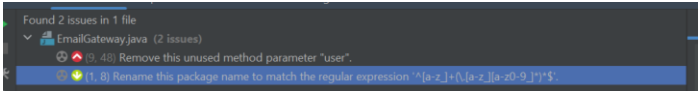
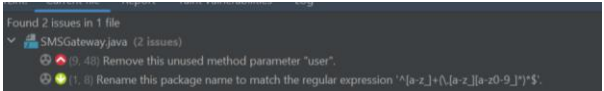
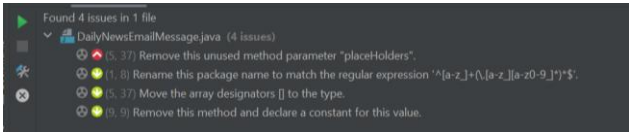
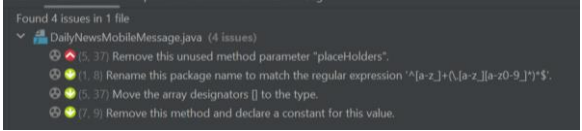
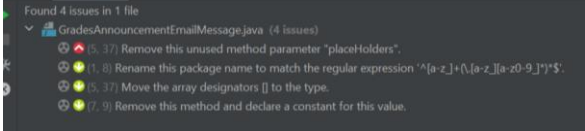
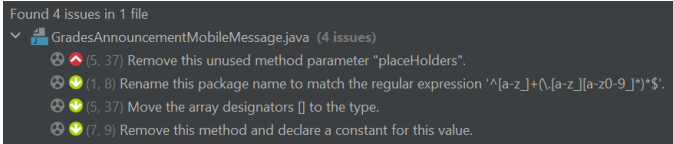


Lab Assignment

Team Members:

Name	ID
Nouran abdelhady	20196095
Randa Zyad	20196098
Mariam Mohamed	20196053
Sylvia Sami	20196027

1- Static Analysis Report for current code:

Class	SonarQube analysis
Class EmailGateway	
Class SMSGateway	
Class DailyNewsEmailMessage	
Class DailyNewsMobileMessage	
Class Grade AnnouncementEmailMessage	
Class Grade AnnouncementMobileMessage	

