软件测试上机报告

第四次作业

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年　　级　2017 级
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一、实验要求

Tasks:

1. Install MuJava. The instruction of how to install and use Mujava can be seen in https://cs.gmu.edu/~offutt/mujava/ .
2. Two small programs are given for your task. BubbleSort.java is an implementation of bubble sort algorithm and BackPack.java is a solution of 01 backpack problem. Try to generate Mutants of 2 given programs with MuJava.
3. Write testing sets for 2 programs with Junit, and run mutants on the test sets with MuJava.

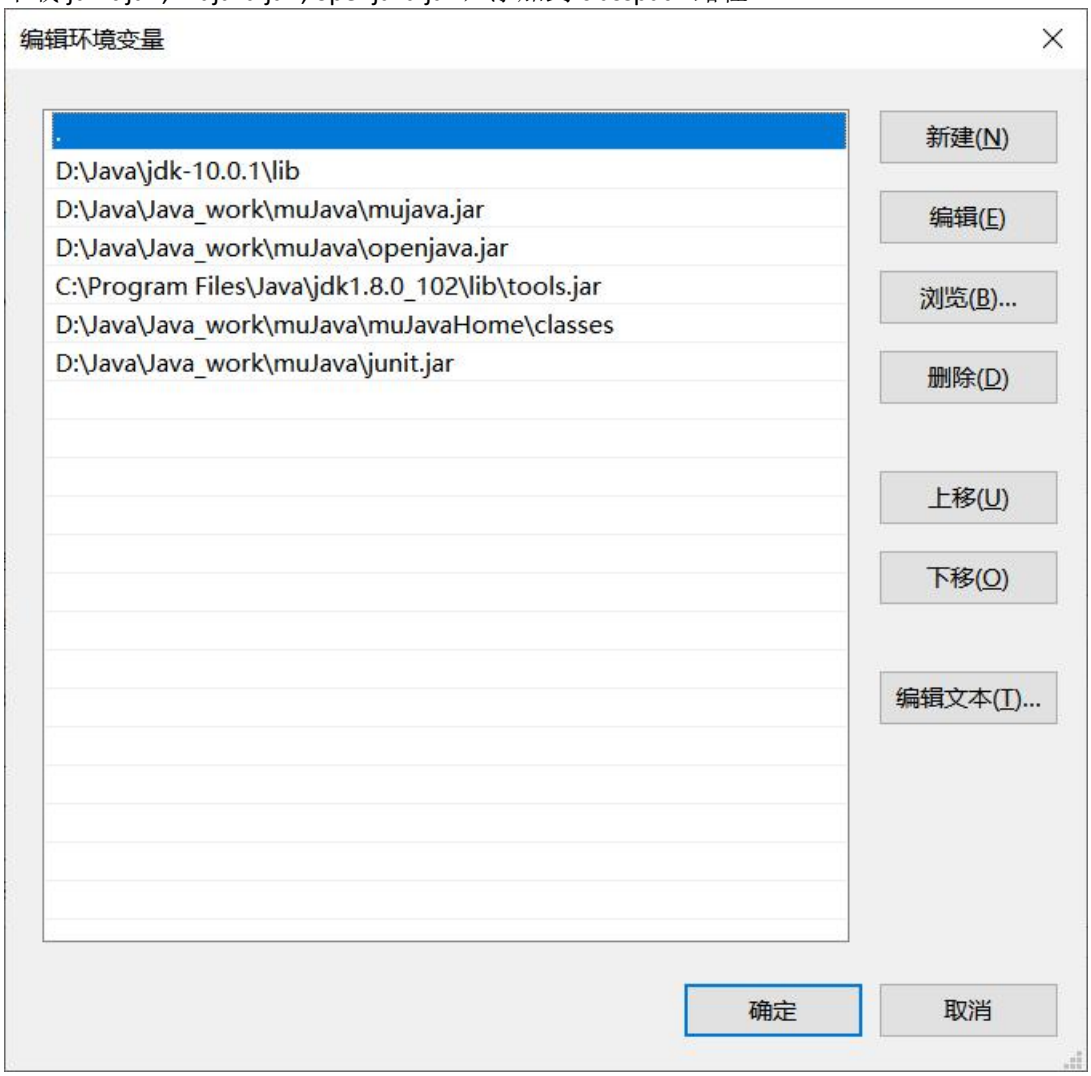
Requirements for the experiment:

1. Finish the tasks above individually.
2. Check in your java code to github and send the URL to tjuscsst@qq.com
3. Post your experiment report to your blog and send the URL to tjuscsst@qq.com , the following information should be included in your report:
   a) The brief description that you install MuJava
   b) Steps for generating Mutants
   c) Steps for making test sets and running mutants.
   d) Your mutants result (The number of live mutants, killed mutants, etc.)

