

AnimationWrapper

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
AnimationWrapper()		0%		n/a	1	1	3	3	1	1
setOnFinished(EventHandler)		0%		n/a	1	1	2	2	1	1
play()		0%		n/a	1	1	2	2	1	1
getChildren()		0%		n/a	1	1	1	1	1	1
Total	21 of 21	0%	0 of 0	n/a	4	4	8	8	4	4

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AnimationWrapper.java

```
1. package com.example.project.controllers.gameScreens.animations;
2.
3. import javafx.animation.Animation;
4. import javafx.animation.SequentialTransition;
5. import javafx.collections.ObservableList;
6. import javafx.event.ActionEvent;
7. import javafx.event.EventHandler;
8.
9. /**
10. * Animation wrapper class for our projects animations that get used.
11. */
12. public abstract class AnimationWrapper
13. {
14.     protected final SequentialTransition sequentialAnimation;
15.
16.     protected AnimationWrapper() {
17.         this.sequentialAnimation = new SequentialTransition();
18.     }
19.
20.     /**
21.      * play.
22.     */
23.     public void play() {
24.         sequentialAnimation.play();
25.     }
26.
27.     /**
28.      * Set on finished.
29.      * @param handler actions to do.
30.     */
31.     public void setOnFinished(EventHandler<ActionEvent> handler) {
32.         sequentialAnimation.setOnFinished(handler);
33.     }
34.
35.     /**
36.      * returns animations children.
37.      * @return list of animations.
38.     */
39.     public ObservableList<Animation> getChildren(){
40.         return this.sequentialAnimation.getChildren();
41.     }
42. }
```

TextEmphasisAnimation

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
TextEmphasisAnimation(Label, Paint, Paint, Duration)		0%	n/a	1	1	16	16	1	1	1
lambda\$new\$1(Label, Paint, ActionEvent)		0%	n/a	1	1	1	1	1	1	1
lambda\$new\$0(Label, Paint, ActionEvent)		0%	n/a	1	1	1	1	1	1	1
Total	82 of 82	0%	0 of 0	n/a	3	3	16	16	3	3

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UpgradeEffects.java

```

1. package com.example.project.models.tiles;
2.
3. import com.example.project.models.gameScreens.LevelModel;
4.
5. import java.util.Random;
6.
7. /**
8. * upgrade effect methods
9. */
10. public class UpgradeEffects {
11.     /**
12.      * Adds +2 to the score multiplier for every identical pair of letters next to each other
13.      * @param levelModel model to use.
14.      */
15.     public static void glassesEffect(LevelModel levelModel) {
16.         // for each letter in word, if the current letter matches the previous letter add 2 to the modifier
17.         for (int i = 1; i < levelModel.getWordWindowTilesProperty().size(); i++) {
18.             Character previousLetter = levelModel.getWordWindowTilesProperty().get(i-1).getLetter();
19.             Character currentLetter = levelModel.getWordWindowTilesProperty().get(i).getLetter();
20.             if (previousLetter.equals(currentLetter)) {
21.                 int newMulti = levelModel.getWordMultiProperty().get() + 2;
22.                 levelModel.setWordMulti(newMulti);
23.             }
24.         }
25.     }
26. }
27.
28. /**
29. * Value is doubled for a random letter in the played word
30. * @param levelModel model to use.
31. */
32. public static void diceEffect(LevelModel levelModel) {
33.     Random random = new Random();
34.     int randomNum = random.nextInt(levelModel.getWordWindowTilesProperty().size());
35.     int newScore = levelModel.getWordPointsProperty().get() + levelModel.getWordWindowTilesProperty().get(randomNum).getValue();
36.     levelModel.setWordPoints(newScore);
37. }
38.
39. /**
40. * 20% Chance the total word score is doubled
41. * @param levelModel model to use.
42. */
43. public static void coinEffect(LevelModel levelModel) {
44.     Random random = new Random();
45.     double chance = 0.2;
46.     if (random.nextDouble() < chance) {
47.         int newScore = levelModel.getWordPointsProperty().get() * 2;
48.         levelModel.setWordPoints(newScore);
49.     }
50. }
51.
52. /**
53. * If played word is a palindrome, doubles word score.
54. * @param levelModel model to use.
55. */
56. public static void mirrorEffect(LevelModel levelModel) {
57.     String word = levelModel.getCurrentWord();
58.     String reversedWord = new StringBuilder(word).reverse().toString();
59.
60.     if (word.equals(reversedWord)) {
61.         int newScore = levelModel.getWordPointsProperty().get() * 2;
62.         levelModel.setWordPoints(newScore);
63.     }
64. }
65.
66. /**
67. * Add +1 to score multiplier for every consecutive letter alphabetical order.
68. * @param levelModel model to use.
69. */
70. public static void braceletEffect(LevelModel levelModel) {
71.
72.     String alphabet = "ABCDEFGHIJKLMNPQRSTUVWXYZ";
73.
74.     // for each letter in the word, if the next letter matches the next letter in the alphabet, add 1 to modifier
75.     for (int i = 0; i < levelModel.getWordWindowTilesProperty().size()-1; i++) {
76.
77.         Character currentLetter = levelModel.getWordWindowTilesProperty().get(i).getLetter();
78.         Character nextLetter = levelModel.getWordWindowTilesProperty().get(i+1).getLetter();
79.
80.         if (currentLetter.equals('Z')) { continue; }
81.
82.         Character nextAlphabeticalLetter = alphabet.charAt(alphabet.indexOf(currentLetter)+1);
83.
84.         if (nextLetter.equals(nextAlphabeticalLetter)) {
85.             int newMulti = levelModel.getWordMultiProperty().get() + 1;

```

```
86.             levelModel.setWordMulti(newMulti);
87.         }
88.     }
89.
90.
91.    /**
92.     * adds 5 to the word score for every x in the tile rack.
93.     * @param levelModel model to use effect on.
94.     */
95.    public static void buttonEffect(LevelModel levelModel) {
96.        for (LetterTileModel tile : levelModel.getTileRackTilesProperty()) {
97.            if (tile.getLetter().equals('X')) {
98.                int newScore = levelModel.getWordPointsProperty().get() + 5;
99.                levelModel.setWordPoints(newScore);
100.            }
101.        }
102.    }
103. }
```

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UpgradeTileModel.UpgradeBuilder

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
description(String)	100%		n/a		0	1	0	1	0	1
name(String)	100%		n/a		0	1	0	1	0	1
imagePath(String)	100%		n/a		0	1	0	1	0	1
cost(double)	100%		n/a		0	1	0	1	0	1
upgradeEffect(Consumer)	100%		n/a		0	1	0	1	0	1
build()	100%		n/a		0	1	0	1	0	1
UpgradeTileModel.UpgradeBuilder()	100%		n/a		0	1	0	1	0	1
Total	0 of 33	100%	0 of 0	n/a	0	7	0	7	0	7

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UpgradeTileModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
UpgradeTileModel(UpgradeTileModel.UpgradeBuilder)	100%	n/a	0	1	0	7	0	1	0	1
runUpgradeEffect(LevelModel)	100%	n/a	0	1	0	2	0	1	0	1
getName()	100%	n/a	0	1	0	1	0	1	0	1
getDescription()	100%	n/a	0	1	0	1	0	1	0	1
getCost()	100%	n/a	0	1	0	1	0	1	0	1
getAbilityImagePath()	100%	n/a	0	1	0	1	0	1	0	1
getFXMLPath()	100%	n/a	0	1	0	1	0	1	0	1
Total	0 of 42	100%	0 of 0	n/a	0	7	0	14	0	7

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UpgradeTileModel.java

```
1. package com.example.project.models.tiles;
2.
3. import com.example.project.models.gameScreens.LevelModel;
4.
5. import java.util.function.Consumer;
6.
7. /**
8. * Represents the upgrade tiles sold at the shop.
9. */
10. public class UpgradeTileModel extends TileModel
11. {
12.     private final String description;
13.     private final String name;
14.     private final String imagePath;
15.     private final double cost;
16.     private final Consumer<LevelModel> upgradeEffect;
17.
18. /**
19. * public upgrade constructor.
20. * @param builder upgrade builder
21. */
22. public UpgradeTileModel(UpgradeBuilder builder)
23. {
24.     this.description = builder.description;
25.     this.name = builder.name;
26.     this.imagePath = builder.imagePath;
27.     this.cost = builder.cost;
28.     this.upgradeEffect = builder.upgradeEffect;
29. }
30.
31. /**
32. * builder class for the upgrades
33. */
34. public static class UpgradeBuilder {
35.     private String description;
36.     private String name;
37.     private String imagePath;
38.     private double cost;
39.     private Consumer<LevelModel> upgradeEffect;
40.
41. /**
42. * upgrade description builder
43. * @param description new upgrade description
44. * @return description
45. */
46. public UpgradeBuilder description(String description) {this.description = description; return this; }
47.
48. /**
49. * upgrade name builder
50. * @param name new upgrade name
51. * @return name
52. */
53. public UpgradeBuilder name(String name) {this.name = name; return this; }
54.
55. /**
56. * upgrade image path builder
57. * @param imagePath new upgrade image path
58. * @return image path
59. */
60. public UpgradeBuilder imagePath(String imagePath) {this.imagePath = imagePath; return this; }
61.
62. /**
63. * upgrade cost builder
64. * @param cost new upgrade cost
65. * @return cost
66. */
67. public UpgradeBuilder cost(double cost) {this.cost = cost; return this; }
68.
69. /**
70. * upgrade effect builder
71. * @param upgradeEffect new upgrade effect
72. * @return upgrade effect
73. */
74. public UpgradeBuilder upgradeEffect(Consumer<LevelModel> upgradeEffect) { this.upgradeEffect = upgradeEffect; return this; }
75.
76. /**
77. * build upgrade
78. * @return new upgrade
79. */
80. public UpgradeTileModel build() { return new UpgradeTileModel(this); }
81. }
82.
83. /**
84. * gets the name.
85. * @return return name.
```

```
86.      */
87.     public String getName(){
88.         return this.name;
89.     }
90.
91.    /**
92.     * gets the description.
93.     * @return description.
94.     */
95.    public String getDescription(){
96.        return this.description;
97.    }
98.
99.    /**
100.     * gets the cost
101.     * @return return cost.
102.     */
103.    public double getCost()
104.    {
105.        return this.cost;
106.    }
107.
108.    /**
109.     * gets upgrade tile image path.
110.     * @return returns loaded Image for this tile.
111.     */
112.    public String getAbilityImagePath() { return imagePath; }
113.
114.    /**
115.     * gets the effect for this tile.
116.     * @param model level model.
117.     */
118.    public void runUpgradeEffect(LevelModel model)
119.    {
120.        upgradeEffect.accept(model);
121.    }
122.
123.    @Override
124.    public String getFXMLPath() {
125.        return "/com/example/project/SingleTiles/upgradeTileView.fxml";
126.    }
127.}
```

com.example.project.models.tiles

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C UpgradeEffects		0%		0%	16	16	41	41	7	7	1	1
C ScrabbleTileProvider		100%		100%	0	7	0	45	0	5	0	1
C UpgradeTileModel		100%		n/a	0	7	0	14	0	7	0	1
C UpgradeTileModel.UpgradeBuilder		100%		n/a	0	7	0	7	0	7	0	1
C LetterTileModel		100%		n/a	0	4	0	8	0	4	0	1
C TileModel		100%		n/a	0	3	0	5	0	3	0	1
C EmptyTileSlotModel		100%		n/a	0	4	0	6	0	4	0	1
C ScrabbleTileProvider.ScrabbleTileData		100%		n/a	0	1	0	1	0	1	0	1
Total	200 of 736	72%	18 of 22	18%	16	49	41	127	7	38	1	8

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com.example.project.models.tiles

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
UpgradeEffects.java		0%		0%	16	16	41	41	7	7	1	1
ScrabbleTileProvider.java		100%		100%	0	8	0	46	0	6	0	2
UpgradeTileModel.java		100%		n/a	0	14	0	21	0	14	0	2
LetterTileModel.java		100%		n/a	0	4	0	8	0	4	0	1
TileModel.java		100%		n/a	0	3	0	5	0	3	0	1
EmptyTileSlotModel.java		100%		n/a	0	4	0	6	0	4	0	1
Total	200 of 736	72%	18 of 22	18%	16	49	41	127	7	38	1	8

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User

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
User(String, String, int)	100%		n/a		0	1	0	5	0	1
getHighscore()	100%		n/a		0	1	0	1	0	1
getUsername()	100%		n/a		0	1	0	1	0	1
getPassword()	100%		n/a		0	1	0	1	0	1
Total	0 of 23	100%	0 of 0	n/a	0	4	0	8	0	4

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User.java

```
1. package com.example.project.models;
2.
3. /**
4.  * Represents a user in the application that can log in.
5. */
6. public class User {
7.
8.     private final String username;
9.
10.    private final String password;
11.
12.    private final Integer highscore;
13.
14.    /**
15.     * Constructor.
16.     * @param username username.
17.     * @param password password.
18.     * @param highscore highscore.
19.     */
20.    public User(String username, String password, int highscore)
21.    {
22.        this.hightscore = highscore;
23.        this.username = username;
24.        this.password = password;
25.    }
26.
27.    /**
28.     * get username.
29.     * @return username.
30.     */
31.    public String getUsername(){
32.        return username;
33.    }
34.
35.    /**
36.     * get password.
37.     * @return password.
38.     */
39.    public String getPassword(){
40.        return password;
41.    }
42.
43.    /**
44.     * get highscore.
45.     * @return returns highscore.
46.     */
47.    public int getHighscore(){
48.        return this.hightscore;
49.    }
50.
51. }
```

com.example.project.models

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed Cxty	Missed Lines	Missed Methods	Missed Classes
G User	<div style="width: 100%;">100%</div>	100%	n/a	0	4	0	8	0
Total	0 of 23	100%	0 of 0	n/a	0	4	0	4

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com.example.project.models

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
User.java	<div style="width: 100%;">100%</div>		n/a		0	4	0	8	0	4	0	1
Total	0 of 23	100%	0 of 0	n/a	0	4	0	8	0	4	0	1

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TextEmphasisAnimation.java

```
1. package com.example.project.controllers.gameScreens.animations;
2.
3. import javafx.animation.PauseTransition;
4. import javafx.animation.ScaleTransition;
5. import javafx.scene.control.Label;
6. import javafx.scene.paint.Paint;
7. import javafx.util.Duration;
8.
9. /**
10. * An animation to quickly enlarge text and then return it to its original scale.
11. */
12. public class TextEmphasisAnimation extends AnimationWrapper
13. {
14.     /**
15.      * create the animations for text growing then shrinking
16.      * @param textToAnimate Label.
17.      * @param colorAtStart initial colour change.
18.      * @param changeColourAtEnd colour change after finished.
19.      * @param timePauseAfterAnim time delay after animation until animation finished.
20.      */
21.     public TextEmphasisAnimation(Label textToAnimate, Paint colorAtStart, Paint changeColourAtEnd, Duration timePauseAfterAnim)
22.     {
23.         super();
24.
25.         var colourTextAtStart = new PauseTransition(Duration.seconds(0));
26.         colourTextAtStart.setOnFinished(e -> textToAnimate.setTextFill(colorAtStart));
27.         this.sequentialAnimation.getChildren().add(colourTextAtStart);
28.
29.         var revertSizeTransition = new ScaleTransition(Duration.seconds(0.2), textToAnimate);
30.         revertSizeTransition.setToY(1);
31.         revertSizeTransition.setToX(1);
32.
33.         var doubleSizeTransition = new ScaleTransition(Duration.seconds(0.2), textToAnimate);
34.         doubleSizeTransition.setToY(2);
35.         doubleSizeTransition.setToX(2);
36.
37.         var pauseAfter = new PauseTransition(timePauseAfterAnim);
38.         pauseAfter.setOnFinished(e -> textToAnimate.setTextFill(changeColourAtEnd));
39.
40.         this.sequentialAnimation.getChildren().add(doubleSizeTransition);
41.         this.sequentialAnimation.getChildren().add(revertSizeTransition);
42.         this.sequentialAnimation.getChildren().add(pauseAfter);
43.     }
44. }
```

UpgradeTiles

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
UpgradeTiles()	1	0%		n/a	1	1	1	1	1	1
static {...}	100%			n/a	0	1	0	38	0	1
getUpgradeByName(String)	100%		100%		0	3	0	5	0	1
getRandomUpgradeTile()	100%			n/a	0	1	0	2	0	1
getTile(int)	100%			n/a	0	1	0	1	0	1
Total	3 of 150	98%	0 of 4	100%	1	7	1	47	1	5

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UpgradeTiles.java

```

1. package com.example.project.services.shopItems;
2.
3. import com.example.project.models.tiles.UpgradeEffects;
4. import com.example.project.models.tiles.UpgradeTileModel;
5.
6. import java.util.Arrays;
7. import java.util.List;
8. import java.util.Objects;
9. import java.util.Random;
10.
11. /**
12.  * Static class to store all the possible upgrade tiles available in the game.
13. */
14. public class UpgradeTiles {
15.
16.     private static final List<UpgradeTileModel> upgradeTiles = Arrays.asList(
17.         new UpgradeTileModel.UpgradeBuilder()
18.             .name("Grandma's Glasses")
19.             .description("Add +2 to the score multiplier for every identical pair of letters next to each other.")
20.             .imagePath("/com/example/project/upgradeTileImages/GrandmasGlasses_small.png")
21.             .cost(2)
22.             .upgradeEffect(UpgradeEffects::glassesEffect)
23.             .build(),
24.
25.         new UpgradeTileModel.UpgradeBuilder()
26.             .name("Loaded Dice")
27.             .description("Value is doubled for a random letter in your word.")
28.             .imagePath("/com/example/project/upgradeTileImages/LoadedDice_small.png")
29.             .cost(2)
30.             .upgradeEffect(UpgradeEffects::diceEffect)
31.             .build(),
32.
33.         new UpgradeTileModel.UpgradeBuilder()
34.             .name("Lucky Coin")
35.             .description("20% Chance your total word score is doubled.")
36.             .imagePath("/com/example/project/upgradeTileImages/LuckyCoin_small.png")
37.             .cost(2)
38.             .upgradeEffect(UpgradeEffects::coinEffect)
39.             .build(),
40.
41.         new UpgradeTileModel.UpgradeBuilder()
42.             .name("Compact Mirror")
43.             .description("Whenever a palindrome is played, double the word's base score. (A palindrome is a word that is spelt the same backwards as forwards, e.g. LEVEL.)")
44.             .imagePath("/com/example/project/upgradeTileImages/CompactMirror.png")
45.             .cost(2)
46.             .upgradeEffect(UpgradeEffects::mirrorEffect)
47.             .build(),
48.
49.         new UpgradeTileModel.UpgradeBuilder()
50.             .name("Friendship Bracelet")
51.             .description("Add +1 to the score multiplier for every consecutive letter in alphabetical order.")
52.             .imagePath("/com/example/project/upgradeTileImages/FriendshipBracelet.png")
53.             .cost(2)
54.             .upgradeEffect(UpgradeEffects::braceletEffect)
55.             .build(),
56.
57.         new UpgradeTileModel.UpgradeBuilder()
58.             .name("Lost Button")
59.             .description("Add +5 to the base word score for every X on the tile rack.")
60.             .imagePath("/com/example/project/upgradeTileImages/LostButton.png")
61.             .cost(2)
62.             .upgradeEffect(UpgradeEffects::buttonEffect)
63.             .build()
64.     );
65.
66.     protected static final Random random = new Random();
67.
68. /**
69.  * Gets random upgrade tile.
70.  * @return returns upgrade tile.
71. */
72. public static UpgradeTileModel getRandomUpgradeTile() {
73.     var randomNum = random.nextInt(0, upgradeTiles.size());
74.     return upgradeTiles.get(randomNum);
75. }
76.
77. protected static UpgradeTileModel getTile(int index){
78.     return upgradeTiles.get(index);
79. }
80.
81. /**
82.  * Gets upgrade by name.
83.  * @param name name.
84.  * @return tile.
85. */
86. public static UpgradeTileModel getUpgradeByName(String name)
87. {
88.     for (UpgradeTileModel item : upgradeTiles)
89.     {
90.         if (Objects.equals(item.getName(), name)){
91.             return item;
92.         }
93.     }
94.
95.     return null;
96. }
97.
98.
99.

