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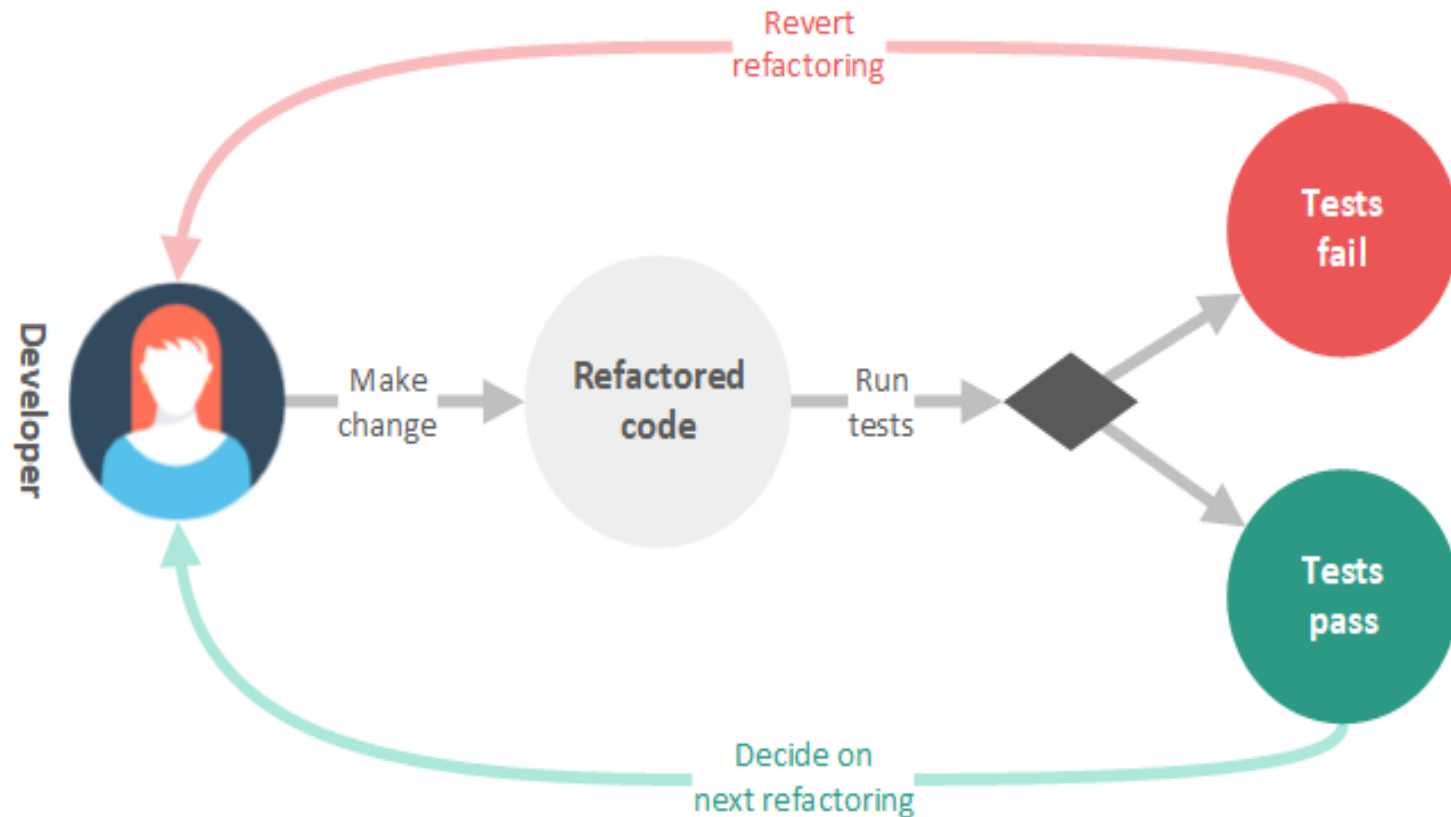


