

Practical Assignment



TUTORIAL

This tutorial will help you to get started with the practical assignment.

There is an adjusted tutorial for different platforms.

We show one way to get started, but this is not the only way.

If you run into any additional problems or have questions, you can post them on the dedicated discussion page on canvas.

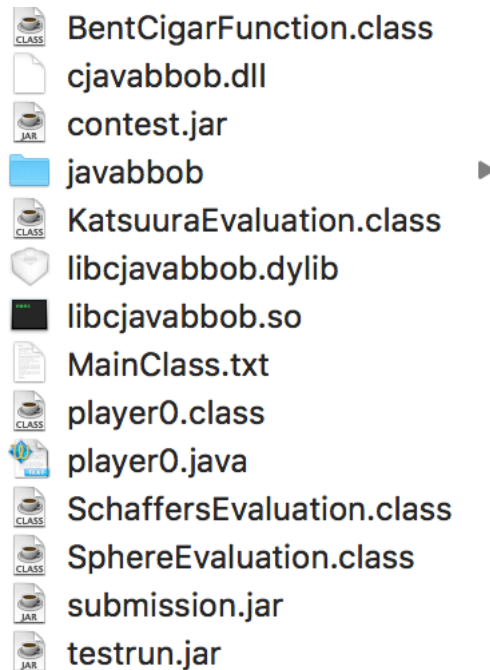
Note that you are only coding an algorithm and that, once this algorithm is created, you can test it on all three functions. This means that the algorithm and functions are completely separated. Through the function properties, you can adjust your algorithm.

For some general remarks and tips, check the end of the tutorial

Mac/Linux/Ubuntu

STEP 1

Download the “assignmentfiles_2018.zip” and keep them in the same folder



STEP 2

Change the player0.java file and the Main-Class.txt to your group name

- Example shown for group 1
- The Main-Class has no spaces after or below the text

The image shows two overlapping code editor windows. The top window is titled 'player0.java' and contains the following code:

```
1 import org.vu.contest.ContestSubmission;
2 import org.vu.contest.ContestEvaluation;
3
4 import java.util.Random;
5 import java.util.Properties;
6
7 public class player0 implements ContestSubmission
8 {
9     Random rnd_;
10    ContestEvaluation evaluation_;
11    private int evaluations_limit_;
12
13    public player0()
14    {
15        rnd_ = new Random();
16    }
17
18    public
```

The bottom window is titled 'player1.java' and contains the following code:

```
1 import org.vu.contest.ContestSubmission;
2 import org.vu.contest.ContestEvaluation;
3
4 import java.util.Random;
5 import java.util.Properties;
6
7 public class player1 implements ContestSubmission
8 {
9     Random rnd_;
10    ContestEvaluation evaluation_;
11    private int evaluations_limit_;
12
13    public player1()
14    {
15        rnd_ = new Random();
16    }
17
18    public
```

Below the player0.java window, there is a small window titled 'MainClass.txt — Edited' with the text 'Main-Class: player1'.

STEP 3

- Compile your java file through the terminal
 - Go to the folder where all files are located and type:
 - `javac -cp contest.jar player1.java`
 - This will create a `player1.class` file
- Create a submission by typing:
 - `jar cmf MainClass.txt submission.jar player1.class`
- If you created additional java files, just add them after the `player1.java` file and include the compiled files after `player1.class`

STEP 4

- Test your code on the dummy function by typing:
 - `java -jar testrun.jar -submission=player1 -evaluation=SphereEvaluation -seed=1`
- Test your code on one of the contest functions by typing:
 - `java -jar testrun.jar -submission=player1 -evaluation=BentCigarFunction -seed=1`

```
Jacquelines-MacBook-Pro:2017 Jacqueline$ java javac -cp contest.jar player1.java
Error: Could not find or load main class javac
Jacquelines-MacBook-Pro:2017 Jacqueline$ javac -cp contest.jar player1.java
Jacquelines-MacBook-Pro:2017 Jacqueline$ jar cmf MainClass.txt submission.jar player1.class
Jacquelines-MacBook-Pro:2017 Jacqueline$ java -jar testrun.jar -submission=player1 -evaluation=BentCigarFunction -seed=1
```

- Get the “cjavabob” not found error? See next slide
- For online contest: upload your submission.jar with provided code