```

com.example.project.services.shopItems

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
G UpgradeTiles	 98%	 100%			1	7	1	47	1	5	0	1
Total	3 of 150	98%	0 of 4	100%	1	7	1	47	1	5	0	1

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com.example.project.services.shopItems

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
UpgradeTiles.java	 98%	100%	 100%	100%	1	7	1	47	1	5	0	1
Total	3 of 150	98%	0 of 4	100%	1	7	1	47	1	5	0	1

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GameMusicPlayer

Element	Missed Instructions Cov.	Missed Branches Cov.	Missed Cxtys	Missed Lines	Missed Methods
GameMusicPlayer()	100%	n/a	0 1	0 2	0 1
playGameMusicLoop()	100%	n/a	0 1	0 2	0 1
Total	0 of 10	100%	0 of 0	n/a	0 2

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GameMusicPlayer.java

```
1. package com.example.project.services.sound;
2.
3. import javax.sound.sampled.*;
4.
5. /**
6.  * Plays the game music track on repeat.
7. */
8. public class GameMusicPlayer extends GameSoundPlayer
9. {
10.     private static final String clipPath = "/com/example/project/Sounds/puzzleMusic_converted.wav";
11.
12.     /**
13.      * Create new instance of game music player.
14.      */
15.     public GameMusicPlayer()
16.     {
17.         super(clipPath, -3);
18.     }
19.
20.     /**
21.      * play game music loop continuously.
22.      */
23.     public void playGameMusicLoop()
24.     {
25.         clip.loop(Clip.LOOP_CONTINUOUSLY);
26.     }
27. }
```

GameSoundPlayer

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
convertFile(String)		100%		100%	0	2	0	21	0	1
GameSoundPlayer(String, Logger, float)		100%		n/a	0	1	0	8	0	1
GameSoundPlayer(String, Logger)		100%		n/a	0	1	0	6	0	1
GameSoundPlayer(String)		100%		n/a	0	1	0	5	0	1
GameSoundPlayer(String, float)		100%		n/a	0	1	0	4	0	1
changeVolume(float)		100%		n/a	0	1	0	3	0	1
replay()		100%		n/a	0	1	0	3	0	1
unMute()		100%		n/a	0	1	0	2	0	1
mute()		100%		n/a	0	1	0	2	0	1
Total	0 of 174	100%	0 of 2	100%	0	10	0	50	0	9

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GameSoundPlayer.java

```
1. package com.example.project.services.sound;
2.
3. import com.example.project.services.Logger;
4.
5. import javax.sound.sampled.*;
6. import java.io.BufferedInputStream;
7. import java.io.IOException;
8. import java.io.InputStream;
9.
10.
11. /**
12.  * plays an audio clip as a sound effect for the game.
13. */
14. public class GameSoundPlayer
15. {
16.     private Logger logger = new Logger();
17.     protected final Clip clip;
18.     private float defaultGain = 0f;
19.
20.     /**
21.      * creates a new instance of GameSoundPlayer
22.      * @param filePath filepath to sound.
23.     */
24.     public GameSoundPlayer(String filePath)
25.     {
26.         clip = convertFile(filePath);
27.     }
28.
29.     protected GameSoundPlayer(String filePath, Logger logger)
30.     {
31.         this.logger = logger;
32.         clip = convertFile(filePath);
33.     }
34.
35.     protected GameSoundPlayer(String filePath, Logger logger, float gainAmount)
36.     {
37.         this.logger = logger;
38.         clip = convertFile(filePath);
39.         defaultGain = gainAmount;
40.         changeVolume(gainAmount);
41.     }
42.
43.     /**
44.      * creates a new instance of GameSoundPlayer
45.      * @param filePath filepath to sound.
46.      * @param gainAmount volume to set the clip at
47.     */
48.     public GameSoundPlayer(String filePath, float gainAmount)
49.     {
50.         this(filePath);
51.         defaultGain = gainAmount;
52.         changeVolume(gainAmount);
53.     }
54.
55.     /**
56.      * Reset clip and then play.
57.     */
58.     public void replay() {
59.         clip.setFramePosition(0);
60.         clip.start();
61.     }
62.
63.     /**
64.      * Change the current clips volume. -80f muted 0f is normal volume.
65.      * @param vol volume.
66.     */
67.     private void changeVolume(float vol)
68.     {
69.         FloatControl volumeControl = (FloatControl) clip.getControl(FloatControl.Type.MASTER_GAIN);
70.         volumeControl.setValue(vol);
71.     }
72.
73.     /**
74.      * set clip volume to mute.
75.     */
76.     public void mute()
77.     {
78.         changeVolume(-80f);
```

```

79. }
80.
81. /**
82. * Set clip to its default volume.
83. */
84. public void unMute(){
85.     changeVolume(defaultGain);
86. }
87.
88. /**
89. * File must be in a specific format for javax.sound.samples library. :(
90. * @param filePath file location.
91. * @return returns clip in correct format.
92. */
93. private Clip convertFile(String filePath) {
94.     Clip convertedClip;
95.
96.     InputStream resourceStream = GameMusicPlayer.class.getResourceAsStream(filePath);
97.     if (resourceStream == null)
98.     {
99.         var errorMessage = String.format("Sound file not found. No sound file at %s", filePath);
100.        this.logger.logError(errorMessage);
101.        throw new IllegalArgumentException(errorMessage);
102.    }
103.
104.    try {
105.        BufferedInputStream bufferedStream = new BufferedInputStream(resourceStream);
106.        AudioInputStream originalStream = AudioSystem.getAudioInputStream(bufferedStream);
107.
108.        AudioFormat targetFormat = new AudioFormat(
109.            AudioFormat.Encoding.PCM_SIGNED,
110.            44100.0f, 16, 2, 4, 44100.0f, false
111.        );
112.
113.        AudioInputStream convertedStream = AudioSystem.getAudioInputStream(targetFormat, originalStream);
114.
115.        convertedClip = AudioSystem.getClip();
116.        convertedClip.open(convertedStream);
117.
118.        convertedStream.close();
119.        originalStream.close();
120.        bufferedStream.close();
121.        resourceStream.close();
122.    }
123.    catch (UnsupportedAudioFileException | IOException | LineUnavailableException e)
124.    {
125.        var message = "Error loading sound file: " + e.getMessage();
126.        this.logger.logError(message);
127.        throw new IllegalArgumentException(message);
128.    }
129.
130.    return convertedClip;
131. }
132. }

```

com.example.project.services.sound

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C GameSoundPlayer	100%	100%	100%	n/a	0	10	0	50	0	9	0	1
C GameMusicPlayer	100%	100%		n/a	0	2	0	4	0	2	0	1
Total	0 of 184	100%	0 of 2	100%	0	12	0	54	0	11	0	2

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com.example.project.services.sound

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
GameSoundPlayer.java	100%	100%	100%	n/a	0	10	0	50	0	9	0	1
GameMusicPlayer.java	100%	100%	n/a	n/a	0	2	0	4	0	2	0	1
Total	0 of 184	100%	0 of 2	100%	0	12	0	54	0	11	0	2

Created with JaCoCo 0.8.12.202403310830

com.example.project.controllers.gameScreens.animations

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C LevelScoreSequence		0%		0%	3	3	19	19	2	2	1	1
C TextEmphasisAnimation		0%		n/a	3	3	16	16	3	3	1	1
C ConfettiAnimation		0%		0%	3	3	15	15	2	2	1	1
C ScoreTimeline		0%		0%	5	5	17	17	4	4	1	1
C InfiniteFloatingAnimation		0%		n/a	4	4	14	14	4	4	1	1
C AnimationWrapper		0%		n/a	4	4	8	8	4	4	1	1
Total	416 of 416	0%	6 of 6	0%	22	22	89	89	19	19	6	6

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DictionaryDAO

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
getWordDefinition(String)	100%	100%	100%	100%	0	3	0	20	0	1
isWordInDictionary(String)	100%	100%	n/a	n/a	0	1	0	9	0	1
DictionaryDAO()	100%	100%	n/a	n/a	0	1	0	4	0	1
DictionaryDAO(Connection, Logger)	100%	100%	n/a	n/a	0	1	0	4	0	1
Total	0 of 137	100%	0 of 4	100%	0	6	0	37	0	4

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DictionaryDAO.java

```
1. package com.example.project.services.sqlite.dAOs;
2.
3. import com.example.project.services.Logger;
4. import com.example.project.services.SQLiteDictionaryConnection;
5.
6. import java.sql.*;
7. import java.util.ArrayList;
8. import java.util.List;
9.
10. /**
11. * The SQLite Dictionary. The connection returned from SQLiteDictionaryConnection().getInstance() is always the same.
12. */
13. public class DictionaryDAO
14. {
15.     private final Connection connection;
16.     private final Logger logger;
17.
18.     /**
19.      * Constructor for this class SQLLiteDictionary.
20.     */
21.     public DictionaryDAO()
22.     {
23.         this.connection = new SQLiteDictionaryConnection().getInstance();
24.         this.logger = new Logger();
25.     }
26.
27.     /**
28.      * constructor with injection for tests.
29.      * @param connection mock connection.
30.      * @param logger a mock logger.
31.     */
32.     public DictionaryDAO(Connection connection, Logger logger) {
33.         this.connection = connection;
34.         this.logger = logger;
35.     }
36.
37.     /**
38.      * gets the words definition.
39.      * @param wordToFind Word to get definition of.
40.      * @return Returns the definition.
41.     */
42.     public String getWordDefinition(String wordToFind)
43.     {
44.         List<String> definitions = new ArrayList<>();
45.         try
46.         {
47.             wordToFind = wordToFind.trim();
48.             PreparedStatement query = connection.prepareStatement("SELECT wordtype, definition FROM entries WHERE word = ? COLLATE NOCASE");
49.             query.setString(1, wordToFind);
50.             ResultSet result = query.executeQuery();
51.
52.             while (result.next())
53.             {
54.                 definitions.add("Wordtype: " +
55.                     result.getString("wordtype") +
56.                     System.lineSeparator() +
57.                     "Definition: " +
58.                     result.getString("definition"));
59.             }
60.             if (definitions.isEmpty())
61.             {
62.                 this.logger.LogError(String.format("No rows in database for word: %s", wordToFind));
63.                 definitions.add("No Definition");
64.             }
65.         }
66.         catch (SQLException e)
67.         {
68.             this.logger.LogError(String.format("Definition not found for word: %s", wordToFind));
69.             this.logger.LogError("Error message: " + e.getMessage());
70.             definitions.add("No Definition");
71.         }
72.         String doubleLineSeparator = System.lineSeparator() + System.lineSeparator();
73.         return String.join(doubleLineSeparator, definitions);
74.     }
75.
76.     /**
77.      * gets if word is in dictionary.
78.      * @param wordToCheck Word to check.
79.      * @return returns the boolean value indicating whether the word exists in our database.
80.     */
81.     public boolean isWordInDictionary(String wordToCheck)
82.     {
83.         wordToCheck = wordToCheck.toLowerCase();
84.
85.         try
86.         {
87.             PreparedStatement doesWordExistQuery = connection.prepareStatement("SELECT 1 FROM entries WHERE word = ? LIMIT 1");
88.             doesWordExistQuery.setString(1, wordToCheck);
89.             ResultSet doesWordExistResult = doesWordExistQuery.executeQuery();
90.             return doesWordExistResult.next();
91.         }
```

```
91.     }
92.     catch (SQLException e)
93.     {
94.         this.logger.logError("word not found due to exception");
95.         this.logger.logError("Error message:" + e.getMessage());
96.     }
97.
98.     return false;
99. }
100.
```

UsersDAO

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
● hasSaveData(User)		100%		100%	0	5	0	16	0	1
● getSessionDataJson(String)		100%		100%	0	2	0	14	0	1
● saveSessionData(String, String)		100%		100%	0	2	0	14	0	1
● addUser(User)		100%		n/a	0	1	0	12	0	1
● queryByUsername(String)		100%		100%	0	2	0	13	0	1
● UsersDAO()		100%		n/a	0	1	0	5	0	1
● UsersDAO(Connection, Logger)		100%		n/a	0	1	0	5	0	1
● UsersDAO(PasswordHasher, Connection, Logger)		100%		n/a	0	1	0	3	0	1
● doesUserExist(String)		100%		100%	0	2	0	1	0	1
● getUser(String)		100%		n/a	0	1	0	1	0	1
Total	0 of 432	100%	0 of 16	100%	0	18	0	83	0	10

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UsersDAO.java

```
1. package com.example.project.services.sqlite.dAOs;
2.
3. import com.example.project.services.Logger;
4. import com.example.project.services.PasswordHasher;
5. import com.example.project.models.User;
6. import com.example.project.services.sqlite.SQLiteUsersConnection;
7.
8. import java.sql.*;
9.
10. /**
11. * SQLite Users database. with a table `users` 2 columns. 'username', 'password'. Which are both defined as unique
12. * not null Strings in sqlite.
13. */
14. public class UsersDAO
15. {
16.     private final Logger logger;
17.     private final Connection connection;
18.     PasswordHasher passwordHasher = new PasswordHasher();
19.
20.     /**
21.      * Constructor for this class SQLiteDictionary.
22.      */
23.     public UsersDAO()
24.     {
25.         this.logger = new Logger();
26.         this.connection = new SQLiteUsersConnection().getInstance();
27.     }
28.
29.     protected UsersDAO(PasswordHasher hasher, Connection connection, Logger logger)
30.     {
31.         this(connection, logger);
32.         this.passwordHasher = hasher;
33.     }
34.
35.     /**
36.      * Constructor with injection for unit tests.
37.      * @param connection Connection
38.      * @param logger logger.
39.      */
40.     public UsersDAO(Connection connection, Logger logger)
41.     {
42.         this.logger = logger;
43.         this.connection = connection;
44.     }
45.
46.     /**
47.      * Adds user to the user.db.
48.      * password will be hashed before storing to ensure greater security (no plain text passwords)
49.      * @param user user to add.
50.      */
51.     public void addUser(User user)
52.     {
53.         String sql = "INSERT INTO users (username, password, highscore) VALUES (?, ?, ?)";
54.
55.         try
56.         {
57.             PreparedStatement query = this.connection.prepareStatement(sql);
58.             query.setString(1, user.getUsername());
59.
60.             query.setString(2, this.passwordHasher.hashPassword(user.getPassword())); //hashes password before storing
61.
62.             query.setInt(3, user.getHighscore());
63.             query.executeUpdate();
64.             this.logger.logMessage(String.format("added user: %s to the database", user.getUsername()));
65.         }
66.         catch (SQLException e)
67.         {
68.             this.logger.LogError(String.format("Failed to add user: %s to the database", user.getUsername()));
69.             throw new RuntimeException(String.format("Failed to add user to the database. SQL Error details: %s", e.getMessage()));
70.         }
71.     }
72.
73.     /**
74.      * @param username username
75.      * @return returns bool indicating whether use is in database already.
76.      */
77.     public boolean doesUserExist(String username)
78.     {
79.         return queryByUsername(username) != null;
80.     }
81.
82.     private User queryByUsername(String username)
83.     {
84.         String sql = "SELECT username, password, highscore FROM users WHERE username = ?";
```

```

85.
86.     try {
87.         PreparedStatement statement = connection.prepareStatement(sql);
88.         statement.setString(1, username);
89.         ResultSet result = statement.executeQuery();
90.
91.         if (!result.next()) { // if user does not exist in database return null.
92.             return null;
93.         }
94.
95.         int highscore = result.getInt("highscore");
96.         String usersPassword = result.getString("password");
97.         return new User(username, usersPassword, highscore);
98.     }
99.     catch (SQLException e) {
100.         {
101.             this.logger.logError(String.format("SQL Exception. Failed to get user username: %s", username));
102.             this.logger.logError(String.format("%s", e.getMessage()));
103.             throw new RuntimeException("Failed to get user by username", e);
104.         }
105.     }
106.
107. /**
108. * @param username username.
109. * @return returns user with matching username.
110. */
111. public User getUser(String username)
112. {
113.     return queryByUsername(username);
114. }
115.
116. /**
117. * Saves the session data as JSON for a specific user.
118. * @param username the username to save data for
119. * @param sessionJson the JSON string containing session data
120. */
121. public void saveSessionData(String username, String sessionJson)
122. {
123.     String sql = "UPDATE users SET session_data = ? WHERE username = ?";
124.
125.     try {
126.         PreparedStatement statement = connection.prepareStatement(sql);
127.         statement.setString(1, sessionJson);
128.         statement.setString(2, username);
129.
130.         int rowsAffected = statement.executeUpdate();
131.         if (rowsAffected > 0) {
132.             logger.logMessage(String.format("Saved session data for user: %s", username));
133.         } else {
134.             logger.logError(String.format("No user found with username: %s", username));
135.         }
136.     } catch (SQLException e) {
137.         logger.logError(String.format("Failed to save session data for user: %s", username));
138.         logger.logError(String.format("SQL Error: %s", e.getMessage()));
139.         throw new RuntimeException("Failed to save session data", e);
140.     }
141. }
142.
143. /**
144. * Get session saved data.
145. * @param username user.
146. * @return returns string.
147. */
148. public String getSessionDataJson(String username) {
149.     String sql = "SELECT session_data FROM users WHERE username = ?";
150.
151.     try {
152.         PreparedStatement statement = connection.prepareStatement(sql);
153.         statement.setString(1, username);
154.         ResultSet result = statement.executeQuery();
155.
156.         if (result.next()) {
157.             String sessionData = result.getString("session_data");
158.             logger.logMessage(String.format("Loaded session data for user: %s", username));
159.             return sessionData;
160.         } else {
161.             logger.logMessage(String.format("No session data found for user: %s", username));
162.             return null;
163.         }
164.
165.     } catch (SQLException e) {
166.         logger.logError(String.format("Failed to load session data for user: %s", username));
167.         logger.logError(String.format("SQL Error: %s", e.getMessage()));
168.         throw new RuntimeException("Failed to load session data", e);
169.     }
170. }
171.
172. /**
173. * Does user have save data.
174. * @param user user.

