Code Inspection

Software Engineering 2 - Project

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Outline

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Our code inspection

- Manual inspection
  - Checklist
  - Other problems
- Automatic code review
  - SonarQube
  - PMD
  - FindBugs

Different methods and tools also to compare the different sensibility towards code style.

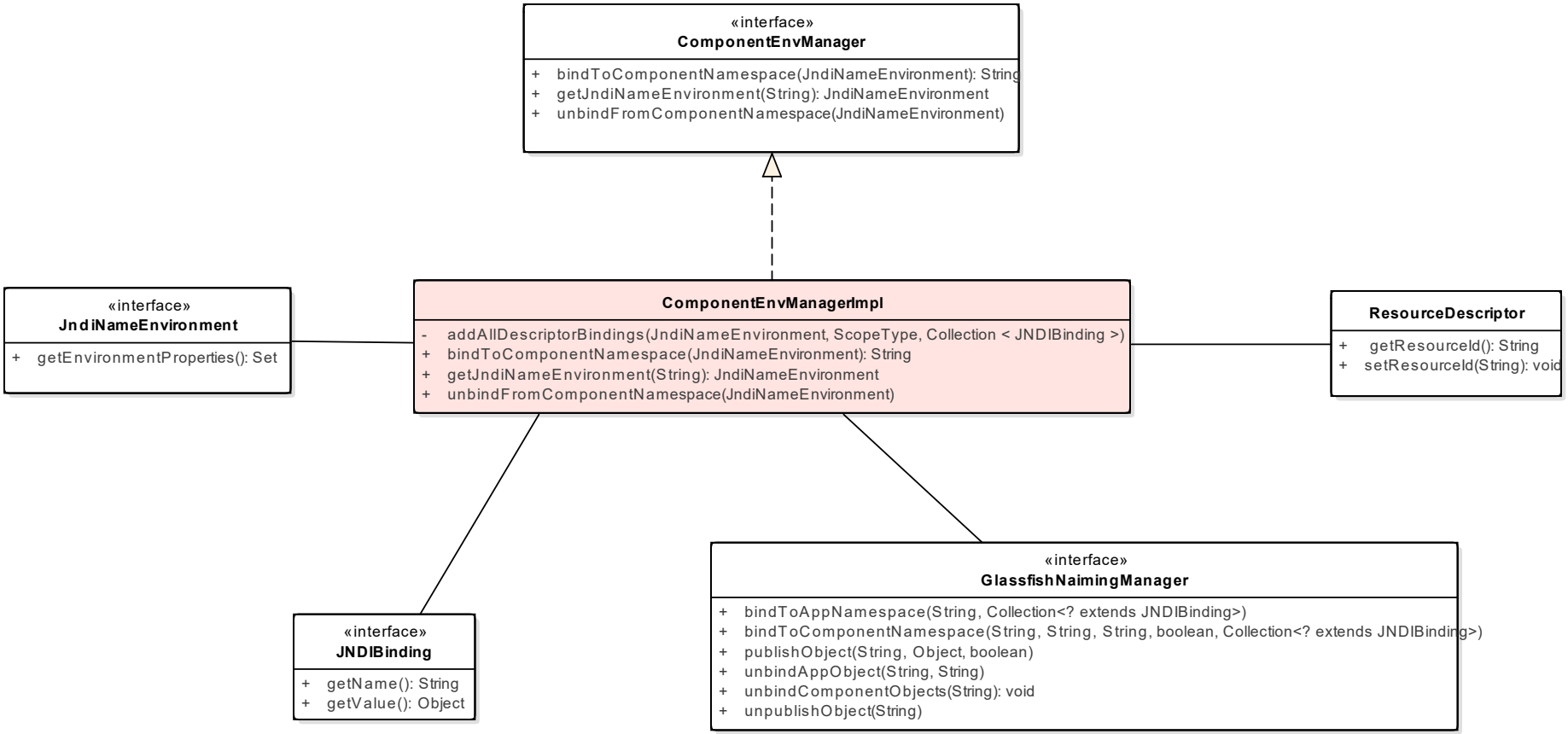
Outline

Class and methods

public class ComponentEnvManagerImpl implements ComponentEnvManager

- public JndiNameEnvironment getJndiNameEnvironment(String componentId)
- public String bindToComponentNamespace(JndiNameEnvironment env)throws NamingException
- private void addAllDescriptorBindings addAllDescriptorBindings (JndiNameEnvironment env , ScopeType scope , Collection < JNDIBinding > jndiBindings)
- public void unbindFromComponentNamespace(JndiNameEnvironment env)throws NamingException

