

آزمایشگاه مهندسی نرم افزار
آزمایش سوم - BDD
کیمیا نوربخش و مبینا پورنعمت
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کد پروژه:

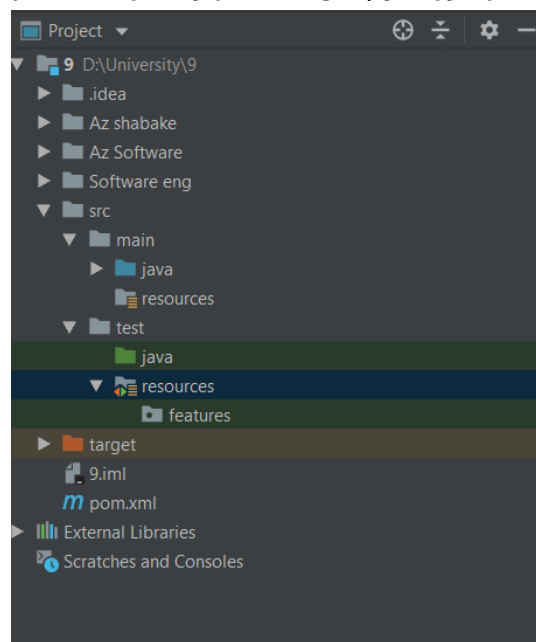
https://github.com/Mobinapournemat/Software_Eng_Lab/tree/master/Session%203

بخش اول - اجرای example.pdf:

- ابتدا Test -> Maven را اجرا می کنیم و BUILD SUCCESS را می بینیم.

```
BDD [test] x
"C:\Program Files\Java\jdk-11.0.8\bin\java.exe" -Dmaven.multiModuleProjectDirectory=D:\University\9 -Dmaven.home=C:
[INFO] Scanning for projects...
[INFO]
[INFO] -----
[INFO] Building BDD 1.0-SNAPSHOT
[INFO] -----
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ BDD ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ BDD ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ BDD ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] skip non existing resourceDirectory D:\University\9\src\test\resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ BDD ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ BDD ---
[INFO] No tests to run.
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] -----
[INFO] Total time: 1.380 s
[INFO] Finished at: 2022-11-21T19:57:03:30
[INFO] Final Memory: 9M/37M
[INFO]
[INFO] -----
Process finished with exit code 0
```

- طبق دستورات فایل، دایرکتوری و پکیج های مربوطه را می سازیم:



- بعد از اضافه کردن فایل‌های مربوط به Calculator و اجرای Test -> Maven به ارور زیر میخوریم که در pdf نیز آمده است:

```
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ BDD ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to D:\University\9\target\classes
[INFO]
[ERROR] COMPILATION ERROR :
[INFO]
[ERROR] Source option 5 is no longer supported. Use 6 or later.
[ERROR] Target option 1.5 is no longer supported. Use 1.6 or later.
[INFO] 2 errors
[INFO]
[INFO] BUILD FAILURE
[INFO]
[INFO] Total time: 1.747 s
[INFO] Finished at: 2022-11-21T20:25:20+03:30
[INFO] Final Memory: 9M/37M
[INFO]
[ERROR] Failed to execute goal org.apache.maven.plugins:maven-compiler-plugin:3.1:compile (default-compile) on project BDD: Compilation failure: Compilation failure:
[ERROR] Source option 5 is no longer supported. Use 6 or later.
[ERROR] Target option 1.5 is no longer supported. Use 1.6 or later.
[ERROR] -> [Help 1]
[ERROR]
[ERROR] To see the full stack trace of the errors, re-run Maven with the -e switch.
[ERROR] Re-run Maven using the -X switch to enable full debug logging.
[ERROR]
[ERROR] For more information about the errors and possible solutions, please read the following articles:
[ERROR] [Help 1] http://cwiki.apache.org/confluence/display/MAVEN/MojoFailureException
Process finished with exit code 1
```