```

```
175.     * @return returns true if save data exists.
176.     */
177.    public boolean hasSaveData(User user)
178.    {
179.        String sql = "SELECT session_data FROM users WHERE username = ?";
180.
181.        try {
182.            PreparedStatement statement = connection.prepareStatement(sql);
183.            statement.setString(1, user.getUsername());
184.            ResultSet result = statement.executeQuery();
185.
186.            if (result.next()) {
187.                String sessionData = result.getString("session_data");
188.                // Check if session_data is not null and not empty
189.                boolean hasSave = sessionData != null && !sessionData.trim().isEmpty();
190.                logger.logMessage(String.format("User %s %s save data",
191.                    user.getUsername(), hasSave ? "has" : "does not have"));
192.                return hasSave;
193.            } else {
194.                logger.logError(String.format("User not found: %s", user.getUsername()));
195.                return false;
196.            }
197.
198.        } catch (SQLException e) {
199.            logger.logError(String.format("Failed to check save data for user: %s", user.getUsername()));
200.            logger.logError(String.format("SQL Error: %s", e.getMessage()));
201.            return false; // Return false instead of throwing to handle missing column gracefully
202.        }
203.    }
204.}
```

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com.example.project.services.sqlite.dAOs

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed Cxty	Missed Lines	Missed Methods	Missed Classes
C UsersDAO	100%	100%	100%	100%	0 18	0 83	0 10	0 1
C DictionaryDAO	100%	100%	100%	100%	0 6	0 37	0 4	0 1
Total	0 of 569	100%	0 of 20	100%	0 24	0 120	0 14	0 2

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com.example.project.services.sqlite.dAOs

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
UsersDAO.java	100%	100%	100%	100%	0	18	0	83	0	10	0	1
DictionaryDAO.java	100%	100%	100%	100%	0	6	0	37	0	4	0	1
Total	0 of 569	100%	0 of 20	100%	0	24	0	120	0	14	0	2

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SQLiteConnection

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	
getInstance()		100%			100%	0	3	0	7	0	1
createConnection()		100%		n/a	0	1	0	4	0	1	
static {...}		100%		n/a	0	1	0	1	0	1	
SQLiteConnection()		100%		n/a	0	1	0	1	0	1	
Total	0 of 59	100%	0 of 4	100%	0	6	0	13	0	4	

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SQLiteConnection.java

```
1. package com.example.project.services.sqlite;
2.
3. import com.example.project.services.Logger;
4.
5. import java.nio.file.Files;
6. import java.nio.file.Paths;
7. import java.sql.Connection;
8. import java.sql.DriverManager;
9. import java.sql.SQLException;
10.
11. /**
12. * Abstract SQLiteConnection class.
13. */
14. public abstract class SQLiteConnection
15. {
16.     private static final Logger logger = new Logger();
17.
18.     protected abstract Connection getSQLiteInstance();
19.
20.     protected abstract void setSQLiteInstance(Connection newInstance);
21.
22.     /**
23.      * Each subclass provides its database path.
24.      */
25.     protected abstract String getDatabasePath();
26.
27.     /**
28.      * Gets the database connection from an existing readonly resource .db
29.      * @return returns the connection is already made or creates new one.
30.      */
31.     public Connection getInstance()
32.     {
33.         if (getSQLiteInstance() != null){
34.             return getSQLiteInstance();
35.         }
36.
37.         if (!Files.exists(Paths.get(getDatabasePath())))
38.         {
39.             var errorMessage = String.format("Database connection failed: Database file not found: %s", getDatabasePath());
40.             throw new RuntimeException(errorMessage);
41.         }
42.
43.         setSQLiteInstance(createConnection());
44.         return getSQLiteInstance();
45.     }
46.
47.     private Connection createConnection()
48.     {
49.         String dbUrl = "jdbc:sqlite:" + getDatabasePath();
50.         try
51.         {
52.             return DriverManager.getConnection(dbUrl);
53.         } catch (SQLException sqlEx)
54.         {
55.             throw new RuntimeException("Cannot initialize connection", sqlEx);
56.         }
57.     }
58. }
```

SQLiteDictionaryConnection

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
SQLiteDictionaryConnection()	100%		n/a		0	1	0	1	0	1
setSQLiteInstance(Connection)	100%		n/a		0	1	0	2	0	1
getSQLiteInstance()	100%		n/a		0	1	0	1	0	1
getDatabasePath()	100%		n/a		0	1	0	1	0	1
Total	0 of 10	100%	0 of 0	n/a	0	4	0	5	0	4

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SQLiteDictionaryConnection.java

```
1. package com.example.project.services.sqlite;
2.
3. import java.sql.Connection;
4.
5. /**
6. * Connection to the dictionary.db
7. */
8. public class SQLiteDictionaryConnection extends SQLiteConnection
9. {
10.     private static Connection instance;
11.
12.     @Override
13.     protected Connection getSQLiteInstance() {
14.         return instance;
15.     }
16.
17.     @Override
18.     protected void setSQLiteInstance(Connection newInstance) {
19.         instance = newInstance;
20.     }
21.
22.     @Override
23.     protected String getDatabasePath()
24.     {
25.         return "databases/English-Dictionary-Open-Source-main/sqlite3/dictionary.db";
26.     }
27. }
```

com.example.project.controllers.gameScreens.animations

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
LevelScoreSequence.java		0%		0%	3	3	19	19	2	2	1	1
TextEmphasisAnimation.java		0%		n/a	3	3	16	16	3	3	1	1
ConfettiAnimation.java		0%		0%	3	3	15	15	2	2	1	1
ScoreTimeline.java		0%		0%	5	5	17	17	4	4	1	1
InfiniteFloatingAnimation.java		0%		n/a	4	4	14	14	4	4	1	1
AnimationWrapper.java		0%		n/a	4	4	8	8	4	4	1	1
Total	416 of 416	0%	6 of 6	0%	22	22	89	89	19	19	6	6

SQLiteUsersConnection

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
SQLiteUsersConnection()		100%		n/a	0	1	0	1	0	1
setSQLiteInstance(Connection)		100%		n/a	0	1	0	2	0	1
getSQLiteInstance()		100%		n/a	0	1	0	1	0	1
getDatabasePath()		100%		n/a	0	1	0	1	0	1
Total	0 of 10	100%	0 of 0	n/a	0	4	0	5	0	4

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SQLiteUsersConnection.java

```
1. package com.example.project.services.sqlite;
2.
3. import java.sql.Connection;
4.
5. /**
6. * Connection to the users.db
7. */
8. public class SQLiteUsersConnection extends SQLiteConnection
9. {
10.     private static Connection instance;
11.
12.     @Override
13.     protected Connection getSQLiteInstance() {
14.         return instance;
15.     }
16.
17.     @Override
18.     protected void setSQLiteInstance(Connection newInstance) {
19.         instance = newInstance;
20.     }
21.
22.     @Override
23.     protected String getDatabasePath()
24.     {
25.         return "databases/users.db";
26.     }
27. }
```

com.example.project.services.sqlite

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxtx	Missed	Lines	Missed	Methods	Missed	Classes
C SQLiteConnection	100%	100%	100%	n/a	0	6	0	13	0	4	0	1
C SQLiteUsersConnection	100%	n/a	100%	n/a	0	4	0	5	0	4	0	1
C SQLiteDictionaryConnection	100%	n/a	100%	n/a	0	4	0	5	0	4	0	1
Total	0 of 79	100%	0 of 4	100%	0	14	0	23	0	12	0	3

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com.example.project.services.sqlite

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
SQLiteConnection.java	100%	100%	100%	n/a	0	6	0	13	0	4	0	1
SQLiteDictionaryConnection.java	100%	100%	n/a	n/a	0	4	0	5	0	4	0	1
SQLiteUsersConnection.java	100%	100%	n/a	n/a	0	4	0	5	0	4	0	1
Total	0 of 79	100%	0 of 4	100%	0	14	0	23	0	12	0	3

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FXMLPageLoader

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
load(String)	100%		n/a		0	1	0	2	0	1
FXMLPageLoader()	100%		n/a		0	1	0	3	0	1
getController()	100%		n/a		0	1	0	1	0	1
Total	0 of 26	100%	0 of 0	n/a	0	3	0	6	0	3

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FXMLPageLoader.java

```
1. package com.example.project.services;
2.
3. import javafx.fxml.FXMLLoader;
4. import javafx.scene.Parent;
5.
6. import java.io.IOException;
7.
8. /**
9. * FXML Loader wrapper class for the project to load the game screen FXML pages.
10.*/
11. public class FXMLPageLoader implements PageLoader
12. {
13.     private FXMLLoader loader;
14.
15.     /**
16.      * constructor.
17.     */
18.     public FXMLPageLoader() {
19.         this.loader = new FXMLLoader();
20.     }
21.
22.     @Override
23.     public Parent load(String fxmlPath) throws IOException
24.     {
25.         this.loader = new FXMLLoader(this.getClass().getResource(fxmlPath));
26.         return loader.load();
27.     }
28.
29.     @Override
30.     public <T> T getController() {
31.         return loader.getController();
32.     }
33. }
```

GameScene

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
static {...}	100%			n/a	0	1	0	6	0	1
Total	0 of 33	100%	0 of 0	n/a	0	1	0	6	0	1

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GameScene.java

```
1. package com.example.project.services;
2.
3. /**
4.  * Game Scenes enum.
5. */
6. public enum GameScene
7. {
8.     /**
9.      * Login Screen.
10.     */
11.    LOGIN,
12.
13.    /**
14.     * Main Menu Screen.
15.     */
16.    MAINMENU,
17.
18.    /**
19.     * Daily Reward Spinner Screen.
20.     */
21.    DAILY_REWARD,
22.
23.    /**
24.     * Level Screen
25.     */
26.    LEVEL,
27.
28.    /**
29.     * Shop screen.
30.     */
31.    SHOP,
32. }
```

Logger

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
Logger(ByteArrayOutputStream, ByteArrayOutputStream)		100%	n/a	0	1	0	12	0	1	
Logger()		100%	n/a	0	1	0	9	0	1	
logWithCapture(String, PrintStream, PrintStream)		100%		100%	0	2	0	4	0	1
Logger(ByteArrayOutputStream, ByteArrayOutputStream, PrintStream, PrintStream)		100%	n/a	0	1	0	4	0	1	
logMessage(String)		100%	n/a	0	1	0	2	0	1	
logError(String)		100%	n/a	0	1	0	2	0	1	
setPrintToConsole(boolean)		100%	n/a	0	1	0	2	0	1	
getErrorLogs()		100%	n/a	0	1	0	1	0	1	
getLogs()		100%	n/a	0	1	0	1	0	1	
clearLogs()		100%	n/a	0	1	0	2	0	1	
Total	0 of 145	100%	0 of 2	100%	0	11	0	36	0	10

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Logger.java

```
1. package com.example.project.services;
2.
3. import java.io.ByteArrayOutputStream;
4. import java.io.PrintStream;
5.
6. /**
7.  * com.example.project.services.Logger for Application and to show up in test and build CI workflow.
8. */
9. public class Logger
10. {
11.     private PrintStream consoleErrorStream;
12.     private final PrintStream captureErrorStream;
13.     private ByteArrayOutputStream capturedErrorLogs = new ByteArrayOutputStream();
14.
15.     private PrintStream consoleStdOutStream;
16.     private final PrintStream captureStdOutStream;
17.     private ByteArrayOutputStream capturedStdOutLogs = new ByteArrayOutputStream();
18.
19.     private boolean printToConsole = true;
20.
21.     /**
22.      * Default constructor writes to console does not capture. For the project files. Use below for unit tests.
23.      */
24.     public Logger()
25.     {
26.         this.consoleErrorStream = System.err;
27.         this.captureErrorStream = new PrintStream(capturedErrorLogs);
28.
29.         this.consoleStdOutStream = System.out;
30.         this.captureStdOutStream = new PrintStream(capturedStdOutLogs);
31.     }
32.
33.     /**
34.      * Constructor for unit tests. Logger with constructor to input the byte array output stream to write to. (for mocking a log to check get methods.)
35.      * @param capturedErrStream byte array to store error logs.
36.      * @param capturedOutStream byte array to store standard output logs.
37.      */
38.     public Logger(ByteArrayOutputStream capturedErrStream, ByteArrayOutputStream capturedOutStream) {
39.         this.setPrintToConsole(false);
40.         this.consoleErrorStream = System.err;
41.         this.capturedErrorLogs = capturedErrStream;
42.         this.captureErrorStream = new PrintStream(this.capturedErrorLogs);
43.
44.         this.consoleStdOutStream = System.out;
45.         this.capturedStdOutLogs = capturedOutStream;
46.         this.captureStdOutStream = new PrintStream(this.capturedStdOutLogs);
47.     }
48.
49.     protected Logger(ByteArrayOutputStream capturedErrStream, ByteArrayOutputStream capturedOutStream, PrintStream mockRealErrOutput, PrintStream mockRealStdOutput)
50.     {
51.         this(capturedErrStream, capturedOutStream);
52.         this.consoleErrorStream = mockRealErrOutput;
53.         this.consoleStdOutStream = mockRealStdOutput;
54.     }
55.
56.     /**
57.      * @param value if this logger will also print to the console.
58.      */
59.     public void setPrintToConsole(boolean value){
60.         this.printToConsole = value;
61.     }
62.
63.     /**
64.      * @return Gets the error log messages.
65.      */
66.     public String getErrorLogs()
67.     {
68.         return this.capturedErrorLogs.toString();
69.     }
70.
71.
72.     /**
73.      * @return returns the standard log messages.
74.      */
75.     public String getLogs(){ return this.capturedStdOutLogs.toString(); }
76.
77.     /**
78.      * Logs an error message to standard error. And adds a newline.
79.      * <p>
80.      * The message can include format specifiers like in {@link String#format(String, Object...)}.
81.      *
82.      * @param message the error message format string (e.g., "Failed to connect to %s")
83.      */
84.     public void logError(String message)
85.     {
86.         this.logWithCapture(message, captureErrorStream, consoleErrorStream);
87.     }
88.
89.     /**
90.      * Clears captured logs use in tests teardown.
91.      */
92.     public void clearLogs() {
93.         capturedErrorLogs.reset();
94.     }
95.
96.     /**
97.      * Log message to System.out.
98.      * @param message message.
99.      */
100.    public void logMessage(String message)
101.    {
102.        this.logWithCapture(String.format(message), captureStdOutStream, consoleStdOutStream);
103.    }
104.
105.    private synchronized void logWithCapture(String formattedMessage, PrintStream captureStream, PrintStream consoleStream)
106.    {
```

```
107.     captureStream.printf(formattedMessage + "%n"); // capture in memory for tests to look at.
108.     ◆ if (printToConsole)
109.     {
110.         consoleStream.printf(formattedMessage + "%n"); // console output
111.     }
112. }
113. }
```

DailyRewardController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
onSpinButtonClicked()		0%		0%	2	2	11	11	1	1
showReward(DailyRewardType)		0%		0%	3	3	10	10	1	1
onSceneChangedToThis()		0%		0%	2	2	7	7	1	1
setup(Session, SceneManager)		0%		n/a	1	1	3	3	1	1
lambda\$onSpinButtonClicked\$0(ActionEvent)		0%		n/a	1	1	4	4	1	1
DailyRewardController()		0%		n/a	1	1	2	2	1	1
lambda\$showReward\$1(ActionEvent)		0%		n/a	1	1	1	1	1	1
Total	142 of 142	0%	7 of 7	0%	11	11	37	37	7	7

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PasswordHasher

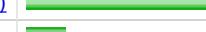
Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
doesPasswordMatch(String, String)	100%		n/a		0	1	0	5	0	1
PasswordHasher()	100%		n/a		0	1	0	3	0	1
PasswordHasher(Logger)	100%		n/a		0	1	0	3	0	1
hashPassword(String)	100%		n/a		0	1	0	1	0	1
Total	0 of 49	100%	0 of 0	n/a	0	4	0	12	0	4

