# Design Patterns and Refactoring

## Phase-1

**Group Members:**

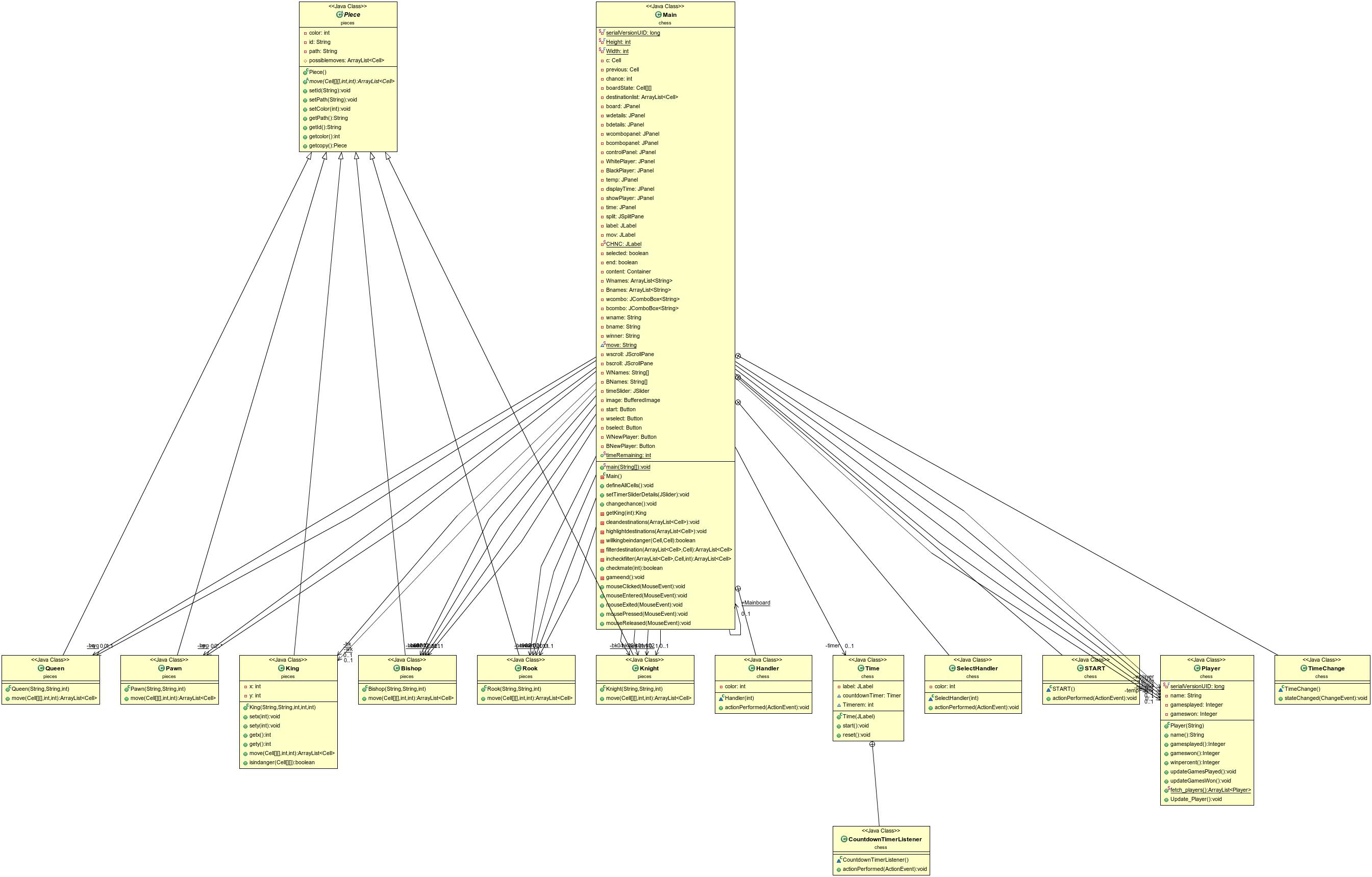
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# Class Diagram



# Code Smells

1.