Common Error (for Ubuntu)

- Get the “cjavabob” not found error?
- The library is not in the path
- Include library in path by typing:

```
export LD_LIBRARY_PATH=~/Documents/  
assignmentfiles_2017/
```

(change path if your folder is somewhere else)

- Go to step 4

Windows

Use linux console through

<https://www.windowcentral.com/how-install-bash-shell-command-line-windows-10> and follow previous tutorial

(note: not tested)

Windows

Required: Java 32 bit

Users can check which Java is installed in CMD. Type 'java -version' in the cmd-prompt (terminal), and if it returns something with '64', it's 64-bit, otherwise, it's 32-bit.

Important: After adding something to your PATH, you have to restart your cmd-prompt in order for the changes to take effect.

Case 1: There is no Java installed

Install Java Development Kit 32 bit from Oracle website

<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html> (Links to an external site.) Links to an external site., the 32-bit version is the one with x86 in the name, the second from below.

After installing, add the following path to the Environment Variable PATH: "C:\Program Files (x86)\Java\jdk1.8.0_144\bin" (depending on the versions)

See <https://www.opentechguides.com/how-to/article/windows-10/113/windows-10-set-path.html> about adding things to PATH.

Case 2: Java 64-bit is already installed.

Install 32-bit Java. Now there are two options:

Either remove 64-bit Java and see Case 1 (easiest)

If you can't remove 64-bit for some reasons, just install 32-bit Java, and then add it to PATH like in Case 1, and move it all the way to the top in the PATH environment variable (this is important!)

Case 3: Both versions are already installed.

See Case 2.