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PasswordHasher.java

```
1. package com.example.project.services;
2. import org.mindrot.jbcrypt.BCrypt;
3.
4.
5. /**
6.  * Hashes passwords.
7. */
8. public class PasswordHasher
9. {
10.     private final Logger logger;
11.
12.     /**
13.      * public constructor.
14.     */
15.     public PasswordHasher(){
16.         this.logger = new Logger();
17.     }
18.
19.     protected PasswordHasher(Logger logger)
20.     {
21.         this.logger = logger;
22.     }
23.
24.     /**
25.      * Hashes a raw password using BCrypt.
26.      *
27.      * @param rawPassword the plain text password
28.      * @return the hashed password string
29.      */
30.     public String hashPassword(String rawPassword) {
31.         return BCrypt.hashpw(rawPassword, BCrypt.gensalt());
32.     }
33.
34.     /**
35.      * Verifies a candidate password against a hashed password.
36.      * @param candidate the plain text password entered by the user
37.      * @param hashed    the hashed password stored in the database
38.      * @return true if the password matches, false otherwise
39.      */
40.     public boolean doesPasswordMatch(String candidate, String hashed)
41.     {
42.         try {
43.             return BCrypt.checkpw(candidate, hashed);
44.         }
45.         catch (IllegalArgumentException e)
46.         {
47.             this.logger.logMessage(String.format("Password check failed, caught exception: %s", e.getMessage()));
48.             this.logger.logMessage(String.format("Cause: %s", e.getCause()));
49.             return false;
50.         }
51.     }
52. }
```

PopupLoader

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
PopupLoader()		0%		n/a	1	1	3	3	1	1
createPopupController(PopupModel)		100%		n/a	0	1	0	7	0	1
PopupLoader(FXMLLoaderPageLoader)		100%		n/a	0	1	0	3	0	1
Total	8 of 41	80%	0 of 0	n/a	1	3	3	13	1	3

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PopupLoader.java

```
1. package com.example.project.services;
2.
3. import com.example.project.controllers.popupControllers.PopupController;
4. import com.example.project.models.popups.PopupModel;
5. import javafx.scene.Parent;
6.
7. import java.io.IOException;
8.
9. /**
10. * class to load the popup and initialize it with a controller
11. */
12. public class PopupLoader
13. {
14.     private final FXMLPageLoader loader;
15.
16.     protected PopupLoader(FXMLPageLoader loader)
17.     {
18.         this.loader = loader;
19.     }
20.
21.     /**
22.      * Constructor.
23.     */
24.     public PopupLoader()
25.     {
26.         this.loader = new FXMLPageLoader();
27.     }
28.
29.     /**
30.      * create popup controller.
31.      * @param popupModel popup object.
32.      * @param <C> class of popup controller.
33.      * @param <P> class of popup.
34.      * @return returns controller of the tile.
35.     */
36.     public <C extends PopupController<P>, P extends PopupModel> C createPopupController(P popupModel)
37.     {
38.         try
39.         {
40.             // In this case not using javafx Popup because of its limitations.
41.             // Might refactor in case we use actual Popups.
42.             String fxmlPath = popupModel.getFXMLPath();
43.             Parent root = this.loader.load(fxmlPath);
44.             C controller = loader.getController();
45.             controller.initialize(popupModel);
46.             return controller;
47.         } catch (IOException e) {
48.             throw new RuntimeException("Failed to create popup controller: " + popupModel.getFXMLPath(), e);
49.         }
50.     }
51. }
```

SVGIcons

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
getCogIcon()	0%		n/a		1	1	4	4	1	1
SVGIcons()	0%		n/a		1	1	1	1	1	1
Total	15 of 15	0%	0 of 0	n/a	2	2	5	5	2	2

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SVGIcons.java

```
1. package com.example.project.services;
2.
3. import javafx.scene.paint.Color;
4. import javafx.scene.shape.SVGPath;
5.
6. /**
7. * a static class to hold some icons for the application.
8. */
9. public class SVGIcons
10. {
11.     private static final String cogIcon = "M19.43 12.98c.04-.32.07-.66.07-1s-.03-.68-.07-1l2.11-1.65c.19-.15.24-.42.12-.64l-2-3.46c-.12-.21-.37-.3-.6-.22l-2.49 1a7.027 7.027 0 00-1.73-1l-.38-2.65A.4";
12.
13.     /**
14.      * gets a cog icon.
15.      * @return icon SVG.
16.     */
17.     public static SVGPath getCogIcon()
18.     {
19.         SVGPath cog = new SVGPath();
20.         cog.setContent(cogIcon);
21.         cog.setFill(Color.GRAY);
22.         return cog;
23.     }
24. }
```

SceneManager

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
getScene()		0%		n/a	1	1	1	1	1	1
SceneManager(RootLayoutController, Map, Map)		100%		n/a	0	1	0	7	0	1
switchScene(GameScene)		100%		n/a	0	1	0	6	0	1
Total	3 of 47	93%	0 of 0	n/a	1	3	1	14	1	3

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SceneManager.java

```
1. package com.example.project.services;
2.
3. import com.example.project.controllers.RootLayoutController;
4. import com.example.project.services.sound.GameSoundPlayer;
5. import javafx.scene.Parent;
6.
7. import java.util.HashMap;
8. import java.util.Map;
9. import com.example.project.controllers.gameScreens.GameScreenController;
10.
11. /**
12.  * Represents the scene manager class.
13. */
14. public class SceneManager
15. {
16.     private final RootLayoutController rootController;
17.     private Map<GameScene, Parent> pages = new HashMap<>();
18.     private Map<GameScene, GameScreenController> controllers = new HashMap<>();
19.     private GameScene currentScene;
20.
21. /**
22.  * Constructor with injection for tests
23.  * @param newRootController root controller
24.  * @param controllersToUse controllers
25.  * @param pagesToUse pages
26. */
27. public SceneManager(RootLayoutController newRootController, Map<GameScene,
28.                     GameScreenController> controllersToUse, Map<GameScene, Parent> pagesToUse)
29. {
30.     rootController = newRootController;
31.     controllers = controllersToUse;
32.     pages = pagesToUse;
33. }
34.
35. /**
36.  * Switch between scenes specify scene type of type from {@link GameScene}.
37.  * @param type scene.
38. */
39. public void switchScene(GameScene type)
40. {
41.     currentScene = type;
42.     Parent page = pages.get(type);
43.     rootController.setContent(page);
44.     GameScreenController controller = controllers.get(type);
45.     controller.onSceneChangedToThis();
46. }
47.
48. /**
49.  * get current scene.
50.  * @return scene.
51. */
52. public GameScene getCurrentScene()
53. {
54.     return currentScene;
55. }
56. }
```

Session

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
load()		0%		0%	7	7	25	25	1	1
Save()		0%		0%	3	3	15	15	1	1
Session()		0%	n/a	n/a	1	1	18	18	1	1
modifyMoney(double)		0%	n/a	n/a	1	1	2	2	1	1
addUpgrade(UpgradeTileModel)		0%	n/a	n/a	1	1	2	2	1	1
hasClaimedRewardToday()		0%	n/a	n/a	1	1	1	1	1	1
resetMoney()		0%	n/a	n/a	1	1	2	2	1	1
setUser(User)		0%	n/a	n/a	1	1	2	2	1	1
getHandSize()		0%	n/a	n/a	1	1	1	1	1	1
getWordWindowSize()		0%	n/a	n/a	1	1	1	1	1	1
setLastRewardDate(LocalDate)		0%	n/a	n/a	1	1	2	2	1	1
getUser()		0%	n/a	n/a	1	1	1	1	1	1
getRedrawWindowSize()		0%	n/a	n/a	1	1	1	1	1	1
Session(int, int, int, ObservableList, User, int, int, int, int, int)		100%	n/a	n/a	0	1	0	24	0	1
updateLevelInfo()		100%	n/a	n/a	0	1	0	4	0	1
resetGame()		100%	n/a	n/a	0	1	0	6	0	1
resetPlaysRedraws()		100%	n/a	n/a	0	1	0	3	0	1
getPlayersUpgradesProperty()		100%	n/a	n/a	0	1	0	1	0	1
getLevelRequirement()		100%	n/a	n/a	0	1	0	1	0	1
getLevelsBeaten()		100%	n/a	n/a	0	1	0	1	0	1
getMoneyProperty()		100%	n/a	n/a	0	1	0	1	0	1
getCurrentPlays()		100%	n/a	n/a	0	1	0	1	0	1
getCurrentRedraws()		100%	n/a	n/a	0	1	0	1	0	1
Total	318 of 488	34%	16 of 16	0%	21	31	61	104	13	23

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Session.java

```

1. package com.example.project.services;
2.
3. import com.example.project.models.User;
4. import com.example.project.models.tiles.UpgradeTileModel;
5. import com.example.project.services.shopItems.UpgradeTiles;
6. import com.example.project.services.sqlite.dAOs.UsersDAO;
7. import com.google.gson.Gson;
8. import com.google.gson.GsonBuilder;
9. import javafx.beans.property.*;
10. import javafx.collections.FXCollections;
11. import javafx.collections.ObservableList;
12. import java.time.LocalDate;
13.
14.
15. /**
16. * Game Session. holds info of the current session.
17. */
18. public class Session
19. {
20.     private Integer handSize = 9;
21.
22.     private Integer wordWindowSize = 9;
23.
24.     private Integer redrawWindowSize = 9;
25.
26.     private final ObservableList<UpgradeTileModel> upgrades = FXCollections.observableArrayList();
27.
28.     private final DoubleProperty money;
29.
30.     private final int initialMoney;
31.
32.     private User loggedInUser;
33.
34.     private int levelsBeaten = 0;
35.
36.     private final int initialLevelRequirement;
37.
38.     private final Logger logger = new Logger();
39.
40.     // initial plays and redraws are used to reset the redraws / plays at start of level. As upgrade effects can change how many plays/redraws you start with.
41.     private int initialRedraws = 4;
42.     private final ReadOnlyIntegerWrapper currentRedraws = new ReadOnlyIntegerWrapper(initialRedraws);
43.     private int initialPlays = 4;
44.     private final ReadOnlyIntegerWrapper currentPlays = new ReadOnlyIntegerWrapper(initialPlays);
45.     private final UsersDAO usersDB = new UsersDAO();
46.
47. /**
48. * points required for the player to score at least to beat the current level.
49. */
50. private final ReadOnlyIntegerWrapper levelRequirement;
51.
52. /**
53. * @return points required for the play to score at least to beat the level.
54. */
55. public ReadOnlyIntegerWrapper getLevelRequirement() {
56.     return levelRequirement;
57. }
58.
59. /**
60. * Constructor for injecting values in for unit test.
61. * @param newHandSize hand size.
62. * @param newWordViewSize word length allowed.
63. * @param newRedrawWindowSize redraw window size.
64. * @param newUpgrades upgrade tiles.
65. * @param newUser user.
66. * @param newMoney money.
67. * @param newLevelsBeaten levels beaten.
68. * @param currentLevelRequirement current level requirement.
69. * @param newFirstLevelsRequirement first level requirement.
70. */
71. protected Session(int newHandSize, int newWordViewSize, int newRedrawWindowSize,
72.                 ObservableList<UpgradeTileModel> newUpgrades, User newUser,
73.                 int newMoney, int newLevelsBeaten,
74.                 int currentLevelRequirement, int newFirstLevelsRequirement, int newInitialMoney)
75. {
76.     initialMoney = newInitialMoney;
77.     money = new ReadOnlyDoubleWrapper(newMoney);
78.     initialLevelRequirement = newFirstLevelsRequirement;
79.     handSize = newHandSize;
80.     wordWindowSize = newWordViewSize;
81.     redrawWindowSize = newRedrawWindowSize;
82.     loggedInUser = newUser;
83.     upgrades.setAll(newUpgrades);
84.     levelsBeaten = newLevelsBeaten;
85.     levelRequirement = new ReadOnlyIntegerWrapper(currentLevelRequirement);
86. }
87.
88. protected int getLevelsBeaten(){
89.     return levelsBeaten;
90. }
91.
92. /**
93. * Default constructor.
94. */
95. public Session()
96. {
97.     initialLevelRequirement = 4;
98.     levelRequirement = new ReadOnlyIntegerWrapper(initialLevelRequirement);
99.     initialMoney = 0;
100.    money = new ReadOnlyDoubleWrapper(initialMoney);
101. }
102.
```

```

103.
104.    /**
105.     * Returns the read-only money property for binding to UI components.
106.     * This allows UI elements to automatically update when the players money changes.
107.     * @return ReadOnlyIntegerProperty representing the player's current money amount
108.    */
109.   public DoubleProperty getMoneyProperty()
110.   {
111.     return money;
112.   }
113.
114.   /**
115.    * Adds an upgrade tile to the player's collection.
116.    * This will automatically update all UI displays bound to the upgrades property.
117.    *
118.    * @param upgrade this upgrades the tile to add it to the players collection
119.    */
120.   public void addUpgrade(UpgradeTileModel upgrade)
121.   {
122.     upgrades.add(upgrade);
123.   }
124.
125.   /**
126.    * Checks if the player already claimed today's reward.
127.    * @return true if already claimed today
128.    */
129.   public boolean hasClaimedRewardToday() {
130.     return LocalDate.now().equals(lastRewardDate);
131.   }
132.
133.   /**
134.    * set new user.
135.    * @param newUser user that logged in.
136.    */
137.   public void setUser(User newUser) {
138.     loggedInUser = newUser;
139.   }
140.
141.   /**
142.    * Returns logged in user.
143.    * @return user.
144.    */
145.   public User getUser(){
146.     return loggedInUser;
147.   }
148.
149.   /**
150.    * gets hand size.
151.    * @return returns number of tiles allowed in hand.
152.    */
153.   public int getHandSize() {
154.     return handSize;
155.   }
156.
157.   /**
158.    * gets word size.
159.    * @return return int word size.
160.    */
161.   public int getWordWindowSize() {
162.     return wordWindowSize;
163.   }
164.
165.   /**
166.    * gets upgrade tile property
167.    * @return upgrade tiles model list
168.    */
169.   public ReadOnlyListProperty<UpgradeTileModel> getPlayersUpgradesProperty() {
170.     return new ReadOnlyListWrapper<>(upgrades);
171.   }
172.
173.   /**
174.    * Increments how many points are required to beat the level.
175.    */
176.   public void updateLevelInfo() {
177.     this.levelsBeaten++;
178.     var current = this.levelRequirement.get();
179.     this.levelRequirement.set(current + (int) Math.pow(2, this.levelsBeaten));
180.   }
181.
182.   /**
183.    * Resets the current session when you lose
184.    */
185.   public void resetGame() {
186.     money.set(initialMoney); // resets the players account to their starting amount
187.     levelsBeaten = 0;
188.     levelRequirement.set(initialLevelRequirement);
189.     upgrades.clear();
190.     resetPlaysRedraws();
191.   }
192.
193.   /**
194.    * gets redraw window size (number of slots)
195.    * @return return int redraw window size.
196.    */
197.   public Integer getRedrawWindowSize() {
198.     return redrawWindowSize;
199.   }
200.
201.   /**
202.    * gets the current plays.
203.    * @return current plays remaining.
204.    */
205.   public ReadOnlyIntegerWrapper getCurrentPlays() {
206.     return currentPlays;
207.   }
208.
209.   /**
210.    * gets the redraws property.
211.    * @return the current redraws.
212.   */

```

```

211. /*
212.  * @return ReadOnlyIntegerWrapper getCurrentRedraws()
213.  */
214. 
215. /**
216.  * Reset the plays and redraws.
217. */
218. 
219. public void resetPlaysRedraws()
220. {
221.     getCurrentRedraws().set(initialRedraws);
222.     getCurrentPlays().set(initialPlays);
223. }
224. 
225. private LocalDate lastRewardDate = null;
226. 
227. /**
228.  * Adds or remove money to the player's balance.
229.  * @param amount amount to add
230. */
231. public void modifyMoney(double amount) {
232.     this.money.set(this.money.get() + amount);
233. }
234. 
235. /**
236.  * Sets the date the daily reward was last claimed.
237.  * @param date LocalDate of the reward claim
238. */
239. public void setLastRewardDate(LocalDate date) {
240.     this.lastRewardDate = date;
241. }
242. 
243. /**
244.  * Resets the player's money to the initial state (e.g. 0).
245. */
246. public void resetMoney() {
247.     this.money.set(0);
248. }
249. 
250. /**
251.  * will save a copy of this session data to local drive.
252. */
253. public void Save()
254. {
255.     SessionData data = new SessionData();
256.     data.money = this.money.get();
257.     data.levelsBeaten = this.levelsBeaten;
258.     data.levelRequirement = this.levelRequirement.get();
259.     data.currentInitialPlays = this.initialPlays;
260.     data.currentInitialRedraws = this.initialRedraws;
261.     data.lastRewardDate = this.lastRewardDate != null ? this.lastRewardDate.toString() : null;
262.     data.username = this.loggedInUser.getUsername();
263. 
264.     for (UpgradeTileModel tile : this.upgrades)
265.     {
266.         data.upgradeNames.add(tile.getName());
267.     }
268. 
269.     Gson gson = new GsonBuilder().setPrettyPrinting().create();
270.     String json = gson.toJson(data);
271.     this.usersDB.saveSessionData(loggedInUser.getUsername(), json);
272. }
273. 
274. /**
275.  * Load logged in users data.
276. */
277. 
278. public void load()
279. {
280.     try {
281.         // Get session data from database
282.         String json = this.usersDB.getSessionDataJson(this.loggedInUser.getUsername());
283. 
284.         // No saved data exists
285.         if (json == null || json.isEmpty()) {
286.             this.logger.logError("No save data found for user: " + this.loggedInUser.getUsername());
287.             return;
288.         }
289. 
290.         // Parse JSON
291.         Gson gson = new Gson();
292.         SessionData data = gson.fromJson(json, SessionData.class);
293. 
294.         // Restore session state
295.         this.money.set(data.money);
296.         this.levelsBeaten = data.levelsBeaten;
297.         this.levelRequirement.set(data.levelRequirement);
298.         this.initialPlays = data.currentInitialPlays;
299.         this.initialRedraws = data.currentInitialRedraws;
300.         this.currentPlays.set(data.currentInitialPlays);
301.         this.currentRedraws.set(data.currentInitialRedraws);
302.         this.lastRewardDate = data.lastRewardDate != null ? LocalDate.parse(data.lastRewardDate) : null;
303. 
304.         // Restore upgrades
305.         this.upgrades.clear();
306.         if (data.upgradeNames != null) {
307.             for (String name : data.upgradeNames)
308.             {
309.                 UpgradeTileModel upgrade = UpgradeTiles.getUpgradeByName(name);
310.                 if (upgrade != null) this.upgrades.add(upgrade);
311.             }
312. 
313.             this.logger.logMessage(String.format("Successfully loaded session for user: " + this.loggedInUser.getUsername()));
314. 
315.         } catch (Exception e)
316.         {
317.             this.logger.logError("Failed to load session data: " + e.getMessage());
318.         }