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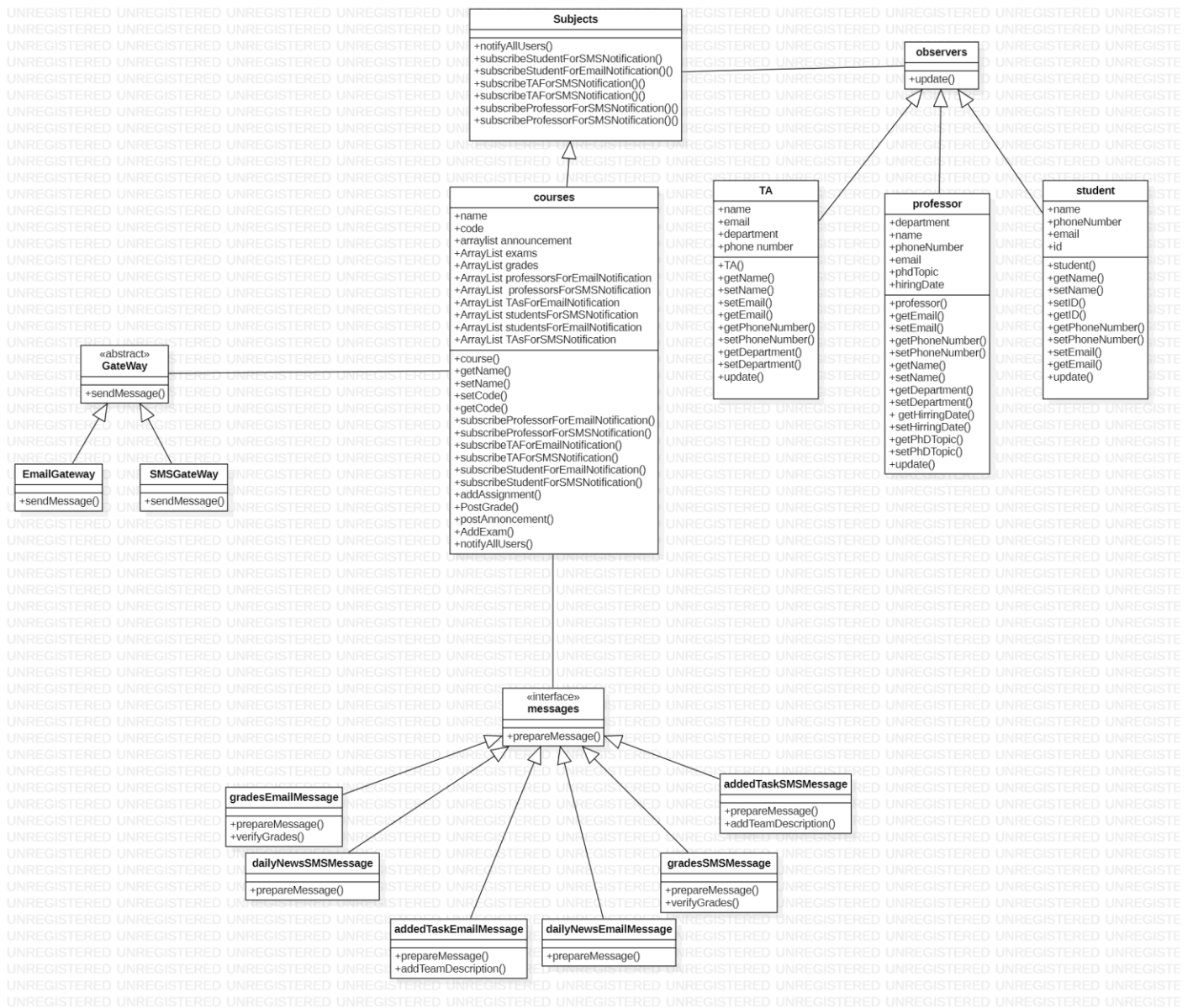
Class TaskAddedEmailMessage	 <p>TaskAddedEmailMessage.java (5 issues)</p> <ul style="list-style-type: none">(12, 13) Add a nested comment explaining why this method is empty, throw an UnsupportedOperationException or complete the implementation.(5, 37) Remove this unused method parameter "placeholders".(1, 8) Rename this package name to match the regular expression <code>^[a-z]+(\.[a-z_0-9]*)*\$</code>.(5, 37) Move the array designators [] to the type.(8, 9) Remove this method and declare a constant for this value.
Class TaskAddedMobileMessage	 <p>Found 5 issues in 1 file</p> <p>TaskAddedMobileMessage.java (5 issues)</p> <ul style="list-style-type: none">(11, 13) Add a nested comment explaining why this method is empty, throw an UnsupportedOperationException or complete the implementation.(5, 37) Remove this unused method parameter "placeholders".(1, 8) Rename this package name to match the regular expression <code>^[a-z]+(\.[a-z_0-9]*)*\$</code>.(5, 37) Move the array designators [] to the type.(7, 9) Remove this method and declare a constant for this value.
Class Course	 <p>Found 13 issues in 1 file</p> <p>Course.java (13 issues)</p> <ul style="list-style-type: none">(0, 0) Move this file to a named package.(20, 15) Rename this field "TAsForEmailNotification" to match the regular expression <code>^[a-z][a-zA-Z0-9]*\$</code>.(21, 15) Rename this field "TAsForSMSNotification" to match the regular expression <code>^[a-z][a-zA-Z0-9]*\$</code>.(31, 31) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(32, 23) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(33, 24) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(35, 48) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(36, 46) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(38, 41) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(39, 39) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(41, 46) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(42, 44) Replace the type specification in this constructor call with the diamond operator (<code><></code>).(87, 13) Rename this method name to match the regular expression <code>^[a-z][a-zA-Z0-9]*\$</code>.
Class TA	 <p>src \ users \ TA</p> <p>Project</p> <p>SonarLint: Current file Report Taint vulnerabilities Log</p> <p>No issues found in the current opened file</p>
Class professors	 <p>Project</p> <p>SonarLint: Current file Report Taint vulnerabilities Log</p> <p>Found 1 issue in 1 file</p> <p>Professor.java (1 issue)</p> <ul style="list-style-type: none">(8, 8) Rename this field "PhDTopic" to match the regular expression <code>^[a-z][a-zA-Z0-9]*\$</code>.
Class student	 <p>Project</p> <p>SonarLint: Current file Report Taint vulnerabilities Log</p> <p>Found 1 issue in 1 file</p> <p>Student.java (1 issue)</p> <ul style="list-style-type: none">(5, 5) Rename this field "Id" to match the regular expression <code>^[a-z][a-zA-Z0-9]*\$</code>.

