```
1 /Library/Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents
  /Home/bin/java "-javaagent:/Applications/IntelliJ IDEA.app/
  Contents/lib/idea_rt.jar=52062:/Applications/IntelliJ IDEA.
  app/Contents/bin" -Dfile.encoding=UTF-8 -classpath /Library
  /Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/
  jre/lib/charsets.jar:/Library/Java/JavaVirtualMachines/jdk1
  .8.0_144.jdk/Contents/Home/jre/lib/deploy.jar:/Library/Java
  /JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib
  /ext/cldrdata.jar:/Library/Java/JavaVirtualMachines/jdk1.8.
  0_144.jdk/Contents/Home/jre/lib/ext/dnsns.jar:/Library/Java
  /JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib
  /ext/jaccess.jar:/Library/Java/JavaVirtualMachines/jdk1.8.
  0_144.jdk/Contents/Home/jre/lib/ext/jfxrt.jar:/Library/Java
  /JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib
  /ext/localedata.jar:/Library/Java/JavaVirtualMachines/jdk1.
  8.0_144.jdk/Contents/Home/jre/lib/ext/nashorn.jar:/Library/
  Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre
  /lib/ext/sunec.jar:/Library/Java/JavaVirtualMachines/jdk1.8
  .0_144.jdk/Contents/Home/jre/lib/ext/sunjce_provider.jar:/
  Library/Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/
  Home/jre/lib/ext/sunpkcs11.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib/
  ext/zipfs.jar:/Library/Java/JavaVirtualMachines/jdk1.8.
  0_144.jdk/Contents/Home/jre/lib/javaws.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib/
  jce.jar:/Library/Java/JavaVirtualMachines/jdk1.8.0_144.jdk/
  Contents/Home/jre/lib/jfr.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib/
  jfxswt.jar:/Library/Java/JavaVirtualMachines/jdk1.8.0_144.
  jdk/Contents/Home/jre/lib/jsse.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib/
  management-agent.jar:/Library/Java/JavaVirtualMachines/jdk1
  .8.0_144.jdk/Contents/Home/jre/lib/plugin.jar:/Library/Java
  /JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib
  /resources.jar:/Library/Java/JavaVirtualMachines/jdk1.8.
  0_144.jdk/Contents/Home/jre/lib/rt.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/lib/ant-
  javafx.jar:/Library/Java/JavaVirtualMachines/jdk1.8.0_144.
  jdk/Contents/Home/lib/dt.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/lib/
  javafx-mx.jar:/Library/Java/JavaVirtualMachines/jdk1.8.
  0_144.jdk/Contents/Home/lib/jconsole.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/lib/
  packager.jar:/Library/Java/JavaVirtualMachines/jdk1.8.0_144
  .jdk/Contents/Home/lib/sa-jdi.jar:/Library/Java/
  JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/lib/
  tools.jar:/Users/sidmishraw/Google_Drive_Folder/
  scala_projects/BoolLang1/target/scala-2.12/classes:/Users/
  sidmishraw/.sbt/boot/scala-2.12.3/lib/scala-library.jar
  whilelang.WhilelangDriver
```

```
 2 objc[1906]: Class JavaLaunchHelper is implemented in both /
   Library/Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/
   Home/bin/java (0x10eac84c0) and /Library/Java/
   JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/jre/lib/
   libinstrument.dylib (0x10eb904e0). One of the two will be
   used. Which one is undefined.