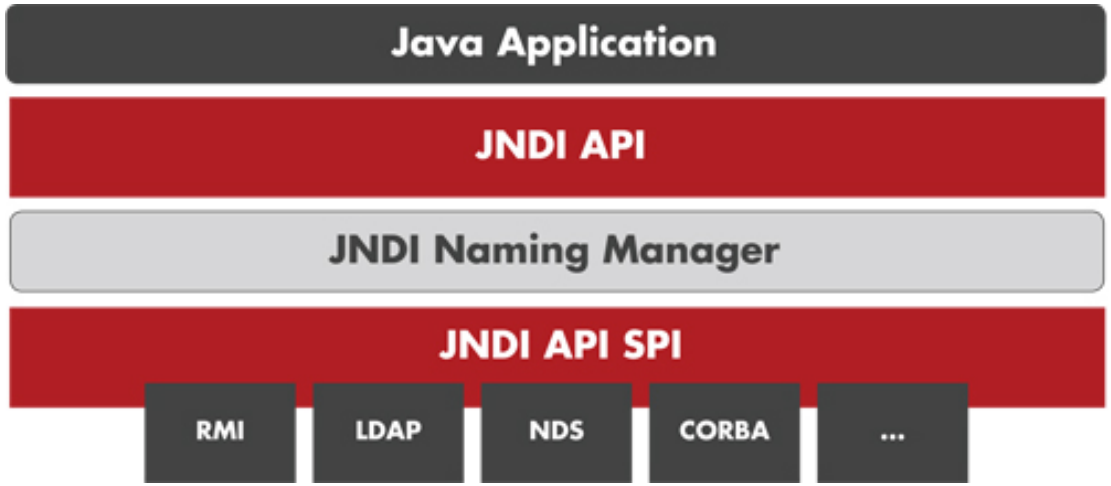
Class and methods



Outline

Understanding functional role...

- Few comments
- Missing JavaDoc



Briefly about JNDI environments

- Each resource object is identified by a *JNDI name*, bound on the *naming server*.
- Web components must have access to a *JNDI naming environment*.
- The *application component's naming environment* allows customization of the application component's business logic during deployment or assembly without need of changing code.

Functional role of methods

- getJndiNameEnvironment returns the JNDI environment associated to the component whose name is passed as parameter
- bindToComponentNamespace publishes in the naming server the name of the JNDI environment passed as parameter
- addAllDescriptorBindings converts the resource descriptors associated to the JNDI environment to JNDI bindings
- unbindFromComponentNamespace reverse function with respect to bindToComponentNamespace

Outline

Example 1

#Issue	**1**
Class/Method	ComponentEnvManagerImpl/getJndiNameEnvironment
#Line	161
Code fragment	`RefCountJndiNameEnvironment rj`
Issue category	Naiming conventions
Issue ref	1
Motivation	Method variable name rj non meaningful.
Comment	Variable name should refer to the object referenced.

Example 2

#Issue	**39**
Class/Method	ComponentEnvManagerImpl
#Line	106
Code fragment	`GlassfishNamingManager namingManager`
Issue category	Initialization and Declarations
Issue ref	28
Motivation	Friendly instance variable not used by same package classes, should be private.
Comment	Keeping the lowest visibility as possible is preferred for information hiding.

Example 3 - usage of continue

```
for (ResourceDescriptor descriptor : allDescriptors) {

        if (!dependencyAppliesToScope(descriptor, scope)) {
                continue;
        }

        if(descriptor.getResourceType().equals(DSD)) {
                if (descriptor.isDeployed()) {
                continue;
                }
        }

        [...]
}
```

Example 3 - usage of continue

```
for (ResourceDescriptor descriptor : allDescriptors) {

        if (dependencyAppliesToScope(descriptor, scope) &&
                !(descriptor.getResourceType().equals(DSD)
                    &&
                (descriptor.isDeployed())) ) {

                [...]
        }
}
```