- بعد از درست کردن dependency ها اجرا موفقیت آمیز می‌شود:

```
[INFO]
[INFO] Building BDD 1.0-SNAPSHOT
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ BDD ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 0 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ BDD ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to D:\University\9\target\classes
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ BDD ---
[WARNING] Using platform encoding (UTF-8 actually) to copy filtered resources, i.e. build is platform dependent!
[INFO] Copying 1 resource
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ BDD ---
[INFO] Changes detected - recompiling the module!
[WARNING] File encoding has not been set, using platform encoding UTF-8, i.e. build is platform dependent!
[INFO] Compiling 1 source file to D:\University\9\target\test-classes
[INFO]
[INFO] --- maven-surefire-plugin:2.12.4:test (default-test) @ BDD ---
[INFO]
[INFO] BUILD SUCCESS
[INFO]
[INFO] Total time: 2.029 s
[INFO] Finished at: 2022-11-21T20:27:34+03:30
[INFO] Final Memory: 11M/47M
[INFO]
Process finished with exit code 0
```

- و سپس Run: Feature: calculator را می‌زنیم و مراحل بعدی را اجرا می‌کنیم.

```
Testing started at 8:29 PM ...
"C:\Program Files\Java\jdk-11.0.8\bin\java.exe" -Dorg.jetbrains.run.directory=D:\University\9\src\test\resources\features "-java
WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by cucumber.deps.com.thoughtworks.xstream.core.util.Fields (file:/C:/Users/Asus/.m2/repository/cucumber/cucumber-deps-com-thoughtworks-xstream-core/1.4.2/cucumber-deps-com-thoughtworks-xstream-core-1.4.2.jar) to method java.lang.ProcessImpl.start()
WARNING: Please consider reporting this to the maintainers of cucumber.deps.com.thoughtworks.xstream.core.util.Fields
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release
3
1 Scenarios (1 passed)|
3 Steps (3 passed)|0m0.251s

Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-11.0.8\bin\java.exe" ...
No features found at [classpath:calculator]
0 Scenarios
0 Steps
0m0.000s

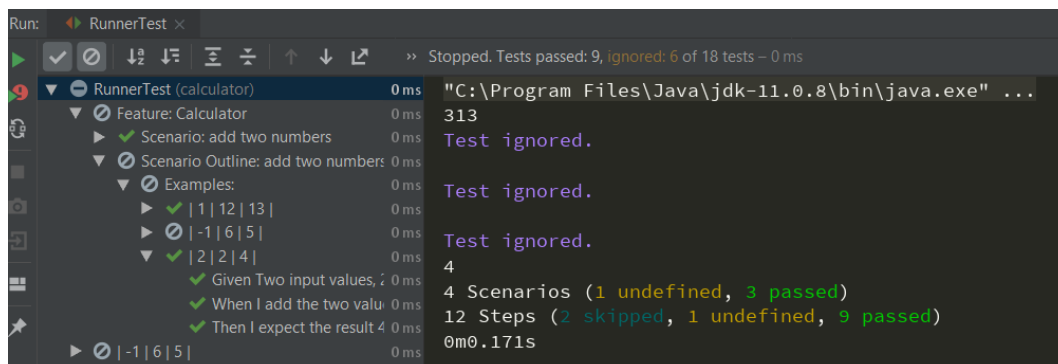
Process finished with exit code 0
```

```
"C:\Program Files\Java\jdk-11.0.8\bin\java.exe" ...
3
1 Scenarios (1 passed)
3 Steps (3 passed)
0m0.196s

WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by cucumber.deps.com.thoughtworks.xstream.core.util.Fields (file:/C:/Users/Asus/.m2/
WARNING: Please consider reporting this to the maintainers of cucumber.deps.com.thoughtworks.xstream.core.util.Fields
WARNING: Use --illegal-access=warn to enable warnings of further illegal reflective access operations
WARNING: All illegal access operations will be denied in a future release

Process finished with exit code 0
```