```


DailyRewardController.java

```
1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.models.gameScreens.DailyRewardModel;
4. import com.example.project.models.gameScreens.DailyRewardType;
5. import com.example.project.services.GameScene;
6. import com.example.project.services.SceneManager;
7. import com.example.project.services.Session;
8. import javafx.animation.PauseTransition;
9. import javafx.animation.RotateTransition;
10. import javafx.fxml.FXML;
11. import javafx.scene.control.Button;
12. import javafx.scene.control.Label;
13. import javafx.scene.image.ImageView;
14. import javafx.scene.layout.Pane;
15. import javafx.scene.layout.StackPane;
16. import javafx.util.Duration;
17.
18. import java.time.LocalDate;
19. import java.util.Random;
20.
21. /**
22. * Controller for the daily reward popup screen.
23. */
24. public class DailyRewardController extends GameScreenController
25. {
26.     @FXML private StackPane root;
27.     @FXML private ImageView wheelImage;
28.     @FXML private ImageView stickImage;
29.     @FXML private Button spinButton;
30.     @FXML private Label rewardResultLabel;
31.     @FXML private Pane confettiLayer;
32.
33.     private final Random random = new Random();
34.     private DailyRewardModel model;
35.
36.     /**
37.      * Initialises the daily reward view by resetting the reward label.
38.      */
39.     @Override
40.     public void setup(Session session, SceneManager sceneManager)
41.     {
42.         model = new DailyRewardModel(session, sceneManager);
43.         rewardResultLabel.setText("");
44.     }
45.
46.     @Override
47.     public void onSceneChangedToThis() {
48.         rewardResultLabel.setText("");
49.         confettiLayer.getChildren().clear();
50.
51.         if (model.getSession().hasClaimedRewardToday()) {
52.             spinButton.setDisable(true);
53.             rewardResultLabel.setText("You've already claimed today's reward.");
54.         } else {
55.             spinButton.setDisable(false);
56.         }
57.     }
58.
59.     @FXML
60.     private void onSpinButtonClicked() {
61.         // Block spin if already claimed
62.         if (model.getSession().hasClaimedRewardToday())
63.         {
64.             rewardResultLabel.setText("Already claimed.");
65.             spinButton.setDisable(true);
66.             return;
67.         }
68.
69.         spinButton.setDisable(true);
70.
71.         int spinDegrees = 720 + random.nextInt(360); // random stop angle
72.         RotateTransition rotate = new RotateTransition(Duration.seconds(2), stickImage);
73.         rotate.setByAngle(spinDegrees);
74.         rotate.setOnFinished(event ->
75.         {
76.             DailyRewardType reward = model.rollReward();
77.             model.applyReward(reward);
78.             showReward(reward);
```

```
79.     });
80.     rotate.play();
81. }
82.
83. private void showReward(DailyRewardType reward)
84. {
85.     var timeDelay = new PauseTransition(Duration.millis(3000));
86.
87.     String message = switch (reward) {
88.         case Daily_Reward_Won_1Dollar -> "You won $1!";
89.         case Daily_Reward_Won_5Dollars -> "You won $5!";
90.         case Daily_Reward_Won_NOTHING -> "You won... nothing! Try again tomorrow for a better Prize!";
91.     };
92.
93.     rewardResultLabel.setText(message);
94.     model.getSession().setLastRewardDate(LocalDate.now());
95.     timeDelay.setOnFinished(e -> model.getSceneManager().switchScene(GameScene.MAINMENU));
96.     timeDelay.play();
97. }
98. }
```

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SessionData

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxtys	Missed	Lines	Missed	Methods
SessionData()	0%		n/a		1	1	2	2	1	1
Total	8 of 8	0%	0 of 0	n/a	1	1	2	2	1	1

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SessionData.java

```
1. package com.example.project.services;
2.
3. import java.util.ArrayList;
4. import java.util.List;
5.
6. /**
7. * Session data.
8. */
9. public class SessionData
10. {
11.     /**
12.      * current money.
13.     */
14.     public double money;
15.
16.     /**
17.      * levels beaten.
18.     */
19.     public int levelsBeaten;
20.
21.     /**
22.      * level requirement.
23.     */
24.     public int levelRequirement;
25.
26.     /**
27.      * current max plays.
28.     */
29.     public int currentInitialPlays;
30.
31.     /**
32.      * current max redraws.
33.     */
34.     public int currentInitialRedraws;
35.
36.     /**
37.      * last reward date.
38.     */
39.     public String lastRewardDate;
40.
41.     /**
42.      * username.
43.     */
44.     public String username;
45.
46.     /**
47.      * upgrade names.
48.     */
49.     public List<String> upgradeNames = new ArrayList<>();
50. }
```

com.example.project.services

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
Session		34%		0%	21	31	61	104	13	23	0	1
SVGIcons		0%		n/a	2	2	5	5	2	2	1	1
PopupLoader		80%		n/a	1	3	3	13	1	3	0	1
SessionData		0%		n/a	1	1	2	2	1	1	1	1
SceneManager		93%		n/a	1	3	1	14	1	3	0	1
Logger		100%		100%	0	11	0	36	0	10	0	1
PasswordHasher		100%		n/a	0	4	0	12	0	4	0	1
GameScene		100%		n/a	0	1	0	6	0	1	0	1
FXMLPageLoader		100%		n/a	0	3	0	6	0	3	0	1
Total	352 of 852	58%	16 of 18	11%	26	59	72	198	18	50	2	9

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com.example.project.services

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
Session.java	34%	34%	0%	0%	21	31	61	104	13	23	0	1
SVGIcons.java	0%	0%	n/a	n/a	2	2	5	5	2	2	1	1
PopupLoader.java	80%	80%	n/a	n/a	1	3	3	13	1	3	0	1
SessionData.java	0%	0%	n/a	n/a	1	1	2	2	1	1	1	1
SceneManager.java	93%	93%	n/a	n/a	1	3	1	14	1	3	0	1
Logger.java	100%	100%	100%	100%	0	11	0	36	0	10	0	1
PasswordHasher.java	100%	100%	n/a	n/a	0	4	0	12	0	4	0	1
GameScene.java	100%	100%	n/a	n/a	0	1	0	6	0	1	0	1
FXMLPageLoader.java	100%	100%	n/a	n/a	0	3	0	6	0	3	0	1
Total	352 of 852	58%	16 of 18	11%	26	59	72	198	18	50	2	9

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Application

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
startStage()		0%		n/a	1	1	13	13	1	1
tryGetSaveData()		0%		n/a	1	1	1	1	1	1
main(String[])		0%		n/a	1	1	2	2	1	1
Application()		0%		n/a	1	1	1	1	1	1
Total	63 of 63	0%	0 of 0	n/a	4	4	17	17	4	4

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Application.java

```
1. package com.example.project;
2.
3. import com.example.project.controllers.gameScreens.GameScreenFactory;
4. import com.example.project.services.GameScene;
5. import com.example.project.services.Session;
6. import javafx.fxml.FXMLLoader;
7. import javafx.scene.Parent;
8. import javafx.scene.Scene;
9. import javafx.stage.Stage;
10. import com.example.project.services.FXMLPageLoader;
11.
12. import java.io.IOException;
13.
14. /**
15. * The entry point of the application.
16. */
17. public class Application extends javafx.application.Application
18. {
19.     // Constants defining the window title and size
20.     public static final String TITLE = "WordPlay";
21.
22.     // defining the window width.
23.     public static final int WIDTH = 1300;
24.
25.     // Defining the window height.
26.     public static final int HEIGHT = 700;
27.
28.     @Override
29.     public void start(Stage stage) throws IOException
30.     {
31.         String rootScenePath = "/com/example/project/rootLayout-view.fxml";
32.         FXMLLoader rootLoader = new FXMLLoader(this.getClass().getResource(rootScenePath));
33.         Parent root = rootLoader.load();
34.         Scene scene = new Scene(root, WIDTH, HEIGHT);
35.         stage.setTitle(TITLE);
36.         stage.setScene(scene);
37.         stage.show();
38.         stage.setResizable(true);
39.         stage.setFullScreen(true);
40.
41.         Session session = tryGetSaveData();
42.         GameScreenFactory factory = new GameScreenFactory(session);
43.         factory.loadGameScreens(rootLoader.getController(), new FXMLPageLoader());
44.     }
45.
46.     private Session tryGetSaveData()
47.     {
48.         return new Session();
49.     }
50.
51. /**
52. * @param args the command-line arguments passed to your program when it starts.
53. */
54. public static void main(String[] args) {
55.     launch();
56. }
57. }
```

com.example.project

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
G Application	<div style="width: 0%; background-color: red;"></div>	0%	n/a		4	4	17	17	4	4	1	1
Total	63 of 63	0%	0 of 0	n/a	4	4	17	17	4	4	1	1

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com.example.project

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
Application.java	<div style="width: 0%; background-color: red;"></div>	0%	n/a		4	4	17	17	4	4	1	1
Total	63 of 63	0%	0 of 0	n/a	4	4	17	17	4	4	1	1

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Project

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
com.example.project.controllers.gameScreens		4%		2%	137	146	428	459	89	98	8	11
com.example.project.controllers.gameScreens.animations		0%		0%	22	22	89	89	19	19	6	6
com.example.project.services		58%		11%	26	59	72	198	18	50	2	9
com.example.project.models.tiles		72%		18%	16	49	41	127	7	38	1	8
com.example.project.controllers.popupControllers		0%		0%	12	12	27	27	10	10	2	2
com.example.project.controllers.tiles		68%		91%	7	34	26	85	6	27	1	5
com.example.project.models.gameScreens		90%		84%	19	98	25	235	10	62	2	8
com.example.project		0%		n/a	4	4	17	17	4	4	1	1
com.example.project.models.popups		38%		0%	10	12	16	23	8	10	0	2
com.example.project.controllers		0%		0%	6	6	14	14	4	4	1	1
com.example.project.models.tileGroups		95%		91%	3	24	2	62	2	18	0	3
com.example.project.services.shopItems		98%		100%	1	7	1	47	1	5	0	1
com.example.project.services.sqlite.DAOs		100%		100%	0	24	0	120	0	14	0	2
com.example.project.services.sound		100%		100%	0	12	0	54	0	11	0	2
com.example.project.services.sqlite		100%		100%	0	14	0	23	0	12	0	3
com.example.project.models		100%		n/a	0	4	0	8	0	4	0	1
Total	3,589 of 7,250	50%	154 of 274	43%	263	527	758	1,588	178	386	24	65

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Sessions

This coverage report is based on execution data from the following sessions:

Session	Start Time	Dump Time
runnervmwhb2z-d11ae062	Oct 23, 2025, 1:00:44 AM	Oct 23, 2025, 1:00:50 AM

Execution data for the following classes is considered in this report:

Class	Id
IntegrationTests.SQLite.DAOs.DictionaryDAOTests	cbc478615c608970
IntegrationTests.SQLite.SQLiteDictionaryConnectionTests	48cce90217d0662
com.example.project.controllers.gameScreens.GameScreenController	a5c416048453017a
com.example.project.controllers.gameScreens.LevelController	d2d824373367f465
com.example.project.controllers.gameScreens.LevelControllerTests	f2bf8ed73d5094d4
com.example.project.controllers.gameScreens.ShopController	b35de4a8201d9ea7
com.example.project.controllers.gameScreens.ShopControllerTests	4082fe83e6593d8d
com.example.project.controllers.popupControllers.DefinitionController	a27e9fd845b67d9e
com.example.project.controllers.tiles.EmptyTileControllerTests	6497475060dddb55
com.example.project.controllers.tiles.EmptyTileSlotController	18b6e94a91e2870d
com.example.project.controllers.tiles.LetterTileController	3155123f322d1e95
com.example.project.controllers.tiles.TileController	472170f1175ccb7a
com.example.project.controllers.tiles.TileControllerFactory	c8eecc2f00b38344
com.example.project.controllers.tiles.TileControllerFactoryTests	f42d29fec32812f
com.example.project.controllers.tiles.TileControllerFactoryTests.UnsupportedTileModel	f68f61f240dc72ed
com.example.project.controllers.tiles.UpgradeTileController	becc91268a1ee329
com.example.project.controllers.tiles.UpgradeTileControllerTests	6dc5393ffc2a3798
com.example.project.models.User	73f2d93c7dc8d563
com.example.project.models.gameScreens.GameScreenModel	a02ec0117e959460
com.example.project.models.gameScreens.LevelModel	e9a1d073a9a87f71
com.example.project.models.gameScreens.LevelModelTests	bcae81390bb975f
com.example.project.models.gameScreens.LoginModel	cb6088a017ad9855
com.example.project.models.gameScreens.LoginModelTest	8d85db1af9f00930
com.example.project.models.gameScreens.MainMenuModel	3c45ba970243aac6
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com.example.project.models.gameScreens.ScoreChimePlayer	305eeeebb1be24dfe
com.example.project.models.gameScreens.ShopModel	ed9c7fc8a5d18f70
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com.example.project.models.popups.DefinitionPopup	c8f10388524de747
com.example.project.models.popups.PopupModel	d7d747ca54f3b887
com.example.project.models.tileGroups.LetterTileGroup	772523f0066a5e5e
com.example.project.models.tileGroups.LetterTileGroupTests	ff80914c3c043aca
com.example.project.models.tileGroups.TileGroup	7e19ae733332145c
com.example.project.models.tileGroups.UpgradeTileGroup	e0a503e846ed1db9
com.example.project.models.tileGroups.UpgradeTileGroupTests	fe887b385616e83e
com.example.project.models.tiles.EmptyTileSlotModel	560309348fcfd5aa7
com.example.project.models.tiles.EmptyTileSlotTests	eea0f1d61a927270
com.example.project.models.tiles.LetterTileModel	9fd302f38c1f8cd1
com.example.project.models.tiles.LetterTileTest	c23418cec948c9d6
com.example.project.models.tiles.ScrabbleTileProvider	27315692a76d665a
com.example.project.models.tiles.ScrabbleTileProvider.ScrabbleTileData	a8fe0d118608ac4b
com.example.project.models.tiles.ScrabbleTileProviderTests	55e168852cf7ab64
com.example.project.models.tiles.TileModel	7f89317b74b781f4
com.example.project.models.tiles.TileTests	f139067565a01480
com.example.project.models.tiles.TileTests.TestTile	1ca92c587282a891
com.example.project.models.tiles.UpgradeTileModel	122d054afe01fdf5
com.example.project.models.tiles.UpgradeTileModel.UpgradeBuilder	8f7f4f25dfc1224b
com.example.project.models.tiles.UpgradeTileModelTests	3efadf905438cd91
com.example.project.services.FXMLPageLoader	fc465941ce8499fa
com.example.project.services.GameScene	be9d54d3c1ad3e88
com.example.project.services.Logger	a9bb6c27fda3106e
com.example.project.services.LoggerTests	c1ae23810f932124
com.example.project.services.PasswordHasher	21259083042798f8
com.example.project.services.PasswordHasherTests	ab9b14223d126452
com.example.project.services.PopupLoader	81a0bc8fbe958e2
com.example.project.services.PopupLoaderTests	4a1e5fed2011ccca
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com.example.project.services.Session	08b52d5bbf8413f2
com.example.project.services.SessionTests	92bf2a443c991b99
com.example.project.services.shopItems.UpgradeTiles	1d8e5cfffdcf7ffe
com.example.project.services.shopItems.UpgradeTilesTest	397914beab68e3fe
com.example.project.services.sound.GameMusicPlayer	aa5a7a44e9cf5149
com.example.project.services.sound.GameMusicPlayerTests	3ef4c70490b0845c