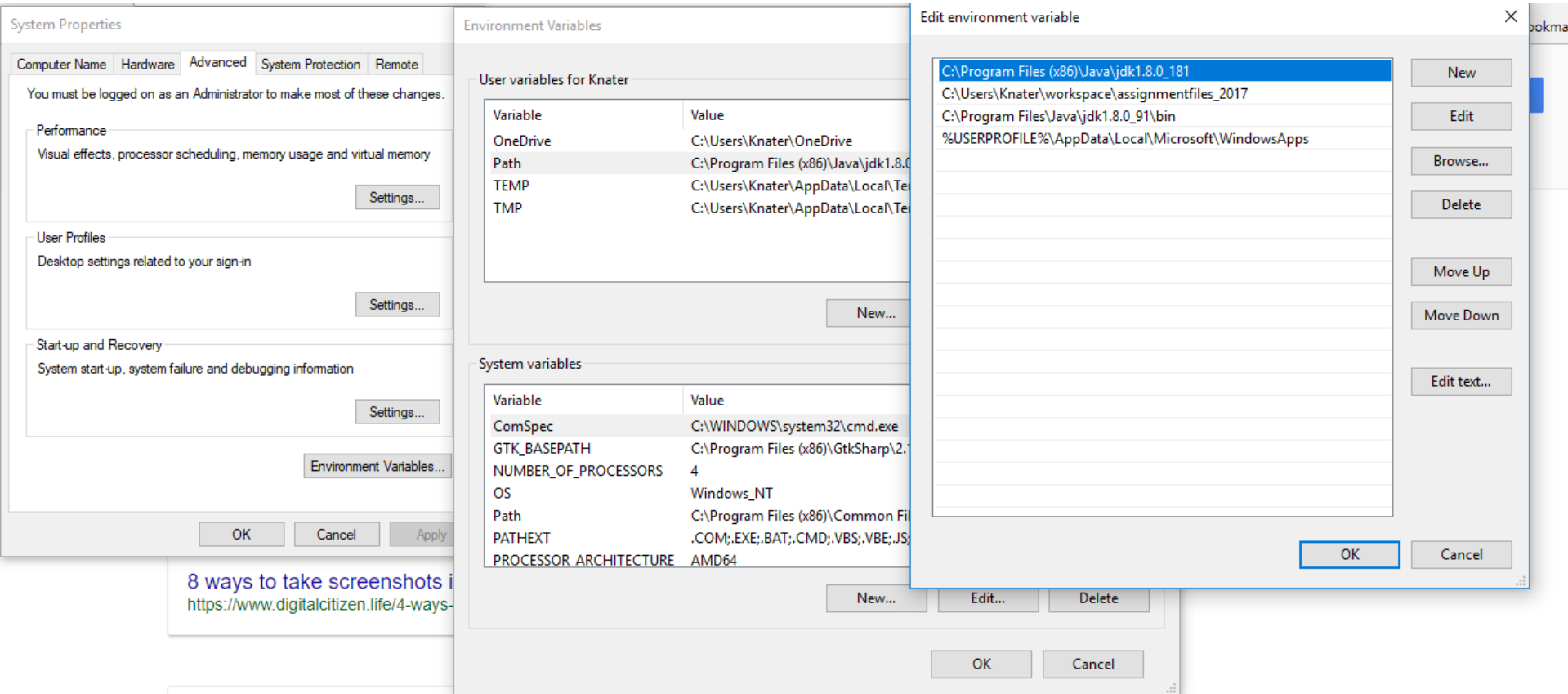
Add contest library

Add the dll contest file to the PATH environment similar to the 32 bit Java version

Help:

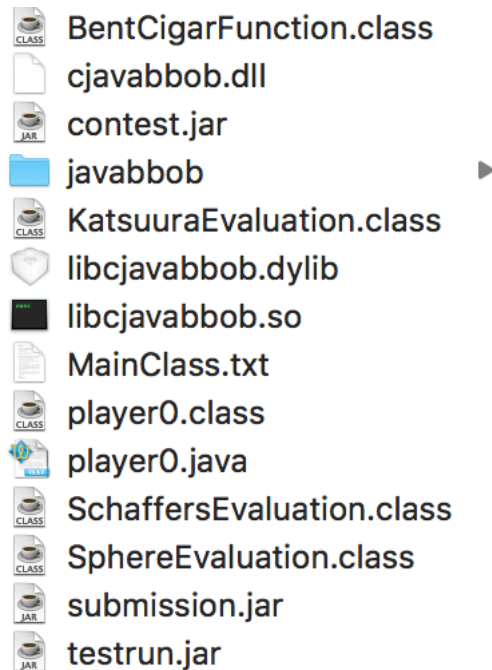
<https://www.opentechguides.com/how-to/article/windows-10/113/windows-10-set-path.html>
about adding things to PATH.

Result:



STEP 1

Download the “assignmentfiles_2018.zip” and keep them in the same folder



STEP 2

- Compile your java file through the terminal
 - Go to the folder where all files are located and type:
 - `javac -cp contest.jar player1.java`
 - This will create a `player1.class` file
- Create a submission by typing:
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STEP 3