- **علت بروز مشکل:** حال سناریوی outline را اجرا کرده و به ارور زیر میخوریم که ناشی از منفی بودن 1 است (-1) (در تست دوم) زیرا در فایل MyStepdefs.java ایجاد شده، اعداد منفی ساپورت نمیشدند.



```
Run: RunnerTest x
>> Stopped. Tests passed: 9, ignored: 6 of 18 tests - 0 ms

RunnerTest (calculator) 0 ms
  Feature: Calculator 0 ms
    Scenario: add two numbers 0 ms
    Scenario Outline: add two numbers 0 ms
      Examples: 0 ms
        |1|12|13| 0 ms
        |-1|6|5| 0 ms
        |2|2|4| 0 ms
      Given Two input values, 4 0 ms
      When I add the two values 0 ms
      Then I expect the result 4 0 ms
    |-1|6|5| 0 ms

"C:\Program Files\Java\jdk-11.0.8\bin\java.exe" ...
313
Test ignored.
Test ignored.
Test ignored.
4
4 Scenarios (1 undefined, 3 passed)
12 Steps (2 skipped, 1 undefined, 9 passed)
0m0.171s
```

- **راه حل:** در فایل MyStepdefs.java تغییر زیر را اعمال میکنیم تا اعداد منفی را نیز پوشش دهد و سپس تست با موفقیت اجرا می‌شود:

```
@Given("^Two input values, (-?\d+) and (-?\d+)$")
public void twoInputValuesAnd(int arg0, int arg1) {
    value1 = arg0;
    value2 = arg1;
}
```

```
✓ Tests passed: 12 of 12 tests - 0 ms

▼ ✓ RunnerTest (calculator) 0 ms
  ▼ ✓ Feature: Calculator 0 ms
    ▶ ✓ Scenario: add two numbers 0 ms
      ▼ ✓ Scenario Outline: add two numbers 0 ms
        ▼ ✓ Examples: 0 ms
          ▶ ✓ | 1 | 12 | 13 | 0 ms
          ▶ ✓ | -1 | 6 | 5 | 0 ms
          ▼ ✓ | 2 | 2 | 4 | 0 ms
            ✓ Given Two input values, i 0 ms
            ✓ When I add the two valu 0 ms
            ✓ Then I expect the result 4 0 ms

"C:\Program Files\Java\jdk-11.0.8\bin\java.exe" ...
31354
4 Scenarios (4 passed)
12 Steps (12 passed)
0m0.171s

WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by cucumber.deps.co
WARNING: Please consider reporting this to the maintai
WARNING: Use --illegal-access=warn to enable warnings
WARNING: All illegal access operations will be denied

Process finished with exit code 0
```

مسئله:

فایل‌های Calculator.java (با اضافه کردن تابع compute) و به فایل calculator.feature سناریو های جدید را اضافه می کنیم و به تبع آن فایل MyStepdefs.java مطابق خواسته مسئله تغییر می کند و پیاده سازی بدنه توابع ایجاد شده را انجام می دهیم. سپس با اجرای مجدد فایل RunnerTest.java آن مطابق تصویر زیر داریم:

```
✓ Tests passed: 21 of 21 tests - 1 ms

▼ ✓ RunnerTest (calculator) 1 ms
  ▼ ✓ Feature: Calculator 1 ms
    ▶ ✓ Scenario: add two numbers 0 ms
    ▶ ✓ Scenario Outline: add two numbers 0 ms
    ▶ ✓ Scenario: compute useless calculat 0 ms
      ▼ ✓ Scenario Outline: compute useless 1 ms
        ▼ ✓ Examples: 1 ms
          ▶ ✓ | 4 | 1 | 2 | 0 ms
          ▼ ✓ | 36 | 4 | 3 | 1 ms
            ✓ Given Two input values, i 0 ms
            ✓ When I compute the squ 1 ms
            ✓ Then I expect the result 3 0 ms

"C:\Program Files\Java\jdk-11.0.8\bin\java.exe" ...
31354
7 Scenarios (7 passed)
21 Steps (21 passed)
0m0.187s

WARNING: An illegal reflective access operation has occurred
WARNING: Illegal reflective access by cucumber.deps.co
WARNING: Please consider reporting this to the maintai
WARNING: Use --illegal-access=warn to enable warnings
WARNING: All illegal access operations will be denied

Process finished with exit code 0
```

که اجرای همگی تست ها موفقیت آمیز بود.