2-Class Diagram after Refactoring:

Design Patterns used:

1-observer pattern

2-strategy pattern



3-Static Analysis Report after refactoring:

Class	SonarQube analysis
Class EmailGateway	<p>The screenshot shows the SonarQube interface for the file EmailGateway.java. The status bar at the bottom indicates "No issues found in the current opened file". The top navigation bar includes links for "Current file", "Report", "Taint vulnerabilities", and "Log".</p>
Class SMSGateway	

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Class DailyNewsEmailMessage	
Class DailyNewsMobileMessage	
Class Grade AnnouncementEmailMessage	
Class Grade AnnouncementMobileMessage	
Class TaskAddedEmailMessage	
Class TaskAddedMobileMessage	
Class Course	
Class gateway	

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	 A screenshot of the SonarLint IDE interface. The top bar shows 'Project' and 'GateWay.java'. Below it, a menu bar has 'SonarLint', 'Current file', 'Report', 'Taint vulnerabilities', and 'Log'. A green play button icon is on the left, and the text 'No issues found in the current opened file' is displayed.
Class messages	 A screenshot of the SonarLint IDE interface. The top bar shows 'Project' and 'Messages.java'. Below it, a menu bar has 'SonarLint', 'Current file', 'Report', 'Taint vulnerabilities', and 'Log'. A green play button icon is on the left, and the text 'No issues found in the current opened file' is displayed.
Class subjects	 A screenshot of the SonarLint IDE interface. The top bar shows 'Project' and 'Subject.java'. Below it, a menu bar has 'SonarLint', 'Current file', 'Report', 'Taint vulnerabilities', and 'Log'. A green play button icon is on the left, and the text 'No issues found in the current opened file' is displayed.
Class Observers	 A screenshot of the SonarLint IDE interface. The top bar shows 'Project' and 'Observers.java'. Below it, a menu bar has 'SonarLint', 'Current file', 'Report', 'Taint vulnerabilities', and 'Log'. A green play button icon is on the left, and the text 'No issues found in the current opened file' is displayed.
Class Ta	 A screenshot of the SonarLint IDE interface. The top bar shows 'Project' and 'TA.java'. Below it, a menu bar has 'SonarLint', 'Current file', 'Report', 'Taint vulnerabilities', and 'Log'. A green play button icon is on the left, and the text 'No issues found in the current opened file' is displayed.
Class professor	 A screenshot of the SonarLint IDE interface. The top bar shows 'Project' and 'Professor.java'. Below it, a menu bar has 'SonarLint', 'Current file', 'Report', 'Taint vulnerabilities', and 'Log'. A green play button icon is on the left, and the text 'No issues found in the current opened file' is displayed.
Class student	 A screenshot of the SonarLint IDE interface. The top bar shows 'Project' and 'Student.java'. Below it, a menu bar has 'SonarLint', 'Current file', 'Report', 'Taint vulnerabilities', and 'Log'. A green play button icon is on the left, and the text 'No issues found in the current opened file' is displayed.

4- GitHub Repository Link:

<https://github.com/randarihany/notification>

5-Trello Link:

<https://trello.com/b/AF9Xuf5T/notification-project>