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# Code Refactoring

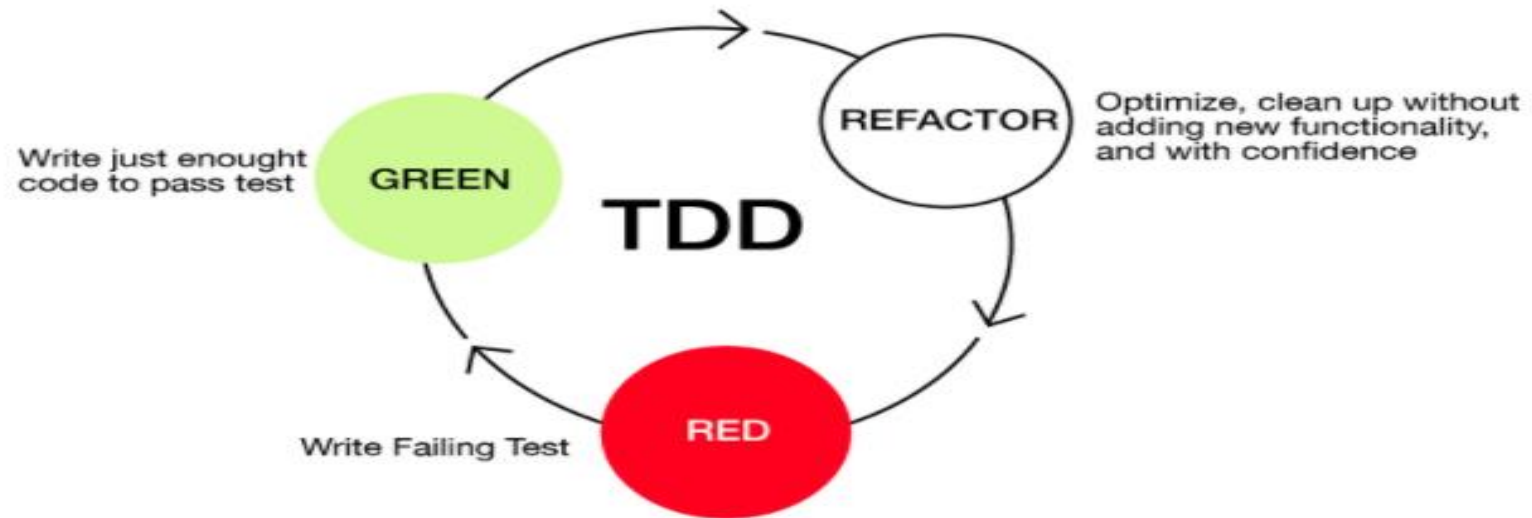
- Refactoring is a powerful Agile technique for improving existing software.
- It helps to ensure a system is maintainable and extensible.
- The system is more maintainable
- Leads to reduced costs.
- At the same time, if the code is well structured, new requirements can be introduced more efficiently and with less problems.

# Code Refactoring ...



# Red-Green-Refactor

- One of the most widely used techniques for code refactoring is the red/green process used in Agile test-driven development.
1. Stop and consider what needs to be developed. [RED]
  2. Get the development to pass basic testing. [GREEN]
  3. Implement improvements. [REFACTOR]



# Refactoring – Best Practices

- Refactor first before adding any new features
- Plan your refactoring project and timeline carefully
- Test often
- Get QA team involved
- Try refactoring automation
- As with most processes, the more it can be automated the easier and faster refactoring becomes.
- There are many shortcuts and tools to make refactoring less painful.
  - Ex: Auto indentation , main() method template, automatic setting and getters and constructor in Eclipse

# Refactoring – Example

```
void printOwing() {  
    printBanner();  
    //print details  
    System.out.println ("name: " + _name);  
    System.out.println ("amount      " + getOutstanding());  
}
```



**Refactored to**

```
void printOwing() {  
    printBanner();  
    printDetails(getOutstanding());  
}  
void printDetails (double outstanding) {  
    System.out.println ("name: " + _name);  
    System.out.println ("amount      " + outstanding);  
}
```