Code Smell: Long Methods

Class: Main.java

Method: defineAllCells()

Re-factoring: Extract Method



2.

Code Smell: Long Methods

Class: Main.java

Re-factoring: Extract Method

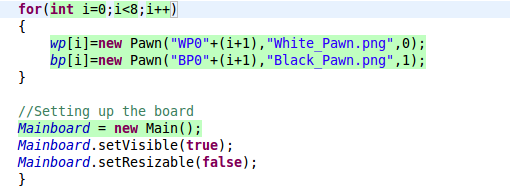


3.

Code smell: Long Method

Class: Main.java

Re-factoring: Extract Method



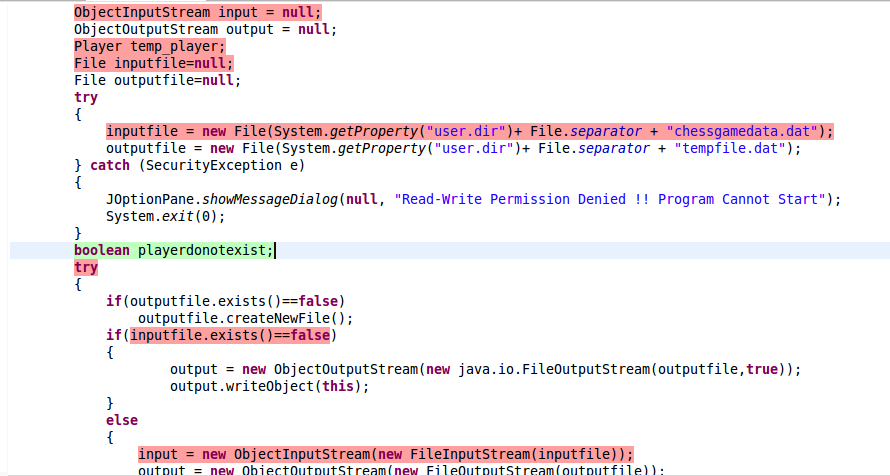
4.

Code smell: Long Method

Class: Player.java

Method: update\_player

Re-factoring: Extract Method and Renaming



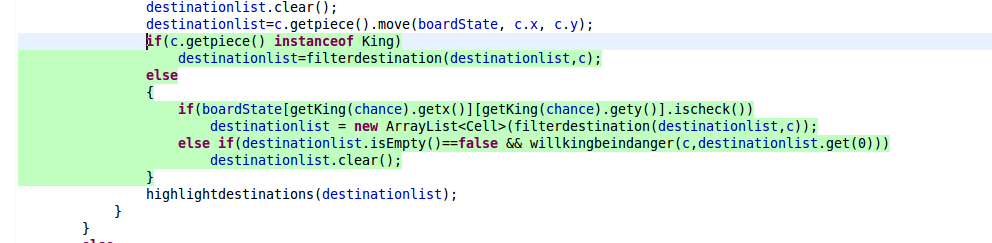
5.

Code Smell: Type Checking

Class: Main.java

Method: mouseClicked

Re-factoring: Replace Conditional with Polymorphism



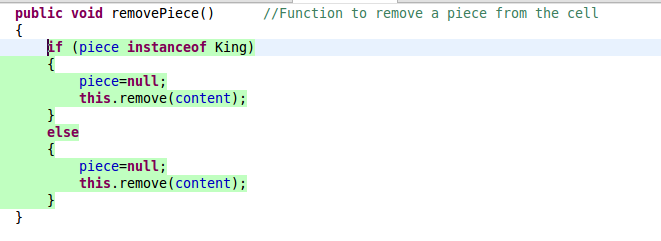
6.