com.example.project.services.sound.GameSoundPlayer	d9fd4a247737058d
com.example.project.services.sound.GameSoundPlayerTests	5ed8bc9023cce40
com.example.project.services.sqlite.ConnectionComparer	3788cb41159b3e33
com.example.project.services.sqlite.SQLiteConnection	d1fafaf54b34db334
com.example.project.services.sqlite.SQLiteConnectionTests	a66f9f7c9205f2f3
com.example.project.services.sqlite.SQLiteConnectionTests.InvalidPathClass	f0e96823dce04a0c
com.example.project.services.sqlite.SQLiteConnectionTests.ValidPathClass	a7328b7fb34f2afdf
com.example.project.services.sqlite.SQLiteDictionaryConnection	dd0780a3988434c0
com.example.project.services.sqlite.SQLiteUsersConnection	75961846f7046111
com.example.project.services.sqlite.SQLiteUsersConnectionTests	d29d8971bc370482
com.example.project.services.sqlite.dAOs.DictionaryDAO	2e2be8bd42950ccb
com.example.project.services.sqlite.dAOs.DictionaryDAOTests	59928558dd04cdf1
com.example.project.services.sqlite.dAOs.SQLiteDBCreator	8d3f0f1224c95ccf
com.example.project.services.sqlite.dAOs.UsersDAO	d934c1951afdea49
com.example.project.services.sqlite.dAOs.UsersDAOTests	fe8c6bad815447cf
com.example.project.testHelpers.MockAudioSystemExtension	ecc3043b791fc9ac
com.sun.glass.ui.Application	d2c633053effff922
com.sun.glass.ui.View.Capability	137b2444912a7638
com.sun.glass.utils.NativeLibLoader	2756c6e87ea3573a
com.sun.javafx.PlatformUtil	180f2410faf7cd2c
com.sun.javafx.application.PlatformImpl	91660b3e95e248d3
com.sun.javafx.application.PlatformImpl.2	b971d51ebea10887
com.sun.javafx.application.PlatformImpl.HighContrastScheme	d2d4a159e49aa741
com.sun.javafx.beans.event.AbstractNotifyListener	2a527122b153d8f7
com.sun.javafx.binding.ExpressionHelper	f926dda9605240bf
com.sun.javafx.binding.ExpressionHelperBase	9465a503879a5bb7
com.sun.javafx.binding.ListExpressionHelper	6be51d95359214b6
com.sun.javafx.binding.ListExpressionHelper.Generic	ecc179e6031e116e
com.sun.javafx.binding.ListExpressionHelper.SingleChange	a0e45bc5db7b1d8f
com.sun.javafx.collections.ListListenerHelper	77e86a2f08f0d7be
com.sun.javafx.collections.ListListenerHelper.Generic	6ba162bb98d6936f
com.sun.javafx.collections.ListListenerHelper.SingleChange	a74f7e03718465a8
com.sun.javafx.collections.MapListenerHelper	83a6071d9d8e996c
com.sun.javafx.collections.ObservableListWrapper	43e38702734066b8
com.sun.javafx.collections.ObservableMapWrapper	9beb57dce3694f06
com.sun.javafx.collections.ObservableMapWrapper.SimpleChange	6d2a9cb0f6001132
com.sun.javafx.collections.SourceAdapterChange	22fe67ed36a975b9
com.sun.javafx.collections.TrackableObservableList	d30f4d2fe4b29e79
com.sun.javafx.collections.VetoableListDecorator	347d1dd01557fc01
com.sun.javafx.css.BitSet	ab2966ccf18a1d6f
com.sun.javafx.css.PseudoClassImpl	3f1829ba7270d233
com.sun.javafx.css.PseudoClassState	6f7e579d2277afb4
com.sun.javafx.event.BasicEventDispatcher	aa45d7a164f70eb3
com.sun.javafx.event.CompositeEventDispatcher	1d685633a1724ba3
com.sun.javafx.event.CompositeEventHandler	1e76a577da3cf8c4
com.sun.javafx.event.EventHandlerManager	fd757caa74231309
com.sun.javafx.fxml.BeanAdapter	2f491e945420e949
com.sun.javafx.fxml.BeanAdapter.1	54763299be740b64
com.sun.javafx.fxml.BeanAdapter.MethodCache	7ca3780f0a0405b6
com.sun.javafx.fxml.FXMLLoaderHelper	ef6e8fbe52a02992
com.sun.javafx.fxml.MethodHelper	c772402c943b6f9f
com.sun.javafx.fxml.ModuleHelper	9001ae8bc94c3759
com.sun.javafx.geom.BaseBounds	ed0a354be28d924a
com.sun.javafx.geom.RectBounds	8919b9f96338309c
com.sun.javafx.geom.RectangularShape	7fd95f3413eb8787
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com.sun.javafx.geom.transform.BaseTransform	1eb9022f26ea24ef
com.sun.javafx.geom.transform.Identity	797e8fc16bcdcbdf
com.sun.javafx.perf.PerformanceTracker	c0073c4114dae170
com.sun.javafx.reflect.ConstructorUtil	61fe60a532acbe26
com.sun.javafx.reflect.MethodUtil	2dfe70e9f3f59b0d
com.sun.javafx.reflect.MethodUtil.1	411edf81fa5fe806
com.sun.javafx.reflect.ReflectUtil	955b6e20e3cf3988
com.sun.javafx.runtime.VersionInfo	097d2593b109124b
com.sun.javafx.scene.CssFlags	7074f98c6728098c
com.sun.javafx.scene.DirtyBits	6d9772ee39ddd4c
com.sun.javafx.scene.EnteredExitedHandler	b8c2963c3fd263f
com.sun.javafx.scene.EventHandlerProperties	648a60aa74c8d9a6
com.sun.javafx.scene.EventHandlerProperties.EventHandlerProperty	666b1b8358e54996
com.sun.javafx.scene.ImageViewHelper	c083c8f185c5da1d
com.sun.javafx.scene.LayoutFlags	0df59ec15bbc4d05
com.sun.javafx.scene.NodeEventDispatcher	3b549faa95a5d88b
com.sun.javafx.scene.NodeHelper	a4b93b169753f510

com.sun.javafx.scene.ParentHelper	c23f48847b5f5a46
com.sun.javafx.scene.layout.PaneHelper	a289606e8fb303fb
com.sun.javafx.scene.layout.RegionHelper	97ad39fc0e16ade1
com.sun.javafx.scene.shape.RectangleHelper	912449853f782479
com.sun.javafx.scene.shape.ShapeHelper	9d6790c3d4b6e077
com.sun.javafx.scene.transform.TransformHelper	1f659cc46e4280c5
com.sun.javafx.sg.prism.NGShape.Mode	92ac86dee521cb6d
com.sun.javafx.tk.Toolkit	aa53129eb4a5d031
com.sun.javafx.tk.quantum.GlassSystemMenu	de866cf40dbbee0eb
com.sun.javafx.tk.quantum.PaintCollector	44df43dc614d8fbe
com.sun.javafx.tk.quantum.PerformanceTrackerHelper	2f870f9613045e15
com.sun.javafx.tk.quantum.PerformanceTrackerHelper.1	d6105bcb01c52025
com.sun.javafx.tk.quantum.PerformanceTrackerHelper.PerformanceTrackerDummyImpl	cd4b8f71678a2253
com.sun.javafx.tk.quantum.PerformanceTrackerImpl	5a12f07b8477f48e
com.sun.javafx.tk.quantum.QuantumRenderer	d35e94179b5d12af
com.sun.javafx.tk.quantum.QuantumRenderer.PipelineRunnable	9245b3aa82fba9b1
com.sun.javafx.tk.quantum.QuantumRenderer.QuantumThreadFactory	5247389d1c9eb181
com.sun.javafx.tk.quantum.QuantumToolkit	0ac1bcd0138cfbee
com.sun.javafx.tk.quantum.QuantumToolkit.1	c1f65e7a1298638d
com.sun.javafx.tk.quantum.QuantumToolkit.3	1b3c034cb8122f46
com.sun.javafx.tk.quantum.QuantumToolkit.PulseTask	986af6e7eae3b82f
com.sun.javafx.util.Utils	d2f9b00a9a3e4b69
com.sun.prism.BasicStroke	3417623692b8498e
com.sun.prism.GraphicsPipeline	1ea8581ec0cac4c2
com.sun.prism.es2.ES2Pipeline	12c69b05002c53d2
com.sun.prism.es2.GLFactory	de00eec3076b6872
com.sun.prism.es2.GLFactory.FactoryLoader	71b6eea996e4d096
com.sun.prism.es2.GLPGPUInfo	23a63eb0b2f3c8a4
com.sun.prism.es2.GLPixelFormat	5ca3832be6da3d2d
com.sun.prism.es2.GLPixelFormat.Attributes	f0a08c0d5bbfe95d
com.sun.prism.es2.X11GLFactory	97cd118484915fa9
com.sun.prism.impl.PrismSettings	832493b2febdafc7
com.sun.prism.impl.PrismSettings.RasterizerType	7fe513df0e240ce3
com.sun.prism.sw.SWPipeline	fc33f4f522d468ce
java.sql.DriverInfo	ea91df4c5e4e8e22
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net.bytebuddy.ByteBuddy	8a25cfee68883757
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net.bytebuddy.TypeCache	05243229e50ea1b0
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net.bytebuddy.asm.Advice	70b624c9f019e2d7
net.bytebuddy.asm.Advice.AdviceVisitor	fabc880f6c0d5cd1
net.bytebuddy.asm.Advice.AdviceVisitor.WithExitAdvice	e5e4c6806aaeee24
net.bytebuddy.asm.Advice.AdviceVisitor.WithExitAdvice.WithoutExceptionHandling	ee7c0bbc4d058e48
net.bytebuddy.asm.Advice.ArgumentParser.Factory	88f478d1b3b07ef4
net.bytebuddy.asm.Advice.ArgumentParser.Factory.1	5b27bf7bbbedbea54
net.bytebuddy.asm.Advice.ArgumentParser.Factory.2	57b0b2625db26866
net.bytebuddy.asm.Advice.ArgumentParser.ForAdvice.Default	8f1d6e695fd7ed52
net.bytebuddy.asm.Advice.ArgumentParser.ForAdvice.Default.ForMethodEnter	2298e62edd4a8f61
net.bytebuddy.asm.Advice.ArgumentParser.ForAdvice.Default.ForMethodExit	d03149f225f747e5
net.bytebuddy.asm.Advice.ArgumentParser.ForInstrumentedMethod.Default	3ac42d24c686a98d
net.bytebuddy.asm.Advice.ArgumentParser.ForInstrumentedMethod.Default.Copying	f3d840402494b1eb

net.bytebuddy.asm.Advice.Delegator.ForRegularInvocation.Factory	5378b1b8ea4a3362
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net.bytebuddy.asm.Advice.Dispatcher.Inactive	17d1a367a7c4f802
net.bytebuddy.asm.Advice.Dispatcher.Inlining	c3ce45049068fa1f
net.bytebuddy.asm.Advice.DispatcherInlining.CodeTranslationVisitor	1504514b9b3dac05
net.bytebuddy.asm.Advice.DispatcherInlining.Resolved	6de58a2c31e6f05a
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net.bytebuddy.asm.Advice.DispatcherInlining.Resolved.AdviceMethodInliner.ExceptionTableCollector	5c4bed9acb4fe33a
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net.bytebuddy.asm.Advice.DispatcherInlining.Resolved.ForMethodEnter	34cb9d6bc3c7cc9a
net.bytebuddy.asm.Advice.DispatcherInlining.Resolved.ForMethodEnter.WithRetainedEnterType	aed2977cf6532c53
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net.bytebuddy.asm.Advice.DispatcherInlining.Resolved.ForMethodExit.WithoutExceptionHandler	4677875bb641e3ed
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net.bytebuddy.asm.Advice.OffsetMapping.Sort.2	ace13bc50cb664fa
net.bytebuddy.asm.Advice.OffsetMapping.Target.ForArray	f0f6d54d957fc045
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net.bytebuddy.asm.Advice.StackMapFrameHandler.Default.TranslationMode.3	e6194c7d74113b12
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net.bytebuddy.description.enumeration.EnumerationDescription.ForLoadedEnumeration	affebde010d964e1
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net.bytebuddy.description.type.TypeDescription.Generic.OfNonGenericType.ForReifiedErasure	aed938d46e95e44c
net.bytebuddy.description.type.TypeDescription.Generic.OfNonGenericType.Latent	372c896f35267a96
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net.bytebuddy.description.type.TypeDescription.Generic.Visitor.AnnotationStripper.NonAnnotatedTypeVariable	617699ec0a3562b8
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net.bytebuddy.dynamic.loading.PackageDefinitionStrategy.Trivial	1b8be35a135f3f27
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net.bytebuddy.implementation.Implementation.Context.FrameGeneration.3	896ff9ab8ad2a703
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net.bytebuddy.implementation.Implementation.Target.AbstractBase.DefaultMethodInvocation.2	1a1e99939835b649
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net.bytebuddy.implementation.MethodCall.Appender	2c97aa6a2fcc90d6
net.bytebuddy.implementation.MethodCall.ArgumentLoader.ForMethodParameter	d998bab2fab7f80
net.bytebuddy.implementation.MethodCall.ArgumentLoader.ForMethodParameter.Factory	c6d5aecf90f60b77
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net.bytebuddy.implementation.MethodCall.MethodInvoker.ForContextualInvocation.Factory	8e991c8f6c61a26b
net.bytebuddy.implementation.MethodCall.MethodInvoker.ForVirtualInvocation.WithImplicitType	4b9ee3e1372d7a3c
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net.bytebuddy.implementation.MethodCall.TargetHandler.ForMethodParameter	e14f2f3fbceefcc9
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net.bytebuddy.implementation.MethodCall.TargetHandler.ForSelfOrStaticInvocation.Resolved	f56743558df08d26
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net.bytebuddy.implementation.MethodCall.TerminationHandler.Simple.1	51a0379b030a2561
net.bytebuddy.implementation.MethodCall.TerminationHandler.Simple.2	0f85a678e3b7ce29
net.bytebuddy.implementation.MethodCall.TerminationHandler.Simple.3	75c93aba20f438fe
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net.bytebuddy.implementation.MethodDelegation.ImplementationDelegate.ForStaticMethod	dd54ea94cb4466d5
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net.bytebuddy.implementation.SuperMethodCall.Appender.TerminationHandler.1	0262af83a3a8b2c1
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net.bytebuddy.implementation.attribute.AnnotationAppender.Target.OnMethodParameter	f9f5e949cd061dd0
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net.bytebuddy.implementation.attribute.AnnotationValueFilter.Default.2	e61de6f9507d0593
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net.bytebuddy.matcher.StringMatcher.Mode.7	e0ba3c2aa14bde78
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net.bytebuddy.matcher.StringMatcher.Mode.9	1dcf4a6fe509c5b5
net.bytebuddy.matcher.SuperTypeMatcher	af5ab86fce6ba126
net.bytebuddy.matcher.TypeSortMatcher	7fa32c06737e7231
net.bytebuddy.matcher.VisibilityMatcher	e1f91ccfaf7652
net.bytebuddy.pool.TypePool.AbstractBase	ebf3f44b769f4faf
net.bytebuddy.pool.TypePool.AbstractBase.Hierarchical	8051a701eb4b0eed
net.bytebuddy.pool.TypePool.CacheProvider.NoOp	5fe0b4fee828d480
net.bytebuddy.pool.TypePool.CacheProvider.Simple	5840a865f0dcfb51
net.bytebuddy.pool.TypePool.ClassLoading	4ff35dae9556b998
net.bytebuddy.pool.TypePool.Default	7aacf1f71b81e173
net.bytebuddy.pool.TypePool.Default.ReaderMode	a033f5a27d0fa2d6
net.bytebuddy.pool.TypePool.Empty	256686863a3e855f
net.bytebuddy.pool.TypePool.Explicit	58709ce964584fa6
net.bytebuddy.utility.AsmClassReader	8a59b649de2583f3
net.bytebuddy.utility.AsmClassReader.Factory.Default	fa0b1b24f69493ab
net.bytebuddy.utility.AsmClassReader.Factory.Default.1	03c829950d692f4b
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net.bytebuddy.utility.AsmClassReader.Factory.Default.5	f9eab20e73a925e7
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net.bytebuddy.utility.AsmClassWriter.Factory.Default.1	d17bf1b9989584cf
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net.bytebuddy.utility.AsmClassWriter.Factory.Default.3	6d6ee87b0257e85e
net.bytebuddy.utility.AsmClassWriter.Factory.Default.4	582d01970af50976
net.bytebuddy.utility.AsmClassWriter.Factory.Default.5	af553c430b6af86a
net.bytebuddy.utility.AsmClassWriter.Factory.Default.EmptyAsmClassReader	481bb30e4232c02d
net.bytebuddy.utility.AsmClassWriter.ForAsm	94e2175d9a1aa7a
net.bytebuddy.utility.AsmClassWriter.FrameComputingClassWriter	943f69745cdb7621
net.bytebuddy.utility.CompoundList	41fe1faec9b96005
net.bytebuddy.utility.ConstantValue.Simple	5f7232051686a271
net.bytebuddy.utility.ConstructorComparator	3566d64bbe3006a2
net.bytebuddy.utility.FieldComparator	5dff49d0b60b3a07
net.bytebuddy.utility.GraalImageCode	20c183e97cdf38cc
net.bytebuddy.utility.Invoker.Dispatcher	b9b5f67cf01bb049
net.bytebuddy.utility.JavaConstant.Simple	d18c769228ec6798
net.bytebuddy.utility.JavaConstant.Simple.OfTrivialValue	870135d683945e69
net.bytebuddy.utility.JavaConstant.Simple.OfTrivialValue.ForString	11ffe7957b103e25
net.bytebuddy.utility.JavaModule	fb89d312129d6105
net.bytebuddy.utility.JavaType	4ea4e7db3d74934a
net.bytebuddy.utility.JavaType.LatentTypeWithSimpleName	c99024b8d6d1bb99
net.bytebuddy.utility.MethodComparator	2a643ad1fb57d7e8
net.bytebuddy.utility.OpenedClassReader	3495a559539ff5e7
net.bytebuddy.utility.RandomString	a0583349bb66a97c
net.bytebuddy.utility.StreamDrainer	e95aa53cbbc417c6
net.bytebuddy.utility.dispatcher.JavaDispatcher	619d3930cae44455
net.bytebuddy.utility.dispatcher.JavaDispatcher.Dispatcher.ForContainerCreation	9f5631d45e9601e9
net.bytebuddy.utility.dispatcher.JavaDispatcher.Dispatcher.ForInstanceCheck	ec7e2f5ae4036bb1
net.bytebuddy.utility.dispatcher.JavaDispatcher.Dispatcher.ForNonStaticMethod	3ff776c0c7a05881
net.bytebuddy.utility.dispatcher.JavaDispatcher.Dispatcher.ForStaticMethod	faa6cd7f5e4cbd85
net.bytebuddy.utility.dispatcher.JavaDispatcher.DynamicClassLoader	e55e160d8d2ebd92
net.bytebuddy.utility.dispatcher.JavaDispatcher.DynamicClassLoader.Resolver.CreationAction	862b139a62f264a8
net.bytebuddy.utility.dispatcher.JavaDispatcher.DynamicClassLoader.Resolver.ForModuleSystem	1a2ee856ca3b45b6
net.bytebuddy.utility.dispatcher.JavaDispatcher.InvokerCreationAction	f5b3814ad34536fc
net.bytebuddy.utility.dispatcher.JavaDispatcher.ProxyInvocationHandler	f1e193453808acbe
net.bytebuddy.utility.privilege.GetSystemPropertyAction	67f0615a1253ad61
net.bytebuddy.utility.visitor.ExceptionTableSensitiveMethodVisitor	a6c239974eefef586
net.bytebuddy.utility.visitor.LineNumberPrependingMethodVisitor	56aead9b55055305