二、实验过程

1.安装 mujava

下载 junit.jar , mujava.jar , openjava.jar ， 添加到 classpath 路径

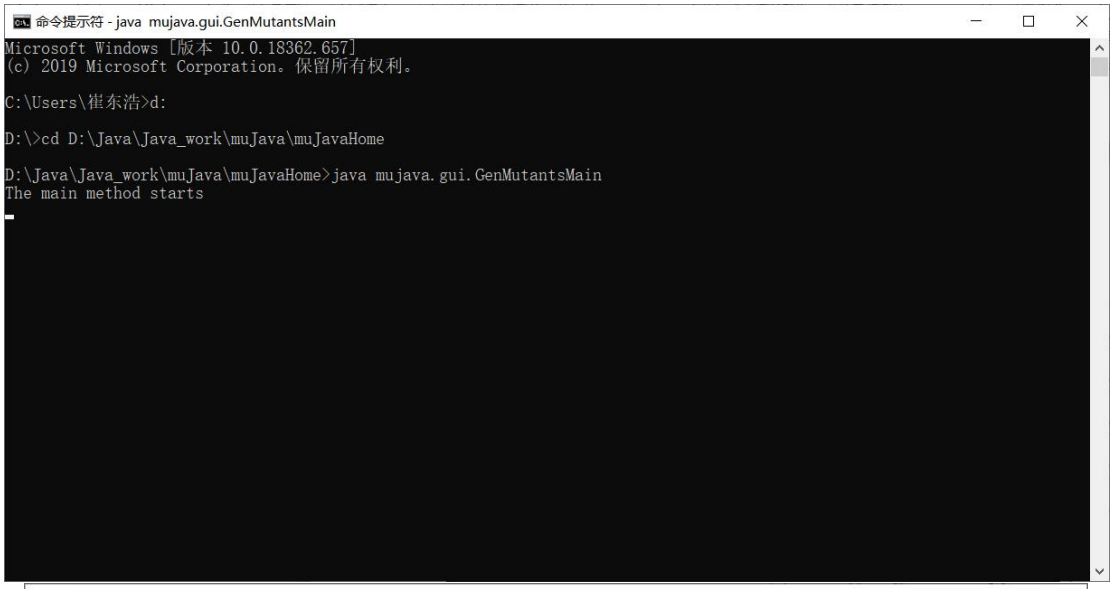


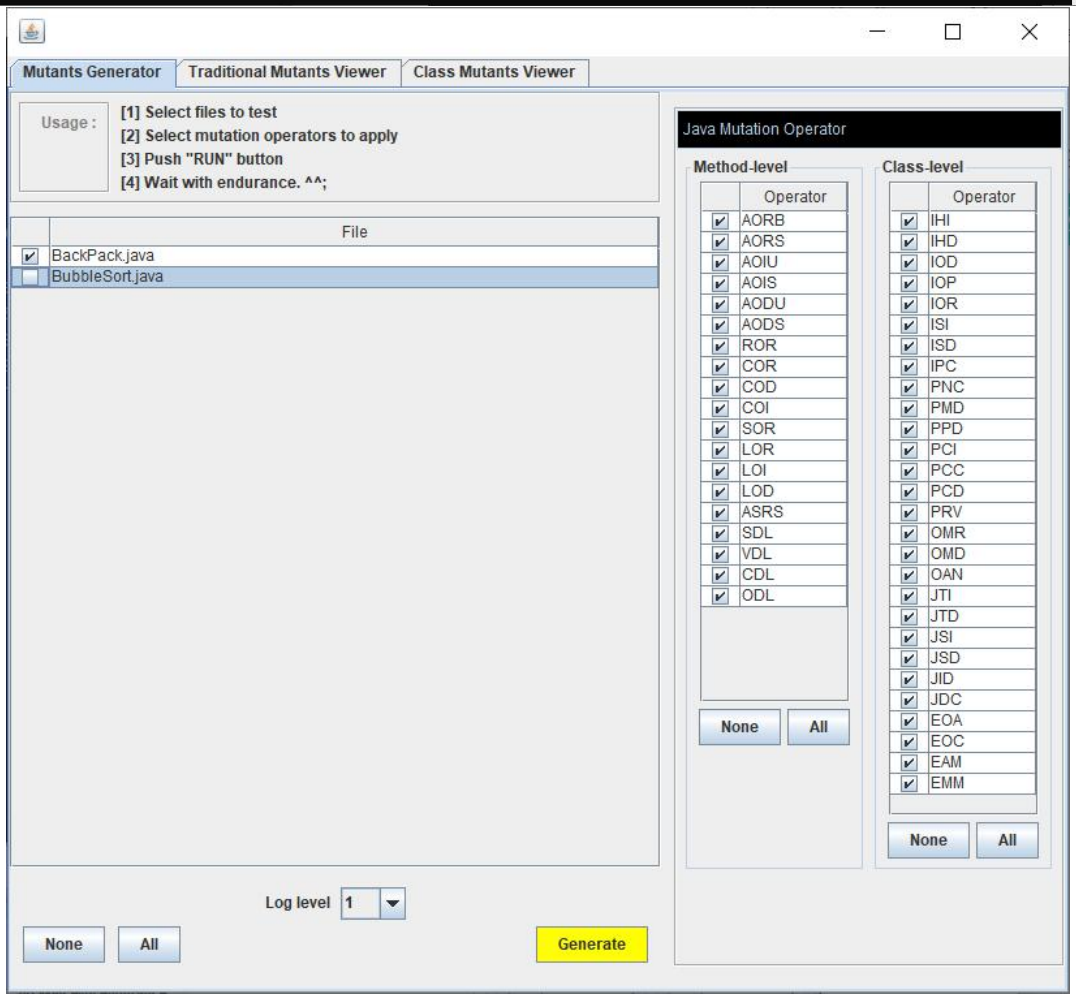
修改 mujava.config