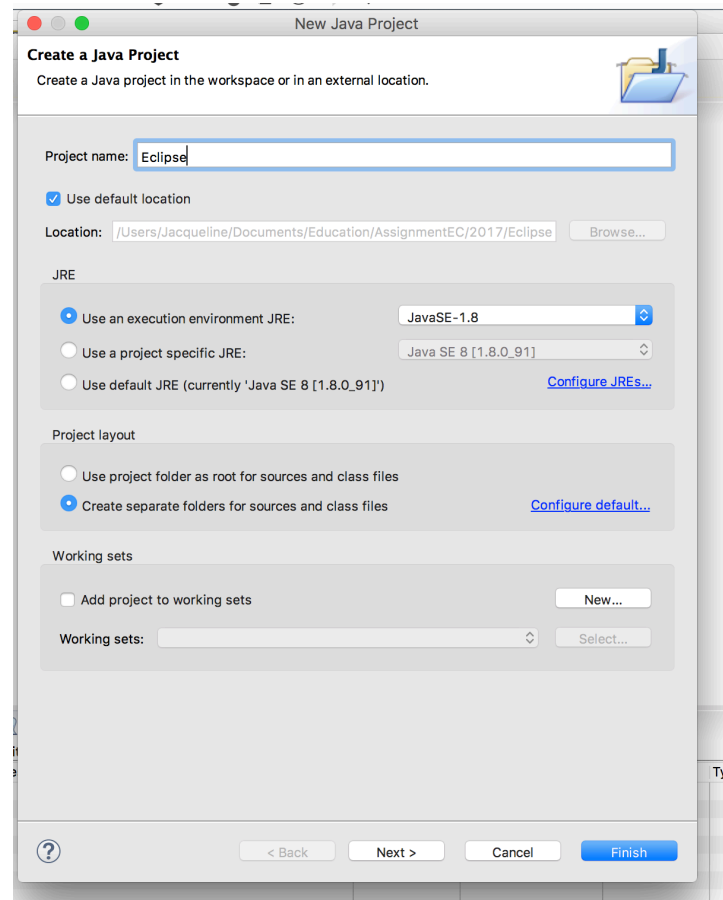
- Test your code on the dummy function by typing:
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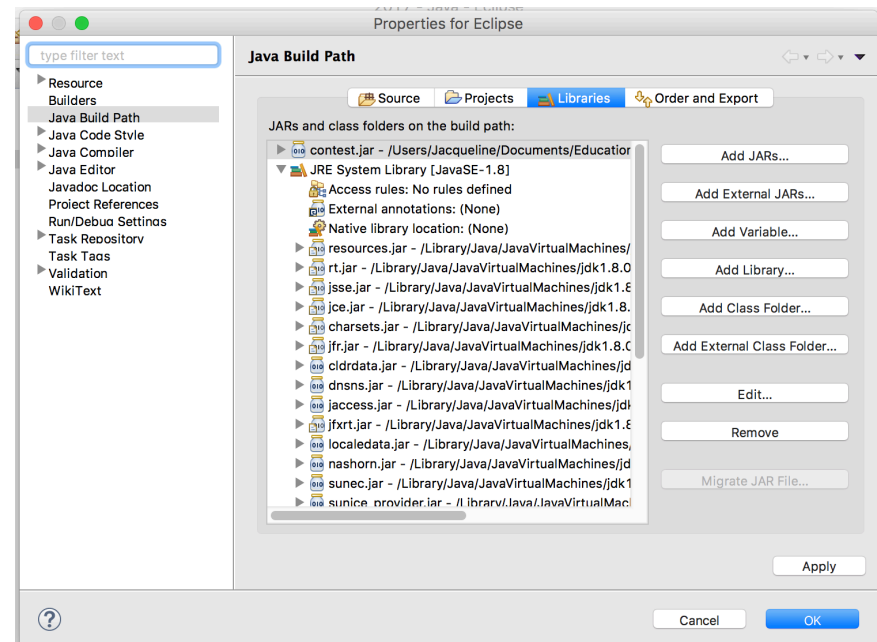
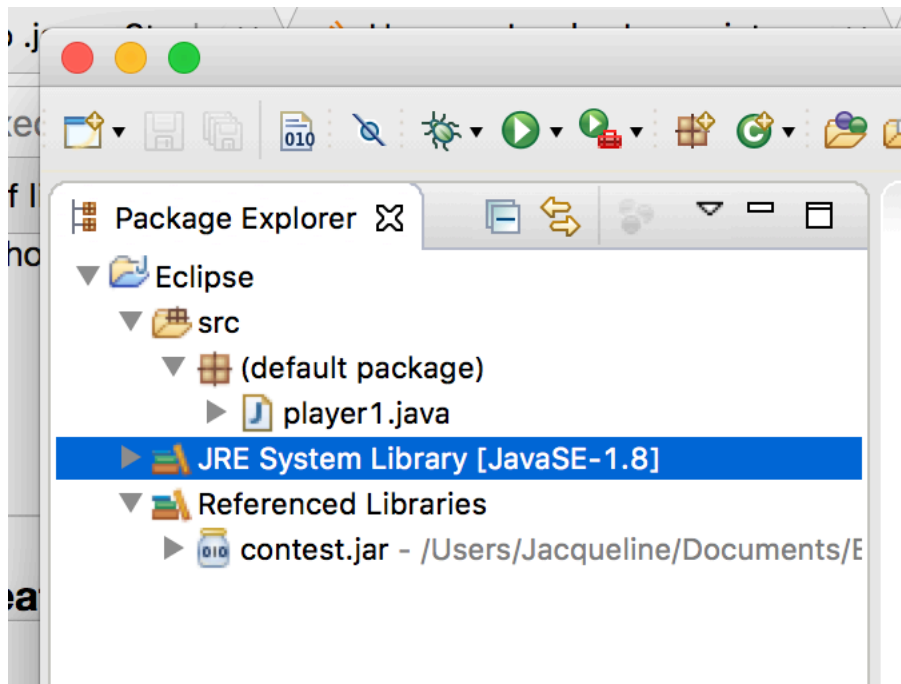
- For online contest: upload your submission.jar with provided code

Using Eclipse?