net.bytebuddy.utility.visitor.MetadataAwareClassVisitor	0c557b09efdf9fd6
net.bytebuddy.utility.visitor.StackAwareMethodVisitor	3dd1c2239bb0bf19
org.apache.maven.plugin.surefire.log.api.NullConsoleLogger	50e0945fec76b333
org.apache.maven.surefire.api.booter.BaseProviderFactory	da939a0152866a4b
org.apache.maven.surefire.api.booter.BiProperty	ed0281592f3976b4
org.apache.maven.surefire.api.booter.Command	52d7b732759793ff
org.apache.maven.surefire.api.booter.Constants	8f58b0da27218c74
org.apache.maven.surefire.api.booter.DumpErrorSingleton	ea25742803c9e73f
org.apache.maven.surefire.api.booter.ForkedProcessEvent	4f32ae2d4e670365
org.apache.maven.surefire.api.booter.ForkingReporterFactory	be06f83accc5a8aa
org.apache.maven.surefire.api.booter.ForkingRunListener	c34d0a9f28f66585
org.apache.maven.surefire.api.booter.MasterProcessCommand	fc8c116a509256d1
org.apache.maven.surefire.api.booter.Shutdown	47a37ed2a684ef1d
org.apache.maven.surefire.api.cli.CommandLineOption	5825f848ee2abcd7
org.apache.maven.surefire.api.provider.AbstractProvider	0fea65ed91d7c12a
org.apache.maven.surefire.api.report.ConsoleOutputCapture	7ee3451cf95e2f70
org.apache.maven.surefire.api.report.ConsoleOutputCapture.ForwardingPrintStream	804935f758ebaea3
org.apache.maven.surefire.api.report.ConsoleOutputCapture.NullOutputStream	a81300d2d50decb6
org.apache.maven.surefire.api.report.ReporterConfiguration	bf4075c0385296c2
org.apache.maven.surefire.api.report.RunMode	70edc0a9dea60143
org.apache.maven.surefire.api.report.SimpleReportEntry	5acc6a35bed0445f
org.apache.maven.surefire.api.report.TestOutputReportEntry	42f823601e9c6877
org.apache.maven.surefire.api.stream.AbstractStreamDecoder	c6f3b2781f9ac881
org.apache.maven.surefire.api.stream.AbstractStreamDecoder.BufferedStream	11f69a7bc1c7211
org.apache.maven.surefire.api.stream.AbstractStreamDecoder.Memento	e504a9e8cfc028af
org.apache.maven.surefire.api.stream.AbstractStreamDecoder.Segment	773004ac6cd115ef
org.apache.maven.surefire.api.stream.AbstractStreamDecoder.StreamReadStatus	8d5ee1d510b5c935
org.apache.maven.surefire.api.stream.AbstractStreamEncoder	9547668418a858ad
org.apache.maven.surefire.api.stream.SegmentType	77b0d78ed3ddd126
org.apache.maven.surefire.api.suite.RunResult	0eef4ae883b6fcaa
org.apache.maven.surefire.api.testset.DirectoryScannerParameters	529e83b831c47f72
org.apache.maven.surefire.api.testset.IncludedExcludedPatterns	e12220ce508068df
org.apache.maven.surefire.api.testset.ResolvedTest	119a5faa0ae08a91
org.apache.maven.surefire.api.testset.ResolvedTest.ClassMatcher	cb9dd1b6069a872b
org.apache.maven.surefire.api.testset.ResolvedTest.MethodMatcher	1d5196f3dfcebd52
org.apache.maven.surefire.api.testset.ResolvedTest.Type	6f46eedd1917ca66
org.apache.maven.surefire.api.testset.RunOrderParameters	f74f6b3eb9f1a132
org.apache.maven.surefire.api.testset.TestArtifactInfo	6d162cddde2db959
org.apache.maven.surefire.api.testset.TestListResolver	0f4645f0d7fd02c8
org.apache.maven.surefire.api.testset.TestRequest	1cb2946d8f0dc9e4
org.apache.maven.surefire.api.util.CloseableIterator	01846c357efac7b7
org.apache.maven.surefire.api.util.DefaultRunOrderCalculator	21a42ec0f6d63b8e
org.apache.maven.surefire.api.util.DefaultScanResult	01695a339c66ab8d
org.apache.maven.surefire.api.util.ReflectionUtils	7f9a430ae144c985
org.apache.maven.surefire.api.util.RunOrder	93376844e6d709d3
org.apache.maven.surefire.api.util.TestsToRun	db4e8195893ece6d
org.apache.maven.surefire.api.util.TestsToRun.ClassesIterator	543f26bfbdd04ce0
org.apache.maven.surefire.api.util.internal.AbstractNoninterruptibleReadableChannel	6826ce793980b64e
org.apache.maven.surefire.api.util.internal.AbstractNoninterruptibleWritableChannel	484afc5593fb9a
org.apache.maven.surefire.api.util.internal.Channels	eb60281181a1dc33
org.apache.maven.surefire.api.util.internal.Channels.3	605144c3f67338aa
org.apache.maven.surefire.api.util.internal.Channels.4	4834cf9402eabd28
org.apache.maven.surefire.api.util.internal.ClassMethod	817ad544e129b000
org.apache.maven.surefire.api.util.internal.DaemonThreadFactory	b2161e778265b95d
org.apache.maven.surefire.api.util.internal.DaemonThreadFactory.NamedThreadFactory	e3fb668fa8792230
org.apache.maven.surefire.api.util.internal.DumpFileUtils	9cc0f89ffba46ba32
org.apache.maven.surefire.api.util.internal.ImmutableMap	c7398d64c0977b06
org.apache.maven.surefire.api.util.internal.ImmutableMap.Node	3a9862055afaee58
org.apache.maven.surefire.api.util.internal.ObjectUtils	992d9f9f62042416
org.apache.maven.surefire.booter.AbstractPathConfiguration	f8b4034fe9c934d2
org.apache.maven.surefire.booter.BooterDeserializer	d2b4a565d2c195cc
org.apache.maven.surefire.booter.ClassLoaderConfiguration	c511fbfeb1f35c23
org.apache.maven.surefire.booter.Classpath	d05af49602124353
org.apache.maven.surefire.booter.ClasspathConfiguration	d14c58928ac6aa7b
org.apache.maven.surefire.booter.CommandReader	8bc1181d0c5af474
org.apache.maven.surefire.booter.CommandReader.1	72a8e2906ddc1c93
org.apache.maven.surefire.booter.CommandReader.CommandRunnable	f6a6b02be2fb0964
org.apache.maven.surefire.booter.ForkedBooter	c8ce6ed3be8ec9bc
org.apache.maven.surefire.booter.ForkedBooter.1	68f2dae15ae26cc2
org.apache.maven.surefire.booter.ForkedBooter.3	fc217f2c1d87c099
org.apache.maven.surefire.booter.ForkedBooter.4	2afb302f7c81f991
org.apache.maven.surefire.booter.ForkedBooter.6	850ef2748b5ef5e6
org.apache.maven.surefire.booter.ForkedBooter.7	9577114e02a5bdef
org.apache.maven.surefire.booter.ForkedBooter.8	3c8feb0d47cd2b0c
org.apache.maven.surefire.booter.ForkedBooter.PingScheduler	c83e3af27d5d3c47

org.apache.maven.surefire.booter.ForkedNodeArg	9dbb0ff22dfc1303
org.apache.maven.surefire.booter.PpidChecker	f83a9169197e13b1
org.apache.maven.surefire.booter.ProcessCheckerType	e554be35191ff5a7
org.apache.maven.surefire.booter.PropertiesWrapper	1e4e30276db2e62e
org.apache.maven.surefire.booter.ProviderConfiguration	ec2cd1e39ec4278e
org.apache.maven.surefire.booter.StartupConfiguration	70176a3dd903d57a
org.apache.maven.surefire.booter.SystemPropertyManager	a843c08e9b5c79ad
org.apache.maven.surefire.booter.TypeEncodedValue	355d20d53741b604
org.apache.maven.surefire.booter.spi.AbstractMasterProcessChannelProcessorFactory	67a1c051e3809086
org.apache.maven.surefire.booter.spi.AbstractMasterProcessChannelProcessorFactory.1	cc936f6c85f9235a
org.apache.maven.surefire.booter.spi.AbstractMasterProcessChannelProcessorFactory.2	a1fa70e4af42c555
org.apache.maven.surefire.booter.spi.CommandChannelDecoder	6684e6bad0b7c71e
org.apache.maven.surefire.booter.spi.EventChannelEncoder	b69d9287bf010b1a
org.apache.maven.surefire.booter.spi.EventChannelEncoder.StackTrace	265e85a5e039b0af
org.apache.maven.surefire.booter.spi.LegacyMasterProcessChannelProcessorFactory	3b29862697f79d34
org.apache.maven.surefire.booter.spi.SurefireMasterProcessChannelProcessorFactory	8c14c673718fba9e
org.apache.maven.surefire.booter.stream.CommandDecoder	a23a4082e2bbd1ed
org.apache.maven.surefire.booter.stream.CommandDecoder.1	950700970edca54a
org.apache.maven.surefire.booter.stream.EventEncoder	7c894cb22c8c16ca
org.apache.maven.surefire.junitplatform.JUnitPlatformProvider	958f7eb4311b3c2f
org.apache.maven.surefire.junitplatform.LazyLauncher	a3841276826f155c
org.apache.maven.surefire.junitplatform.RunListenerAdapter	0d7041faa0298e70
org.apache.maven.surefire.junitplatform.RunListenerAdapter.1	967ebdaaef33363
org.apache.maven.surefire.junitplatform.TestPlanScannerFilter	db2b13639af3176e
org.apache.maven.surefire.report.ClassMethodIndexer	0e8f3008aec84fc
org.apache.maven.surefire.shared.lang3.JavaVersion	a902b52c460c0348
org.apache.maven.surefire.shared.lang3.StringUtils	4628d7808116e372
org.apache.maven.surefire.shared.lang3.SystemProperties	6b2fea785d2a2915
org.apache.maven.surefire.shared.lang3.SystemUtils	2518da556699ab1e
org.apache.maven.surefire.shared.lang3.function.Suppliers	6cb739fdbd96d7c1
org.apache.maven.surefire.shared.lang3.math.NumberUtils	99f301ade68669b7
org.apache.maven.surefire.shared.utils.StringUtils	abd8480c7152bf46
org.apache.maven.surefire.shared.utils.cli.ShutdownHookUtils	011b23cd829ec86c
org.apiguardian.api.API.Status	95d0ffa805fc01a
org.junit.jupiter.api.AssertDoesNotThrow	36b9cb12d1985e50
org.junit.jupiter.api.Assertions	02e79388fd0ddf18
org.junit.jupiter.api.AssertFalse	dea6dc33450c92f0
org.junit.jupiter.api.IsNotNull	34eb9c4ee51b2816
org.junit.jupiter.api.IsNotNull	36f7b673f5497507
org.junit.jupiter.api.AssertSame	77061b15f086bbc5
org.junit.jupiter.api.AssertThrows	2e413933639a681e
org.junit.jupiter.api.AssertTrue	6ef3923800860200
org.junit.jupiter.api.Assertions	a580a647f9b0d1af
org.junit.jupiter.api.Assertions	a837ed10bf9804f2
org.junit.jupiter.api.DisplayNameGenerator	1c70d4d828122f05
org.junit.jupiter.api.DisplayNameGenerator.IndicativeSentences	b23b44fe1a1ae4b6
org.junit.jupiter.api.DisplayNameGenerator.ReplaceUnderscores	45af1f815eb3bfc6
org.junit.jupiter.api.DisplayNameGenerator.Simple	3587fc3bd5ac68a7
org.junit.jupiter.api.DisplayNameGenerator.Standard	232bffa5aa51a0c4e
org.junit.jupiter.api.TestInstanceLifecycle	235138c6ffffd45f1
org.junit.jupiter.api.extension.ConditionEvaluationResult	fc311dfabd3a0e23
org.junit.jupiter.api.extension.ExtensionContext	dacb7330135ba8f9
org.junit.jupiter.api.extension.ExtensionContext.Namespace	eb8d03782ab35d64
org.junit.jupiter.api.extension.ExtensionContext.Store	288780f400093c7c
org.junit.jupiter.api.extension.InvocationInterceptor	695ac2a6b4b9c7e4
org.junit.jupiter.engine.JupiterTestEngine	011031db01fe58db
org.junit.jupiter.engine.config.CachingJupiterConfiguration	9da5fe6b78ad9a14
org.junit.jupiter.engine.config.DefaultJupiterConfiguration	bbee9c72790c271d
org.junit.jupiter.engine.config.EnumConfigurationParameterConverter	433eec982a6fabbc
org.junit.jupiter.engine.config.InstantiatingConfigurationParameterConverter	d2270f0957971443
org.junit.jupiter.engine.descriptor.AbstractExtensionContext	6b3fc41ad8b41d4f
org.junit.jupiter.engine.descriptor.ClassBasedTestDescriptor	414ee653c9e673cf
org.junit.jupiter.engine.descriptor.ClassExtensionContext	e804dacaeaef4a6a
org.junit.jupiter.engine.descriptor.ClassTestDescriptor	2f87db51b4485e07
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org.junit.jupiter.engine.descriptor.ExtensionUtils	43a683ad1b768e92
org.junit.jupiter.engine.descriptor.JupiterEngineDescriptor	3d2bddce296b041
org.junit.jupiter.engine.descriptor.JupiterEngineExtensionContext	7146ce9988edfce2
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org.junit.jupiter.engine.descriptor.MethodExtensionContext	b5abe6523f4a32d7
org.junit.jupiter.engine.descriptor.TestInstanceLifecycleUtils	a247fc379f47df66
org.junit.jupiter.engine.descriptor.TestMethodTestDescriptor	35334f82ecefa63c

org.junit.jupiter.engine.discovery.AbstractAnnotatedDescriptorWrapper	90b10f2d90d7b01b
org.junit.jupiter.engine.discovery.AbstractOrderingVisitor	f8eb297929c247eb
org.junit.jupiter.engine.discovery.AbstractOrderingVisitor.DescriptorWrapperOrderer	c8e1585f8474ed61
org.junit.jupiter.engine.discovery.ClassOrderingVisitor	1f09fc1c6b9779bb
org.junit.jupiter.engine.discovery.ClassSelectorResolver	e25bb2b197bc8493
org.junit.jupiter.engine.discovery.DefaultClassDescriptor	9064f3528773a161
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org.junit.jupiter.engine.discovery.MethodOrderingVisitor	7d9864cebac818e1
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org.junit.jupiter.engine.discovery.MethodSelectorResolver.MethodType.3	e8fd5325e2431a2b
org.junit.jupiter.engine.discovery.predicates.IsInnerClass	d746bcff9a71ec26
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org.junit.jupiter.engine.discovery.predicates.IsPotentialTestContainer	909f14a1b9fe84dc
org.junit.jupiter.engine.discovery.predicates.IsTestClassWithTests	34690a186bfcf3ac
org.junit.jupiter.engine.discovery.predicates.IsTestFactoryMethod	941a8af0d47a68fd
org.junit.jupiter.engine.discovery.predicates.IsTestMethod	f2039dbd13fce110
org.junit.jupiter.engine.discovery.predicates.IsTestTemplateMethod	c13a4260435c18a8
org.junit.jupiter.engine.discovery.predicates.IsTestableMethod	4be487dee199f633
org.junit.jupiter.engine.execution.ConditionEvaluator	df91d94b180fe511
org.junit.jupiter.engine.execution.ConstructorInvocation	60b80968f2bdedc3
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org.junit.jupiter.engine.execution.DefaultTestInstances	0fc6d90567826bc4
org.junit.jupiter.engine.execution.InterceptingExecutableInvoker	42cb185ff5e76387
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org.junit.jupiter.engine.execution.InvocationInterceptorChain	9798b2a812d2015d
org.junit.jupiter.engine.execution.InvocationInterceptorChain.InterceptedInvocation	199eecf1acbe0b316
org.junit.jupiter.engine.execution.InvocationInterceptorChain.ValidatingInvocation	f064b1c2c4a4bf86
org.junit.jupiter.engine.execution.JupiterEngineExecutionContext	b48cc2a96dab0116
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org.junit.jupiter.engine.execution.JupiterEngineExecutionContext.State	3926323ef1c7fb03
org.junit.jupiter.engine.execution.MethodInvocation	8b8fd00463d994df
org.junit.jupiter.engine.execution.NamespaceAwareStore	00e5ea1337f34969
org.junit.jupiter.engine.execution.ParameterResolutionUtils	5aba48e342016f8f
org.junit.jupiter.engine.execution.TestInstancesProvider	357bca6226069e7b
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org.junit.jupiter.engine.extension.ExtensionRegistry	687649643dbb04fc
org.junit.jupiter.engine.extension.MutableExtensionRegistry	4daca7ba95c88845
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org.junit.jupiter.engine.extension.TempDirectory.Scope	3a056889e3e86fe7
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org.junit.jupiter.engine.extension.TestReporterParameterResolver	7187071bfc76c6ac
org.junit.jupiter.engine.extension.TimeoutConfiguration	44b8593a8e980687
org.junit.jupiter.engine.extension.TimeoutDurationParser	bb6a412c3829dae9
org.junit.jupiter.engine.extension.TimeoutExtension	13bcdad20fcc7bb
org.junit.jupiter.engine.support.JupiterThrowableCollectorFactory	46546a446de4c9c0
org.junit.jupiter.engine.support.OpenTest4JAndJUnit4AwareThrowableCollector	e9ee7d4e1adeccdd1
org.junit.platform.commons.function.Try	5200e6adc191344c
org.junit.platform.commons.function.Try.Failure	5d1cf7b52cd7a7ea
org.junit.platform.commons.function.Try.Success	98cdc5b539e1abfd
org.junit.platform.commons.logging.LoggerFactory	39fdfe1f67bc0eda
org.junit.platform.commons.logging.LoggerFactory.DelegatingLogger	c71dcf008235901c
org.junit.platform.commons.support.AnnotationSupport	4b0c63263b83acb5
org.junit.platform.commons.support.ReflectionSupport	db9de9450da5225a
org.junit.platform.commons.util.AnnotationUtils	efebc064783617e1
org.junit.platform.commons.util.ClassLoaderUtils	0d0959e2f6aa173e
org.junit.platform.commons.util.ClassNamePatternFilterUtils	e725a6f058746f53
org.junit.platform.commons.util.ClassUtils	60a2276f3701443f
org.junit.platform.commons.util.ClasspathScanner	54e3df9bb2092b52
org.junit.platform.commons.util.CollectionUtils	d47999c87f911057
org.junit.platform.commons.util.Preconditions	2c2a6e13cda880d4
org.junit.platform.commons.util.ReflectionUtils	172cf9786a51e883
org.junit.platform.commons.util.ReflectionUtils.HierarchyTraversalMode	349d54e51f2ffb44
org.junit.platform.commons.util.StringUtils	237c0cb03ac19254
org.junit.platform.commons.util.UnrecoverableExceptions	e906a774e770e7d4
org.junit.platform.engine.CompositeFilter	6a52e5b4f7292f48
org.junit.platform.engine.CompositeFilter.1	cc0aad5880fb4e4
org.junit.platform.engine.EngineDiscoveryListener	c3024068e43bb7f4
org.junit.platform.engine.EngineDiscoveryListener.1	a4cdbe8dd38d8f57
org.junit.platform.engine.EngineExecutionListener	693fee5cbd4c2df0