Summarized data

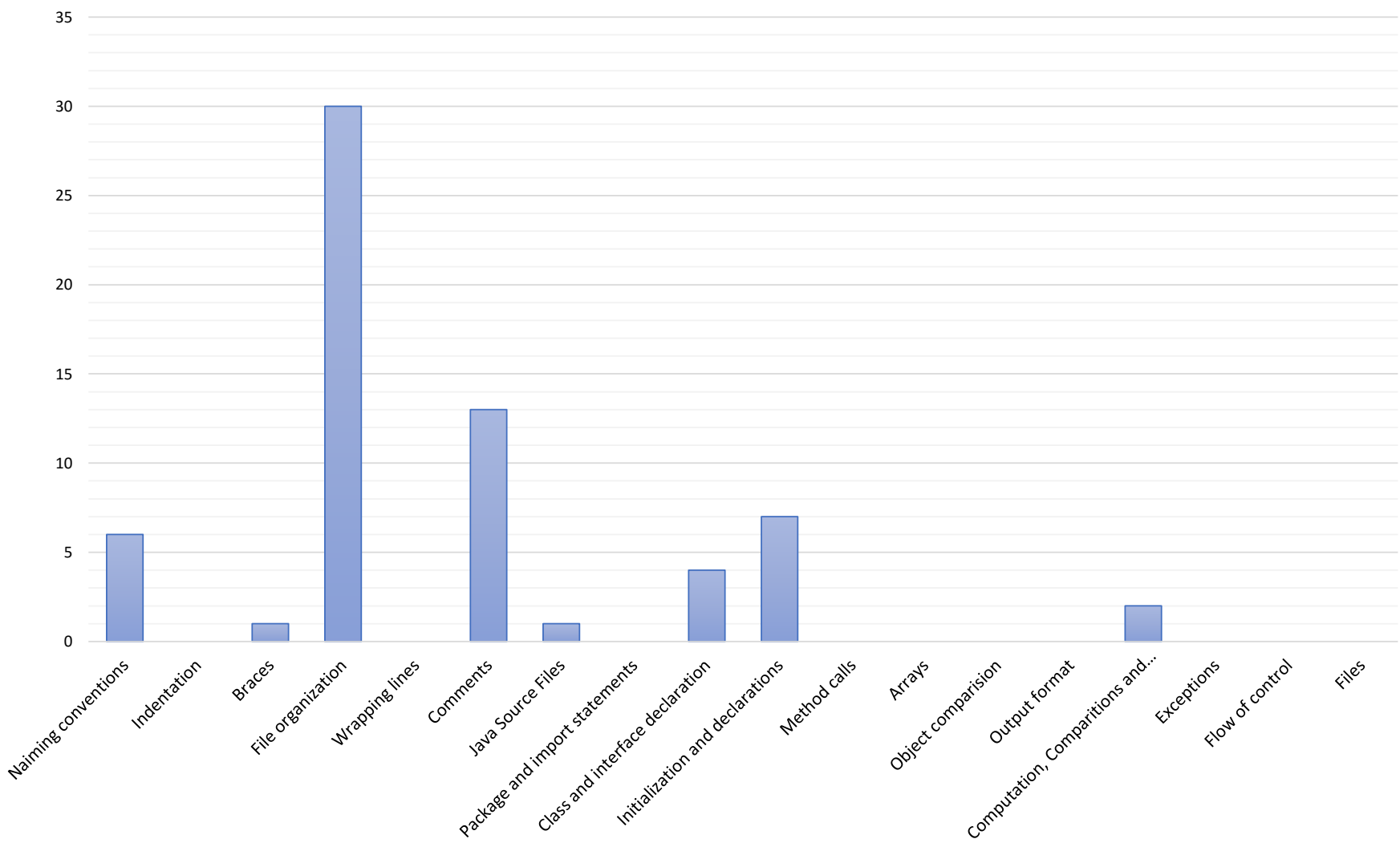
- Number of issues: 64
- Number of issues for KSLOC: 215,1
- No serious bugs, mainly *stylistic* issues and missing comments
  - Most of them are in category *File Organization* and *Comments*

Outline

Issue per category - Table

Issue category	Naiming conventions	Braces	File organization	Comments	Java Source Files	Class and interface declaration	Initialization and declarations	Computation, Comparitions and Assigments
Total per category	6	1	30	13	1	4	7	2
Total per category (%)	9,38	1,6	46,9	20,3	1,6	6,3	10,9	3,1

