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# Kotlin static code analysis

Unique rules to find Bugs, Vulnerabilities, Security Hotspots, and Code Smells in your KOTLIN code

All rules 98 Vulnerability 10 Bug 17 Security Hotspot 15 Code Smell 56

Tags ▾

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|  |                  |
|--|------------------|
| Hard-coded credentials are security-sensitive                            | Security Hotspot |
| Cipher algorithms should be robust                                       | Vulnerability    |
| Encryption algorithms should be used with secure mode and padding scheme | Vulnerability    |
| Server hostnames should be verified during SSL/TLS connections           | Vulnerability    |
| Server certificates should be verified during SSL/TLS connections        | Vulnerability    |
| Cryptographic keys should be robust                                      | Vulnerability    |
| Weak SSL/TLS protocols should not be used                                | Vulnerability    |
| "SecureRandom" seeds should not be predictable                           | Vulnerability    |
| Cipher Block Chaining IVs should be unpredictable                        | Vulnerability    |
| Hashes should include an unpredictable salt                              | Vulnerability    |
| Regular expressions should be syntactically valid                        | Bug              |
| "runFinalizersOnExit" should not be called                               | Bug              |

## Character classes should be preferred over reluctant quantifiers in regular expressions

Analyze your code

Code Smell Minor ? regex

Using reluctant quantifiers (also known as lazy or non-greedy quantifiers) in patterns can often lead to needless backtracking, making the regex needlessly inefficient and potentially vulnerable to **catastrophic backtracking**. Particularly when using `. * ?` or `. + ?` to match anything up to some terminating character, it is usually a better idea to instead use a greedily or possessively quantified negated character class containing the terminating character. For example `< . + ? >` should be replaced with `< [ ^ > ] ++ >`.

### Noncompliant Code Example

```
< . + ? >
" . * ? "
```

### Compliant Solution

```
< [ ^ > ] ++ >
" [ ^ " ] * + "
```

or

```
< [ ^ > ] ++ >
" [ ^ " ] * "
```

### Exceptions

This rule only applies in cases where the reluctant quantifier can easily be replaced with a negated character class. That means the repetition has to be terminated by a single character or character class. Patterns such as the following, where the alternatives without reluctant quantifiers are more complicated, are therefore not subject to this rule:

```
< ! -- . * ? -- >
/ \ * . * ? \ * /
```

Available In:

sonarlint | sonarcloud | sonarqube

|  |
|--|
| <div>"ScheduledThreadPoolExecutor"<br/>should not have 0 core threads</div> <div> Bug</div>                           |
| <div>Jump statements should not occur in<br/>"finally" blocks</div> <div> Bug</div>                                   |
| <div>Using clear-text protocols is security-<br/>sensitive</div> <div> Security Hotspot</div>                         |
| <div>Accessing Android external storage is<br/>security-sensitive</div> <div> Security Hotspot</div>                  |
| <div>Receiving intents is security-sensitive</div> <div> Security Hotspot</div>                                       |
| <div>Broadcasting intents is security-<br/>sensitive</div> <div> Security Hotspot</div>                             |
| <div>Using weak hashing algorithms is<br/>security-sensitive</div> <div> Security Hotspot</div>                     |
| <div>Using pseudorandom number<br/>generators (PRNGs) is security-<br/>sensitive</div> <div> Security Hotspot</div> |
| <div>Empty lines should not be tested with<br/>regex MULTILINE flag</div> <div> Code Smell</div>                    |
| <div>Cognitive Complexity of functions<br/>should not be too high</div> <div> Code Smell</div>                      |
|  |