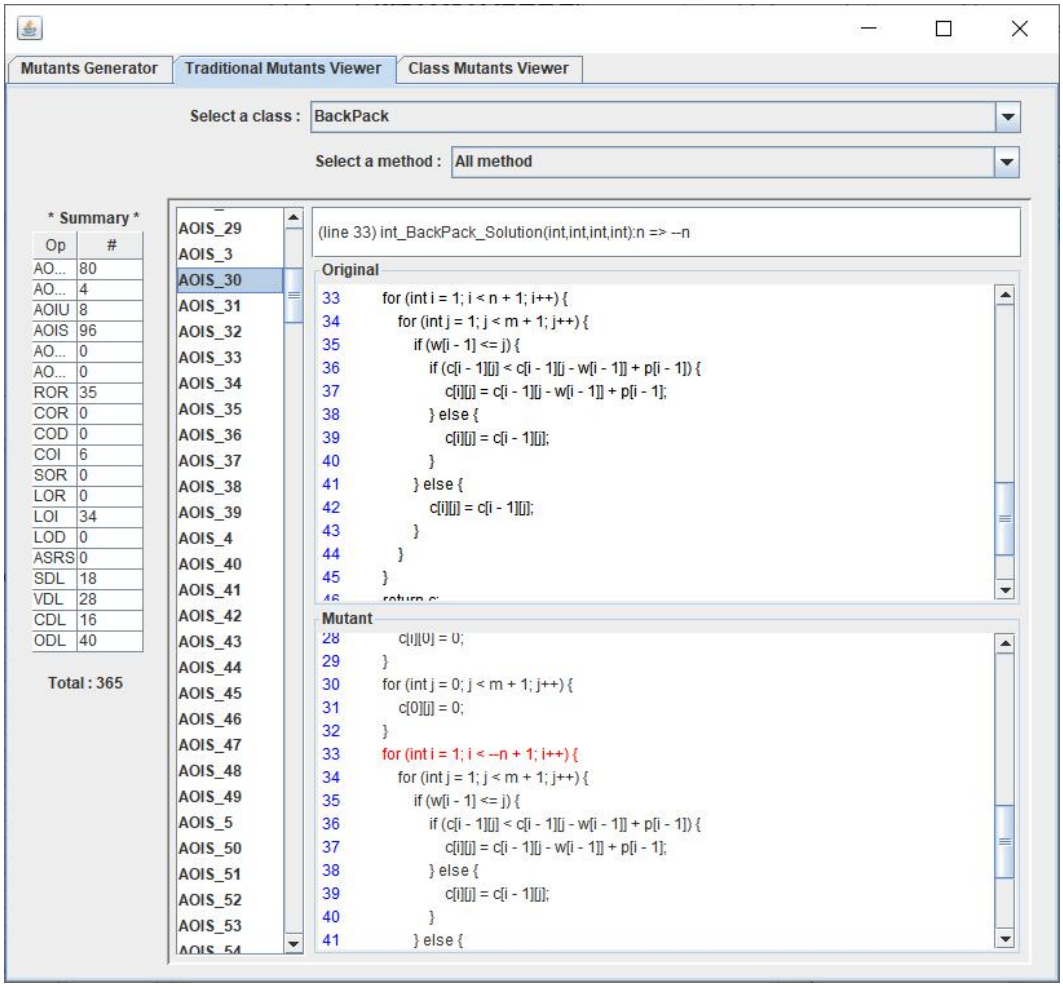
建立四个文件夹，src 下放原始代码

classes 下面放编译过的 class 文件

启动

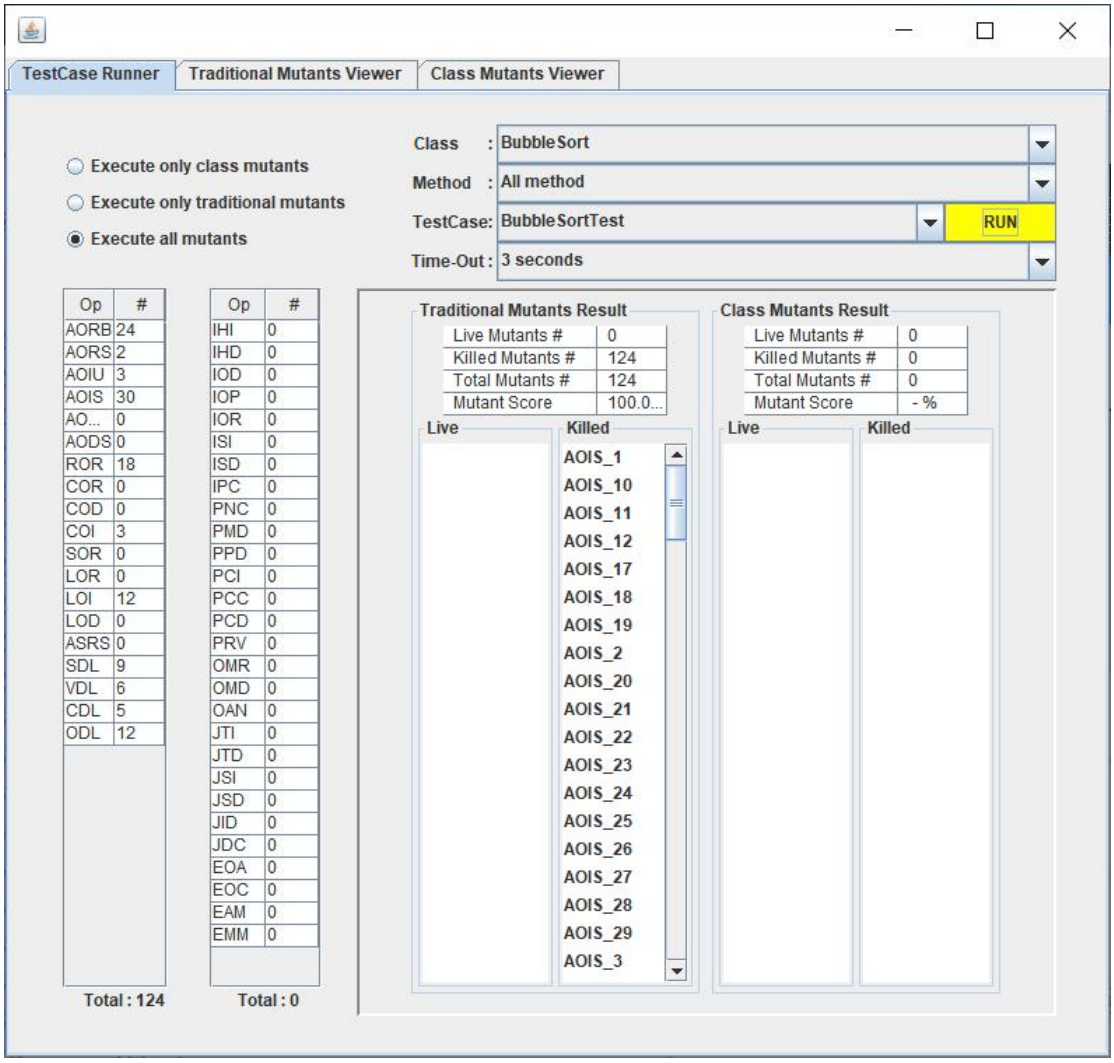

命令提示符 - java mujava.gui.GenMutantsMain
Microsoft Windows [版本 10.0.18362.657]
(c) 2019 Microsoft Corporation。保留所有权利。
C:\Users\崔东浩>d:
D:\>cd D:\Java\Java_work\muJava\muJavaHome
D:\Java\Java_work\muJava\muJavaHome>java mujava.gui.GenMutantsMain
The main method starts


