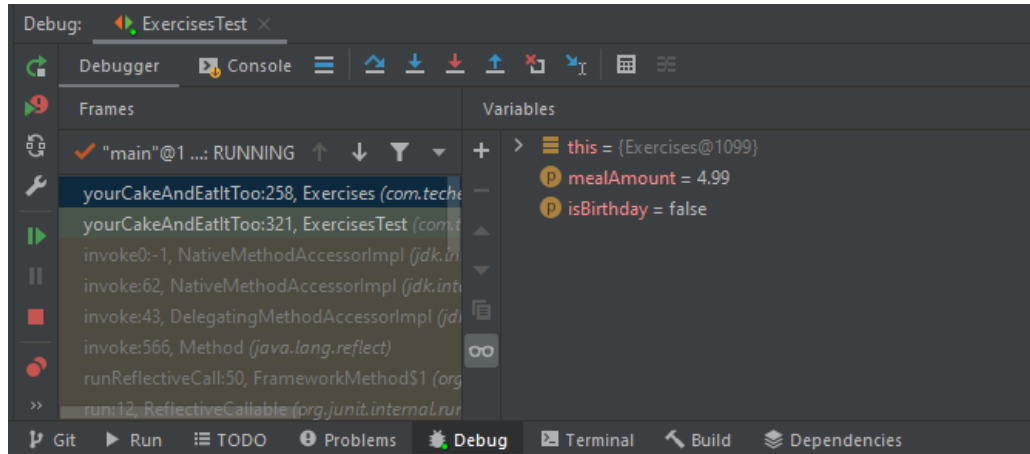


Troubleshooting and Debugging



Use the Debugger



- spend time practicing with working code
- explore its features
- practice stepping through code
- practicing setting breakpoints

Read Error Messages

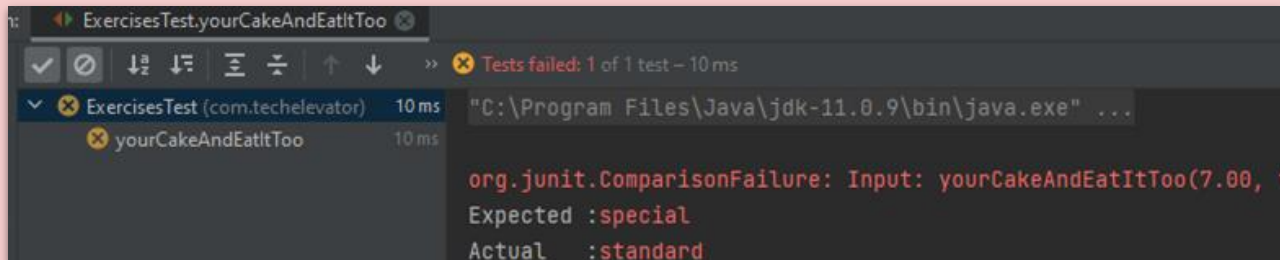
```
== true) {  
= mealAmounts + 5;
```

Cannot resolve symbol 'mealAmounts'

Create local variable 'mealAmounts' Alt+Shift+Enter More actions... Alt+Enter

Compile Time Errors

Test Case Assertion Errors



The screenshot shows the IntelliJ IDEA test runner interface. At the top, a toolbar contains icons for running, debugging, and other test actions. Below the toolbar, a table lists test results. The first entry, 'ExercisesTest (com.techelevator)', is expanded to show a single failed test case, 'yourCakeAndEatItToo', which took 10 ms to execute. To the right of the table, the details of the failure are displayed. It shows the command used to run the test: '"C:\Program Files\Java\jdk-11.0.9\bin\java.exe" ...'. The error message is 'org.junit.ComparisonFailure: Input: yourCakeAndEatItToo(7.00, 1)'. Below this, it specifies 'Expected :special' and 'Actual :standard'.

```
ExercisesTest (com.techelevator) 10 ms  
  yourCakeAndEatItToo 10 ms  
    org.junit.ComparisonFailure: Input: yourCakeAndEatItToo(7.00, 1)  
    Expected :special  
    Actual   :standard
```

```
"C:\Program Files\Java\jdk-11.0.9\bin\java.exe" ...
```

```
java.lang.NullPointerException Create breakpoint
```

```
at com.techelevator.Exercises.yourCakeAndEatItToo(Exercises.java:251)
```

```
at com.techelevator.ExercisesTest.yourCakeAndEatItToo(ExercisesTest.java:321) <22 internal lines>
```

Runtime Errors

Explain it to the Duck

Can I help?



Use Timeboxing



Estimate how long the problem should take.

Set a Timer

Work until you complete the problem or the timer goes off

If the timer goes off before you are done. Ask for help or move on to something else.

Walk Away for a While

- Work on something else
- Relax
- Take a break
- Take a walk
- Do some exercise
- Get some sleep



Don't get attached to your code.
Throw it away



Start again fresh

Other tips

Make small, simple incremental changes

Don't assume because something doesn't work it wasn't partially correct

Test in your head

Ask another programmer to take a look