Issue per category - Chart

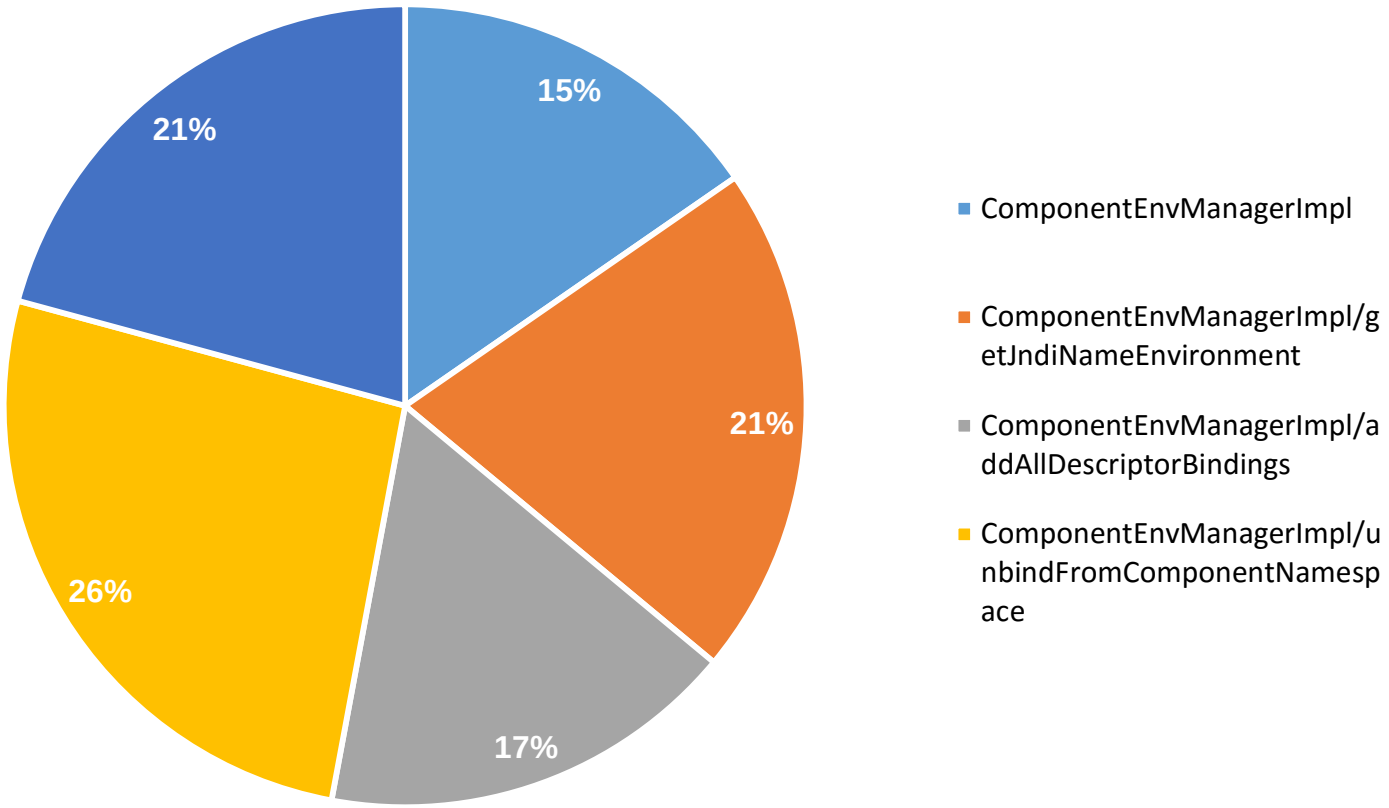


Outline

Issue per method/class - Table

Class/Method	SLOC	*Total for class/method*	*Total per class/method per KSLOC*
ComponentEnvManagerImpl	121	20	165,3
ComponentEnvManagerImpl/ getJndiNameEnvironment	9	2	222,2
ComponentEnvManagerImpl/ addAllDescriptorBindings	55	10	181,8
ComponentEnvManagerImpl/ unbindFromComponentNamespace	46	13	282,6
ComponentEnvManagerImpl/ bindToComponentNamespace	85	19	223,5
Total	316	64	215,1

Issue per method/class - Chart



References

- Software Engineering 2 course slides
- Glassfish reference `http://glassfish.pompel.me/`
- Oracle documentation

Questions