Mutants Generator
Traditional Mutants Viewer
Class Mutants Viewer
Usage :
[1] Select files to test
[2] Select mutation operators to apply
[3] Push "RUN" button
[4] Wait with endurance. ^^;
File
BackPack.java
BubbleSort.java
Log level 1
None
All
Generate
Java Mutation Operator
Method-level
Operator
AORB
AORS
AOIU
AOIS
AODU
AODS
ROR
COR
COD
COI
SOR
LOR
LOI
LOD
ASRS
SDL
VDL
CDL
ODL
None
All
Class-level
Operator
IHI
IHD
IOD
IOP
IOR
ISI
ISD
IPC
PNC
PMD
PPD
PCI
PCC
PCD
PRV
OMR
OMD
OAN
JTI
JTD
JSI
JSD
JID
JDC
EOA
EOC
EAM
EMM
None
All



编写 testset

运行结果



全部killed，

```
=========================================== Executing Mutants ===========================================
AOIS_1{testConstructor=testConstructor: 12; expected:<[I@7e98379b> but was:<[I@7aa7bc90>}
AOIS_10{testConstructor=testConstructor: 12; expected:<[I@5f1d8dc2> but was:<[I@5b2212f9>}
AOIS_11{testConstructor=testConstructor: 12; expected:<[I@2192cba2> but was:<[I@25ad4b48>}
AOIS_12{testConstructor=testConstructor: 12; expected:<[I@3c57c3dc> but was:<[I@3868408e>}
AOIS_17{testConstructor=testConstructor: 12; expected:<[I@7cdde54f> but was:<[I@78e26e0c>}
AOIS_18{testConstructor=testConstructor: 12; expected:<[I@239ce62a> but was:<[I@27a36681>}
AOIS_19{testConstructor=testConstructor: 12; expected:<[I@73978be6> but was:<[I@77a8114c>}
AOIS_2{testConstructor=testConstructor: 12; expected:<[I@1b8f0748> but was:<[I@1fb080e1>}
AOIS_20{testConstructor=testConstructor: 12; expected:<[I@3d271475> but was:<[I@39189709>}
AOIS_21{testConstructor=testConstructor: 12; expected:<[I@2ac4d8a> but was:<[I@693c907>}
AOIS_22{testConstructor=testConstructor: 12; expected:<[I@633fd4cf> but was:<[I@67005c70>}
AOIS_23{testConstructor=testConstructor: 12; expected:<[I@5f28e472> but was:<[I@5b176b4f>}
AOIS_24{testConstructor=testConstructor: 12; expected:<[I@7c3d4e9e> but was:<[I@7802d5c1>}
AOIS_25{testConstructor=testConstructor: 12; expected:<[I@4560a6da> but was:<[I@415f2aae>}
AOIS_26{testConstructor=testConstructor: 12; expected:<[I@59d32ceb> but was:<[I@5decb309>}
AOIS_27{testConstructor=testConstructor: 12; expected:<[I@2ac96d1a> but was:<[I@2ef6ec9b>}
AOIS_28{testConstructor=testConstructor: 12; expected:<[I@6c412df4> but was:<[I@687eb4a4>}
AOIS_29{testConstructor=testConstructor: 12; expected:<[I@62c27de7> but was:<[I@66fde567>}
AOIS_3{testConstructor=testConstructor: 12; expected:<[I@377769f3> but was:<[I@3348ebc5>}
AOIS_30{testConstructor=testConstructor: 12; expected:<[I@29e8bcee> but was:<[I@2dd72d0b>}
AOIS_31{testConstructor=testConstructor: 12; expected:<[I@32ddca94> but was:<[I@36e24817>}
AOIS_32{testConstructor=testConstructor: 12; expected:<[I@34637a86> but was:<[I@305ce8d2>}
AOIS_33{testConstructor=testConstructor: 12; expected:<[I@3d816bb2> but was:<[I@39bee8da>}
```