 3 ----------------------------------------
 4 SHOW :: myVar := 5; kk := 1; while(myVar > 0) kk := kk + 1
   ; myVar := myVar - 1; kk
 5 ----------------------------------------
 6 Intermediate step :: myVar := 5; kk := 1; while(myVar > 0)
   kk := kk + 1; myVar := myVar - 1; kk
 7 Intermediate step :: 5; kk := 1; while(myVar > 0) kk := kk
    + 1; myVar := myVar - 1; kk
 8 Intermediate step :: kk := 1; while(myVar > 0) kk := kk + 1
   ; myVar := myVar - 1; kk
 9 Intermediate step :: 1; while(myVar > 0) kk := kk + 1;
   myVar := myVar - 1; kk
10 Intermediate step :: while(myVar > 0) kk := kk + 1; myVar
    := myVar - 1; kk
11 Intermediate step :: if myVar > 0 then kk := kk + 1; myVar
    := myVar - 1; while(myVar > 0) kk := kk + 1; myVar :=
   myVar - 1 else False; kk
12 Intermediate step :: if 5 > 0 then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
13 Intermediate step :: if True then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
14 Intermediate step :: kk := kk + 1; myVar := myVar - 1;
   while(myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
15 Intermediate step :: kk := 1 + 1; myVar := myVar - 1; while
   (myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
16 Intermediate step :: kk := 2; myVar := myVar - 1; while(
   myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
17 Intermediate step :: 2; myVar := myVar - 1; while(myVar > 0
   ) kk := kk + 1; myVar := myVar - 1; kk
18 Intermediate step :: myVar := myVar - 1; while(myVar > 0)
   kk := kk + 1; myVar := myVar - 1; kk
19 Intermediate step :: myVar := 5 - 1; while(myVar > 0) kk
    := kk + 1; myVar := myVar - 1; kk
20 Intermediate step :: myVar := 4; while(myVar > 0) kk := kk
    + 1; myVar := myVar - 1; kk
21 Intermediate step :: 4; while(myVar > 0) kk := kk + 1;
   myVar := myVar - 1; kk
22 Intermediate step :: while(myVar > 0) kk := kk + 1; myVar
    := myVar - 1; kk
23 Intermediate step :: if myVar > 0 then kk := kk + 1; myVar
    := myVar - 1; while(myVar > 0) kk := kk + 1; myVar :=
   myVar - 1 else False; kk
```

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24 Intermediate step :: if 4 > 0 then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
25 Intermediate step :: if True then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
26 Intermediate step :: kk := kk + 1; myVar := myVar - 1;
   while(myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
27 Intermediate step :: kk := 2 + 1; myVar := myVar - 1; while
   (myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
28 Intermediate step :: kk := 3; myVar := myVar - 1; while(
   myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
29 Intermediate step :: 3; myVar := myVar - 1; while(myVar > 0
   ) kk := kk + 1; myVar := myVar - 1; kk
30 Intermediate step :: myVar := myVar - 1; while(myVar > 0)
   kk := kk + 1; myVar := myVar - 1; kk
31 Intermediate step :: myVar := 4 - 1; while(myVar > 0) kk
    := kk + 1; myVar := myVar - 1; kk
32 Intermediate step :: myVar := 3; while(myVar > 0) kk := kk
    + 1; myVar := myVar - 1; kk
33 Intermediate step :: 3; while(myVar > 0) kk := kk + 1;
   myVar := myVar - 1; kk
34 Intermediate step :: while(myVar > 0) kk := kk + 1; myVar
    := myVar - 1; kk
35 Intermediate step :: if myVar > 0 then kk := kk + 1; myVar
    := myVar - 1; while(myVar > 0) kk := kk + 1; myVar :=
   myVar - 1 else False; kk
36 Intermediate step :: if 3 > 0 then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
37 Intermediate step :: if True then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
38 Intermediate step :: kk := kk + 1; myVar := myVar - 1;
   while(myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
39 Intermediate step :: kk := 3 + 1; myVar := myVar - 1; while
   (myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
40 Intermediate step :: kk := 4; myVar := myVar - 1; while(
   myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
41 Intermediate step :: 4; myVar := myVar - 1; while(myVar > 0
   ) kk := kk + 1; myVar := myVar - 1; kk
