期望类需要满足的条件

- 不能被反序列化
- 存在setter方法
- setter方法操作的是全局变量

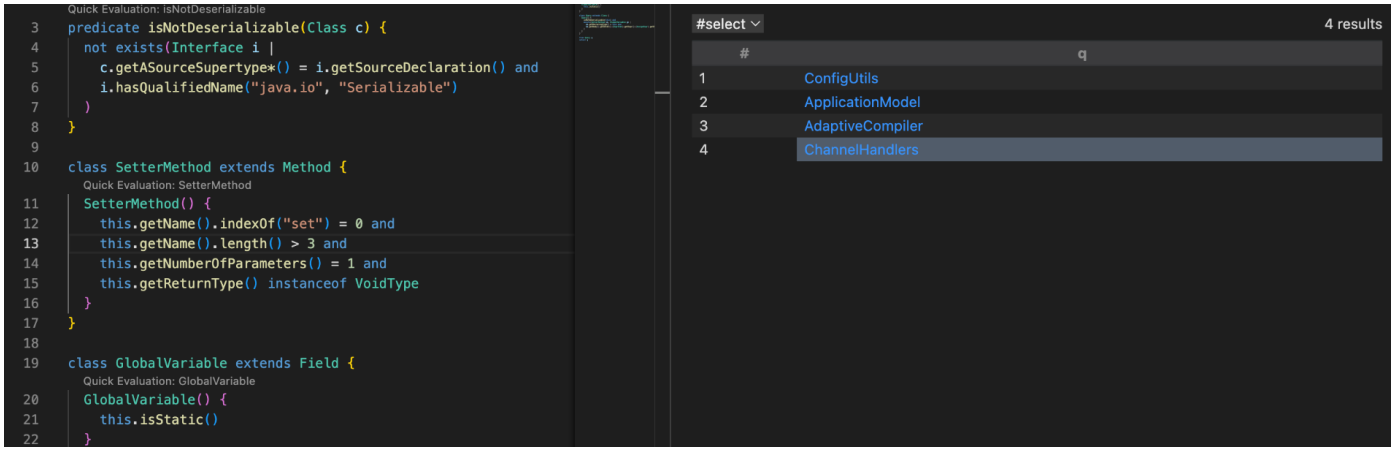
如何快速找到这个类？ codeql。

1、创建数据库

```
arch -x86_64 ./codeql database create
/Users/pen4uin/Workspace/CodeAnalysis/codeql/databases/dubbo/dubbo2_7_21 --
language="java" --command="mvn clean install -Dmaven.test.skip=true --file
pom.xml" --source-
root=/Users/pen4uin/Workspace/VulnerabilityResearch/dubbo/dubbo-dubbo-2.7.21 --
overwrite
```

- 坑: 这里需要删除子模块 `dubbo-serialization-protobuf`，不然会报错生成数据库失败

2、编写符合以上条件的ql规则



最终得到期望类: ConfigUtils

```
public class ConfigUtils {

    private static final Logger logger = LoggerFactory.getLogger(ConfigUtils.class);
    private static Pattern VARIABLE_PATTERN = Pattern.compile(
            "\\$\\s*\\{?\\s*([\\._0-9a-zA-Z]+)\\s*\\}?");
    private static volatile Properties PROPERTIES;
```

完整的ql规则

```
import java

predicate isNotDeserializable(Class c) {
  not exists(Interface i |
    c.getASourceSupertype*() = i.getSourceDeclaration() and
    i.hasQualifiedName("java.io", "Serializable")
  )
}

class SetterMethod extends Method {
  SetterMethod() {
    this.getName().indexOf("set") = 0 and
    this.getName().length() > 3 and
    this.getNumberOfParameters() = 1 and
    this.getReturnType() instanceof VoidType
  }
}

class GlobalVariable extends Field {
  GlobalVariable() {
    this.isStatic()
  }
}

class Query extends Class {
  Query() {
    isNotDeserializable(this) and
    exists(SetterMethod sm, GlobalVariable gv |
      sm.getDeclaringType() = this and
      sm.getBody().getAStmt().(ExprStmt).getExpr().(AssignExpr).getDest().
(VarAccess).getVariable() = gv
    )
  }
}

from Query q
select q
```