Code Smell: Type Checking

Class: Cell.java

Method: removePiece

Re-factoring: Replace Conditional with polymorphism

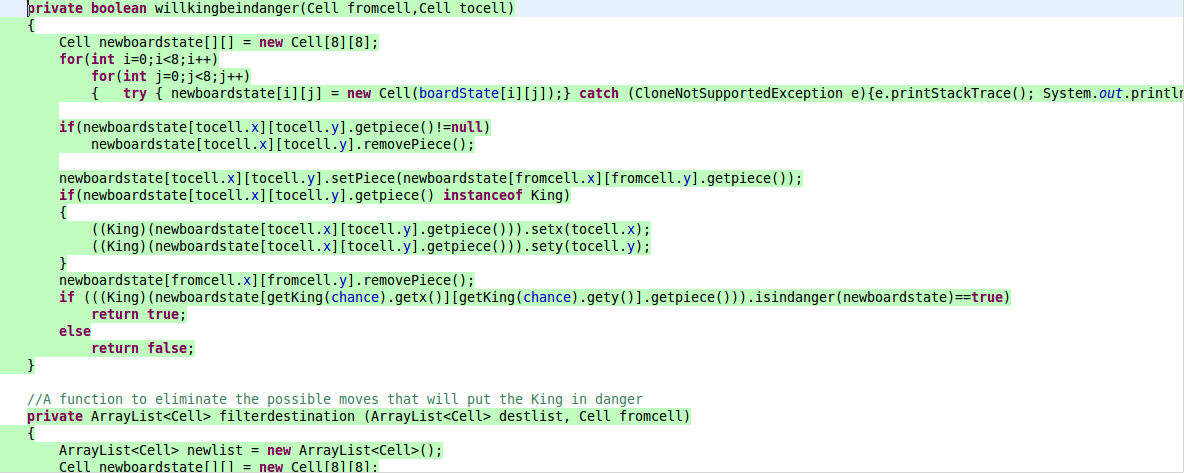


7.

Code Smell: God Class

Class: Main.java

Re-factoring: Extract Class

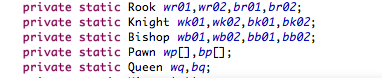


8.

Code Smell: Java naming convention violated

Class: Main.java

Re-factoring: Use meaningful names



9.

Code Smell: Avoid using implementation types like 'ArrayList'

Class: Main.java

Re-factoring: Use the interface instead. i.e, List interface

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10.

Code Smell: Some variables in code start with uppercase character.

Class: Main.java

Re-factoring: Variables should start with a lowercase character

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11.

Code Smell: Action level scope is defined for the variables which are used locally in one function only.

Class: Main.java

Re-factoring: Perhaps 'wscroll' and 'bscroll' could be replaced by a local variable.

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12.

Code Smell: Bad Programming Practice.

Class: Main.java

Re-factoring: Use a logger instead.

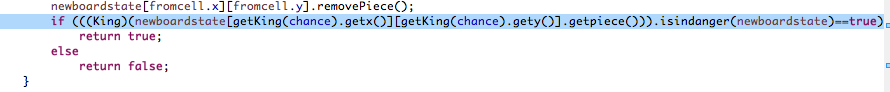
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13.

Code Smell: Method Chaining.

Class: Main.java

Re-factoring:

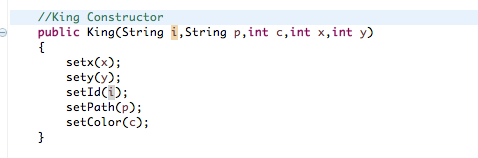


14.

Code Smell: Short variable names used

Class: King.java

Re-factoring: Use meaningful names



15.

Code Smell: Useless parentheses.

Class: King.java

Re-factoring: Do not use extra parenthesis.

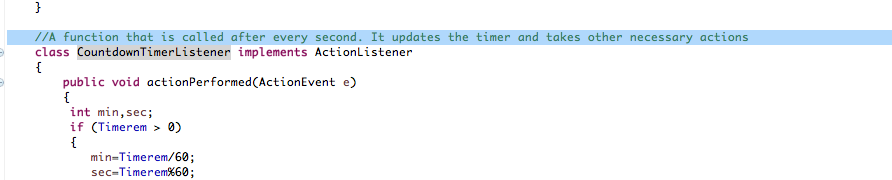
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16.

Code Smell: Unnecessary long comment.

Class: Time.java

Re-factoring: Do not use comments. Instead function or class name should be descriptive.



17.

Code Smell: if and for statements used without curly braces.

Class: Knight.java

Re-factoring: Avoid using if and for statements without curly braces