42 Intermediate step :: myVar := myVar - 1; while(myVar > 0)
   kk := kk + 1; myVar := myVar - 1; kk
43 Intermediate step :: myVar := 3 - 1; while(myVar > 0) kk
    := kk + 1; myVar := myVar - 1; kk
44 Intermediate step :: myVar := 2; while(myVar > 0) kk := kk
    + 1; myVar := myVar - 1; kk
45 Intermediate step :: 2; while(myVar > 0) kk := kk + 1;
   myVar := myVar - 1; kk
46 Intermediate step :: while(myVar > 0) kk := kk + 1; myVar
```

```
46  := myVar - 1; kk
47 Intermediate step :: if myVar > 0 then kk := kk + 1; myVar
    := myVar - 1; while(myVar > 0) kk := kk + 1; myVar :=
   myVar - 1 else False; kk
48 Intermediate step :: if 2 > 0 then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
49 Intermediate step :: if True then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
50 Intermediate step :: kk := kk + 1; myVar := myVar - 1;
   while(myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
51 Intermediate step :: kk := 4 + 1; myVar := myVar - 1; while
   (myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
52 Intermediate step :: kk := 5; myVar := myVar - 1; while(
   myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
53 Intermediate step :: 5; myVar := myVar - 1; while(myVar > 0
   ) kk := kk + 1; myVar := myVar - 1; kk
54 Intermediate step :: myVar := myVar - 1; while(myVar > 0)
   kk := kk + 1; myVar := myVar - 1; kk
55 Intermediate step :: myVar := 2 - 1; while(myVar > 0) kk
    := kk + 1; myVar := myVar - 1; kk
56 Intermediate step :: myVar := 1; while(myVar > 0) kk := kk
    + 1; myVar := myVar - 1; kk
57 Intermediate step :: 1; while(myVar > 0) kk := kk + 1;
   myVar := myVar - 1; kk
58 Intermediate step :: while(myVar > 0) kk := kk + 1; myVar
    := myVar - 1; kk
59 Intermediate step :: if myVar > 0 then kk := kk + 1; myVar
    := myVar - 1; while(myVar > 0) kk := kk + 1; myVar :=
   myVar - 1 else False; kk
60 Intermediate step :: if 1 > 0 then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
61 Intermediate step :: if True then kk := kk + 1; myVar :=
   myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar -
   1 else False; kk
62 Intermediate step :: kk := kk + 1; myVar := myVar - 1;
   while(myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
63 Intermediate step :: kk := 5 + 1; myVar := myVar - 1; while
   (myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
64 Intermediate step :: kk := 6; myVar := myVar - 1; while(
   myVar > 0) kk := kk + 1; myVar := myVar - 1; kk
65 Intermediate step :: 6; myVar := myVar - 1; while(myVar > 0
   ) kk := kk + 1; myVar := myVar - 1; kk
66 Intermediate step :: myVar := myVar - 1; while(myVar > 0)
   kk := kk + 1; myVar := myVar - 1; kk
67 Intermediate step :: myVar := 1 - 1; while(myVar > 0) kk
    := kk + 1; myVar := myVar - 1; kk
68 Intermediate step :: myVar := 0; while(myVar > 0) kk := kk
```

```
 68  + 1; myVar := myVar - 1; kk
 69 Intermediate step :: 0; while(myVar > 0) kk := kk + 1;
    myVar := myVar - 1; kk
 70 Intermediate step :: while(myVar > 0) kk := kk + 1; myVar
     := myVar - 1; kk
 71 Intermediate step :: if myVar > 0 then kk := kk + 1; myVar
     := myVar - 1; while(myVar > 0) kk := kk + 1; myVar :=
    myVar - 1 else False; kk
 72 Intermediate step :: if 0 > 0 then kk := kk + 1; myVar :=
    myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar
     - 1 else False; kk
 73 Intermediate step :: if False then kk := kk + 1; myVar :=
    myVar - 1; while(myVar > 0) kk := kk + 1; myVar := myVar
     - 1 else False; kk
 74 Intermediate step :: False; kk
 75 Intermediate step :: kk
 76 Result prog1 :: 6
 77 ----------------------------------------
 78 ----------------------------------------
 79 SHOW :: a := 5; a + 10
 80 ----------------------------------------
 81 Intermediate step :: a := 5; a + 10
 82 Intermediate step :: 5; a + 10
 83 Intermediate step :: a + 10
 84 Intermediate step :: 5 + 10
 85 Result prog2 :: 15
 86 ----------------------------------------
 87
 88 Process finished with exit code 0
 89
```