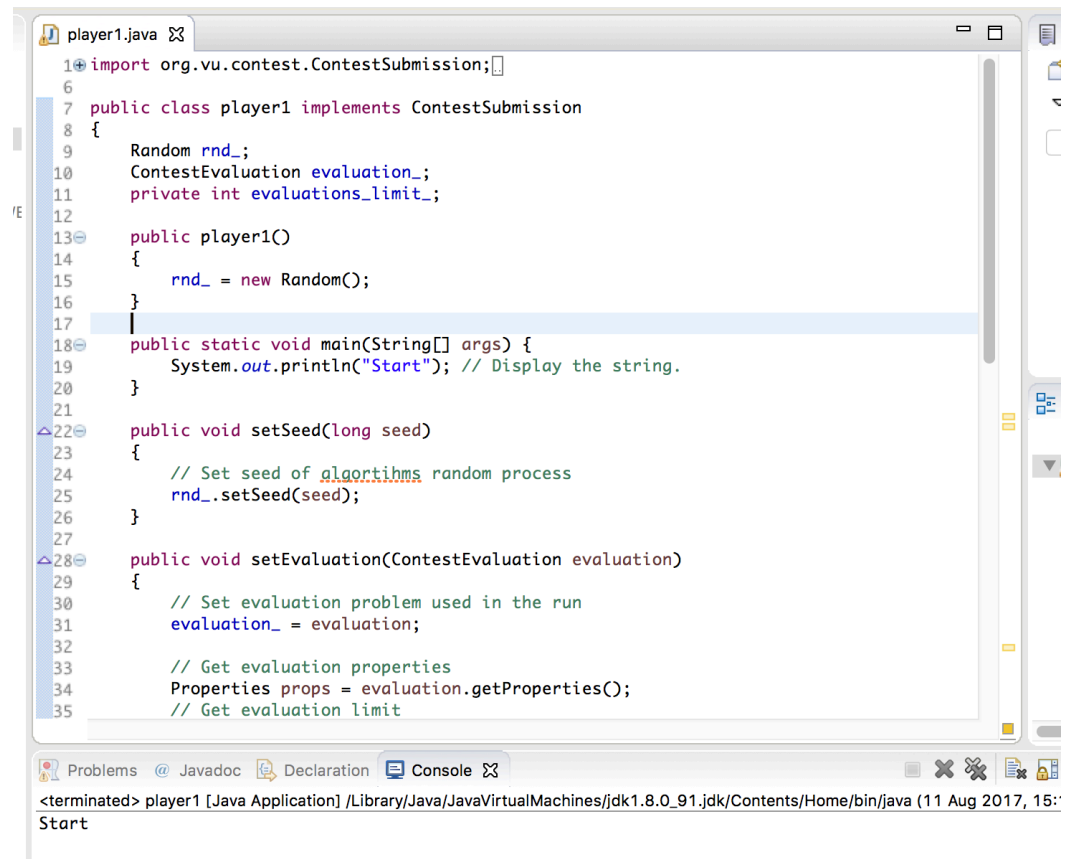
- Create a new project in Eclipse



- Add player1.java to the code
- Add contest.jar to classpath



- Add a main function in the code
- Run it once

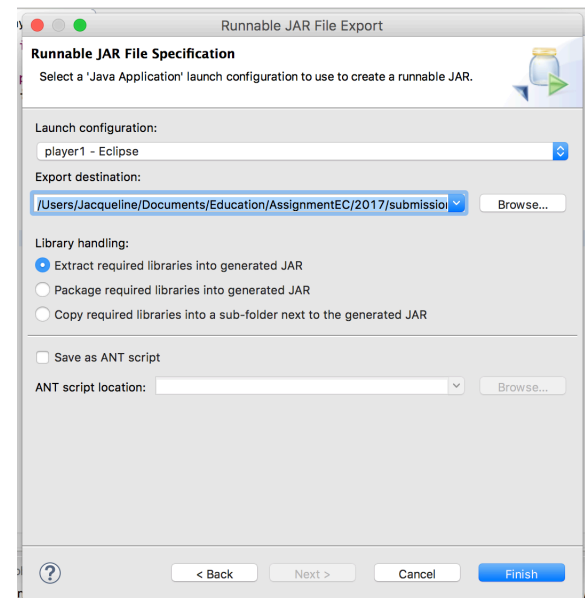
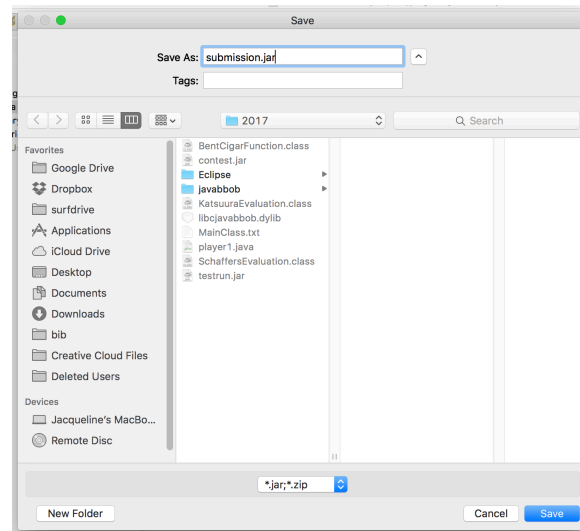
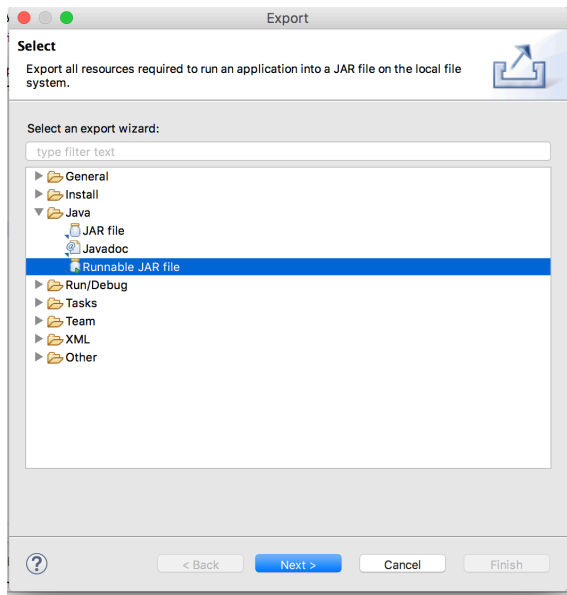


```
1 import org.vu.contest.ContestSubmission;
6
7 public class player1 implements ContestSubmission
8 {
9     Random rnd_;
10    ContestEvaluation evaluation_;
11    private int evaluations_limit_;
12
13    public player1()
14    {
15        rnd_ = new Random();
16    }
17
18    public static void main(String[] args) {
19        System.out.println("Start"); // Display the string.
20    }
21
22    public void setSeed(long seed)
23    {
24        // Set seed of algorithms random process
25        rnd_.setSeed(seed);
26    }
27
28    public void setEvaluation(ContestEvaluation evaluation)
29    {
30        // Set evaluation problem used in the run
31        evaluation_ = evaluation;
32
33        // Get evaluation properties
34        Properties props = evaluation.getProperties();
35        // Get evaluation limit
```

Problems Javadoc Declaration Console

<terminated> player1 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_91.jdk/Contents/Home/bin/java (11 Aug 2017, 15: Start

- Export an runnable jar called “submission.jar”, and store it with the other files.



- Go to the terminal and to the folder with all files
- Test your code on the dummy function by typing:
 - `java -jar testrun.jar -submission=player1 -evaluation=SphereEvaluation -seed=1`
- Test your code on one of the contest functions by typing:
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```

- For online contest: upload your submission.jar with provided code

Other remarks for all platforms

- There are some security restrictions due to the online contest. This makes it more difficult to store results. If you experience these problems you can place a “> storeresults.txt” behind the testrun and this will put all terminal output in a file.
- To investigate the effect of parameters, you can run:
`java -Dvar1=0.5 -jar testrun.jar -submission=player1 - evaluation=BentCigarFunction - seed=1`

Then, anywhere in the code your can retrieve the value of var1 with:

```
Double.parseDouble(System.getProperty("var1"));
```