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org.junit.platform.engine.ExecutionRequest		b74e001541d12dd1
org.junit.platform.engine.Filter		5ffaaa90df97ca04
org.junit.platform.engine.FilterResult		a787a89e1f12d534
org.junit.platform.engine.SelectorResolutionResult		ca52e15a278dcf5c
org.junit.platform.engine.SelectorResolutionResult.Status		c505c2274f89f01d
org.junit.platform.engine.TestDescriptor		a828437d5cd2ea4f
org.junit.platform.engine.TestDescriptor.Type		7628a7c639ef3a60
org.junit.platform.engine.TestExecutionResult		6b1b512d17bb680e
org.junit.platform.engine.TestExecutionResult.Status		ad256e9fb4407e04
org.junit.platform.engine.UniqueId		4308af7bfbdbe4ba1
org.junit.platform.engine.UniqueId.Segment		f2d36a9ca9d14367
org.junit.platform.engine.UniqueIdFormat		6c86362ad62a1954
org.junit.platform.engine.discovery.ClassSelector		3174b37b3ba53b7e
org.junit.platform.engine.discovery.DiscoverySelectors		7863536f4276f4dd
org.junit.platform.engine.discovery.MethodSelector		3fe9eccb2ba205d2
org.junit.platform.engine.support.descriptor.AbstractTestDescriptor		b9c965daf4d9a476
org.junit.platform.engine.support.descriptor.ClassSource		37bd92069360f773
org.junit.platform.engine.support.descriptor.EngineDescriptor		8f2f77769ee0e9c9
org.junit.platform.engine.support.descriptor.MethodSource		1d55ac49f5cab20
org.junit.platform.engine.support.discovery.ClassContainerSelectorResolver		dc6114dc7e983729
org.junit.platform.engine.support.discovery.EngineDiscoveryRequestResolution		506a6b871d2fd8fe
org.junit.platform.engine.support.discovery.EngineDiscoveryRequestResolution.DefaultContext		db18f59764ea1f2a
org.junit.platform.engine.support.discovery.EngineDiscoveryRequestResolver		e7fb3042ea8112f0
org.junit.platform.engine.support.discovery.EngineDiscoveryRequestResolver.Builder		d86618af76b95613
org.junit.platform.engine.support.discovery.EngineDiscoveryRequestResolver.DefaultInitializationContext		1904819635770d62
org.junit.platform.engine.support.discovery.SelectorResolver		e64e4fd796d9641d
org.junit.platform.engine.support.discovery.SelectorResolver.Match		789c682356298d75
org.junit.platform.engine.support.discovery.SelectorResolver.Match.Type		1761e56439c8d93c
org.junit.platform.engine.support.discovery.SelectorResolver.Resolution		ab713bbdee405d17
org.junit.platform.engine.support.hierarchical.ExclusiveResource		c29acbe41918b09a
org.junit.platform.engine.support.hierarchical.ExclusiveResource.LockMode		96e95d210b150f97
org.junit.platform.engine.support.hierarchical.HierarchicalTestEngine		3ac292151741b7fc
org.junit.platform.engine.support.hierarchical.HierarchicalTestExecutor		963cba9b029b4b19
org.junit.platform.engine.support.hierarchical.LockManager		5aedd3bd3957b5a6
org.junit.platform.engine.support.hierarchical.Node		5c68850150771b6e
org.junit.platform.engine.support.hierarchical.Node.SkipResult		5aca1404ff0f9294
org.junit.platform.engine.support.hierarchical.NodeExecutionAdvisor		7c2670c7a35cfba6
org.junit.platform.engine.support.hierarchical.NodeTestTask		f652d8cc5e11bdc5
org.junit.platform.engine.support.hierarchical.NodeTestTask.DefaultDynamicTestExecutor		abd00dd511d28b2f
org.junit.platform.engine.support.hierarchical.NodeTestTaskContext		bdf88cd3834282a5
org.junit.platform.engine.support.hierarchical.NodeTreeWalker		c689092b060d0b12
org.junit.platform.engine.support.hierarchical.NodeUtils		a7ec8f66d373c169
org.junit.platform.engine.support.hierarchical.NodeUtils.1		5a44a7e2cbf864b4
org.junit.platform.engine.support.hierarchical.SameThreadHierarchicalTestExecutorService		2f3b283eba81629f
org.junit.platform.engine.support.hierarchical.SingleLock		2036ec8b92a38105
org.junit.platform.engine.support.hierarchical.ThrowableCollector		6fd7a27676be3c50
org.junit.platform.engine.support.store.NamespacedHierarchicalStore		f773d297d7dc3275
org.junit.platform.engine.support.store.NamespacedHierarchicalStore.CompositeKey		3f8758b273ff41a9
org.junit.platform.engine.support.store.NamespacedHierarchicalStore.EvaluatedValue		3362298f87d9b160
org.junit.platform.engine.support.store.NamespacedHierarchicalStore.MemoizingSupplier		be04f7b805ba11e1
org.junit.platform.engine.support.store.NamespacedHierarchicalStore.StoredValue		8e79d12821d1a835
org.junit.platform.launcher.EngineDiscoveryResult		44ae55d9c94ccdd13
org.junit.platform.launcher.EngineDiscoveryResult.Status		c6f73a818e869b3a
org.junit.platform.launcher.LauncherDiscoveryListener		c8e17526e895636b
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org.junit.platform.launcher.LauncherSessionListener.1		44b3640faa83f474
org.junit.platform.launcher.TestExecutionListener		f482f6546d6593dc
org.junit.platform.launcher.TestIdentifier		2b393a1d76332bc4
org.junit.platform.launcher.TestPlan		125780e74ba9c50c
org.junit.platform.launcher.core.CompositeEngineExecutionListener		cea0030887322419
org.junit.platform.launcher.core.CompositeTestExecutionListener		283b3c281a0728e5
org.junit.platform.launcher.core.DefaultDiscoveryRequest		5706e3938a47edbc
org.junit.platform.launcher.core.DefaultLauncher		0bd6690ec3f385ab
org.junit.platform.launcher.core.DefaultLauncherConfig		6fbfe73d83f861ce
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org.junit.platform.launcher.core.DefaultLauncherSession.ClosedLauncher		1fe238faa78c4ee2
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org.junit.platform.launcher.core.DelegatingLauncher		443e4e7cef8118ba
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org.junit.platform.launcher.core.EngineldValidator	a3cbf4111f4706bd
org.junit.platform.launcher.core.ExecutionListenerAdapter	027b702b863a1b7b
org.junit.platform.launcher.core.InternalTestPlan	6c1da5c749fc1754
org.junit.platform.launcher.core.IterationOrder	67fb bac106398c55
org.junit.platform.launcher.core.IterationOrder.1	c32d4c631876b3d3
org.junit.platform.launcher.core.IterationOrder.2	b3c544910702c338
org.junit.platform.launcher.core.LauncherConfig	58100dc14c875cb9
org.junit.platform.launcher.core.LauncherConfig.Builder	b0426f929eec8a53
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org.junit.platform.launcher.core.LauncherConfigurationParameters.Builder	89b3d95a424a68ea
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org.junit.platform.launcher.core.LauncherDiscoveryRequestBuilder	8aa84e8c1156fc9d
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org.junit.platform.launcher.core.LauncherFactory	7c870cd17431cb9d
org.junit.platform.launcher.core.LauncherListenerRegistry	64d5f2a8ac991f94
org.junit.platform.launcher.core.ListenerRegistry	387fd40f10f1e6b5
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org.junit.platform.launcher.core.ServiceLoaderRegistry	2a95faa488a889e7
org.junit.platform.launcher.core.ServiceLoaderTestEngineRegistry	69f4349cc7042ed7
org.junit.platform.launcher.core.StackTracePruningEngineExecutionListener	dbf05583a874b58d
org.junit.platform.launcher.core.StreamInterceptingTestExecutionListener	36972afdf5e542435
org.junit.platform.launcher.listeners.UniqueIdTrackingListener	f828b9fe46e426f0
org.junit.platform.launcher.listeners.discovery.AbortOnFailureLauncherDiscoveryListener	ee6720edc40a9ccf
org.junit.platform.launcher.listeners.discovery.LauncherDiscoveryListeners	03063623efb5e8b2
org.junit.platform.launcher.listeners.discovery.LauncherDiscoveryListeners.LauncherDiscoveryListenerType	e18e1a0e62e22287
org.junit.platform.launcher.listeners.session.LauncherSessionListeners	792ecbf10e49d607
org.mindrot.jbcrypt.BCrypt	6688b2728af0e4ae
org.mockito.Answers	af86bd70185fc83
org.mockito.ArgumentMatchers	30453f217beea892
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org.mockito.configuration.DefaultMockitoConfiguration	b174879ae8ed115e
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org.mockito.internal.creation.bytebuddy.ByteBuddyCrossClassLoaderSerializationSupport	b07e753f8b4d10a1
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org.mockito.internal.creation.bytebuddy.InlineBytecodeGenerator.ParameterWritingVisitorWrapper.MethodParameterStrippingMethodVisitor	4daaaa2d160cb215
org.mockito.internal.creation.bytebuddy.InlineBytecodeGenerator.ParameterWritingVisitorWrapper.ParameterAddingClassVisitor	3ea0bd6b68949e7f
org.mockito.internal.creation.bytebuddy.InlineDelegateByteBuddyMockMaker	2e5a8e3521b0d290
org.mockito.internal.creation.bytebuddy.InlineDelegateByteBuddyMockMaker.1	0c4b020122fedbe3
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org.mockito.internal.creation.bytebuddy.MockFeatures	3948e31575d7accd
org.mockito.internal.creation.bytebuddy.MockMethodAdvice	1db8cad96c916600
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org.mockito.internal.creation.bytebuddy.MockMethodAdvice.StaticMethodCall	31ce90c04a443966
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org.mockito.internal.creation.bytebuddy.StackWalkerChecker	68e569e3f7178506
org.mockito.internal.creation.bytebuddy.SubclassBytecodeGenerator	d1fe149222160108
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org.mockito.internalverification.checkers.NumberOfInvocationsChecker	bd3469583e9e6716
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org.objenesis.ObjenesisBase	0c1d2fd83029257f
org.objenesis.ObjenesisStd	f35c83a75caeaa811
org.objenesis.instantiator.sun.SunReflectionFactoryHelper	d17e7b3403696605
org.objenesis.instantiator.sun.SunReflectionFactoryInstantiator	6156947e7d7c507c
org.objenesis.strategy.BaselInstantiatorStrategy	b0aaa6460452f5ce
org.objenesis.strategy.PlatformDescription	c6456f671febfd7c
org.objenesis.strategy.StdInstantiatorStrategy	abae05ba56ea35a6
org.slf4j.LoggerFactory	d4f8bf028cb667a7
org.slf4j.helpers.AbstractLogger	0927772f80afa51d
org.slf4j.helpers.BasicMDCAdapter	354fafb117483fdb
org.slf4j.helpers.BasicMDCAdapter.1	8f0671fb507009fb
org.slf4j.helpers.BasicMarkerFactory	d8e0b7e9d11b515c
org.slf4j.helpers.LegacyAbstractLogger	9c0bab469712e43b
org.slf4j.helpers.NOPLoggerFactory	eaf704972ef7000c
org.slf4j.helpers.NOPMDCAdapter	d816a97d0b663014
org.slf4j.helpers.NOP_FallbackServiceProvider	44c4aa253bad3620
org.slf4j.helpers.Reporter	c9b912a7116daa87
org.slf4j.helpers.Reporter.Level	07530b930aa1c996
org.slf4j.helpers.Reporter.TargetChoice	0aa347cd82827a6b
org.slf4j.helpers.SubstituteLoggerFactory	2c5fb1b0f92b644d
org.slf4j.helpers.SubstituteServiceProvider	1caf06178d203dfd
org.slf4j.helpers.ThreadLocalMapOfStacks	2b24a935616f8730
org.slf4j.helpers.Util	859d67cf0632e467

org.slf4j.simple.OutputChoice	1210473ae6c23a02
org.slf4j.simple.OutputChoice.OutputChoiceType	b1a3560a9741f5b4
org.slf4j.simple.SimpleLogger	1d2d4d9ea2830f3d
org.slf4j.simple.SimpleLoggerConfiguration	1f2875dbbf5941d4
org.slf4j.simple.SimpleLoggerFactory	e94c2f64e0e452e9
org.slf4j.simple.SimpleServiceProvider	99b66f9433a7c345
org.sqlite.ExtendedCommand	c50b1f7fa92b5727
org.sqlite.JDBC	8e6db90d48c26646
org.sqlite.SQLiteConfig	e5bc293c5fc5a401
org.sqlite.SQLiteConfig.DateClass	d291e525fe22bbab
org.sqlite.SQLiteConfig.DatePrecision	48b2cf8b6cbc8f
org.sqlite.SQLiteConfig.Encoding	3da2a60c689ebcb45
org.sqlite.SQLiteConfig.HexKeyMode	b96f57e39f13322c
org.sqlite.SQLiteConfig.JournalMode	35850632da3b340e
org.sqlite.SQLiteConfig.LockingMode	e9325b088d34aed6
org.sqlite.SQLiteConfig.Pragma	87df8fb81c84ddba
org.sqlite.SQLiteConfig.SynchronousMode	a29b5ffa16c164c
org.sqlite.SQLiteConfig.TempStore	b1b405b6ad7dee3c
org.sqlite.SQLiteConfig.TransactionMode	2f404b6104bcee7c
org.sqlite.SQLiteConnection	ed855927d8eeb04b
org.sqlite.SQLiteConnectionConfig	bcd564a9722e9f02
org.sqlite.SQLiteErrorCode	5abe51ede2cd0696
org.sqlite.SQLiteException	55db16725b912d5c
org.sqlite.SQLiteJDBCLoader	a6594526880a50cc
org.sqlite.SQLiteJDBCLoader.VersionHolder	9280009235d99717
org.sqlite.SQLiteLimits	5de2416ef4a27971
org.sqlite.SQLiteOpenMode	8359ea3e35c0f022
org.sqlite.core.CoreDatabaseMetaData	7051aebb4552574e
org.sqlite.core.CorePreparedStatement	750078529300087e
org.sqlite.core.CoreResultSet	1acb626cccfd5d
org.sqlite.core.CoreStatement	a1ceabd06ac323b0
org.sqlite.core.DB	b6fc4681448d547c
org.sqlite.core.NativeDB	500d057ceb6ec321
org.sqlite.core.SafeStmtPtr	e50aa62317dfce9c
org.sqlite.date.FastDateFormat	452c95a00328b9cc
org.sqlite.date.FastDateFormat.1	46fbf48faf2148ae
org.sqlite.date.FastDateParser	fae281e33d96261d
org.sqlite.date.FastDateParser.1	ae45c588680f9086
org.sqlite.date.FastDateParser.2	13d88cc5c2eb8734
org.sqlite.date.FastDateParser.3	4cc4a0b1ba9c0895
org.sqlite.date.FastDateParser.4	e0ed4ea7b45392ea
org.sqlite.date.FastDateParser.CopyQuotedStrategy	edf865cc9ad02d15
org.sqlite.date.FastDateParser.ISO8601TimeZoneStrategy	80f87e347be6d3f2
org.sqlite.date.FastDateParser.NumberStrategy	c35d8b87ff103836
org.sqlite.date.FastDateParser.Strategy	3aff03d37d59cc72
org.sqlite.date.FastDatePrinter	aadc011f46d3de8a
org.sqlite.date.FastDatePrinter.CharacterLiteral	84f3f16ae96b7cb8
org.sqlite.date.FastDatePrinter.PaddedNumberField	81a67ba8156f5efa
org.sqlite.date.FastDatePrinter.TwoDigitMonthField	86f24deb0f79ff8e
org.sqlite.date.FastDatePrinter.TwoDigitNumberField	a85da15723b8b680
org.sqlite.date.FormatCache	9860c57b5c859df9
org.sqlite.date.FormatCache.MultipartKey	469164d2c8315f67
org.sqlite.jdbc3.JDBC3Connection	5e27d2f7139a637b
org.sqlite.jdbc3.JDBC3DatabaseMetaData	5bf62e00b2309290
org.sqlite.jdbc3.JDBC3PreparedStatement	612ff277d1eb1a39
org.sqlite.jdbc3.JDBC3ResultSet	904eb93adc35ae17
org.sqlite.jdbc3.JDBC3Statement	74fa6af2dbbcf659
org.sqlite.jdbc4.JDBC4Connection	a06b30caeb027651
org.sqlite.jdbc4.JDBC4DatabaseMetaData	f7bac5219bb5b0af
org.sqlite.jdbc4.JDBC4PreparedStatement	2e47f390feb2663e
org.sqlite.jdbc4.JDBC4ResultSet	bade386a08cd541c
org.sqlite.jdbc4.JDBC4Statement	5abde92f58724875
org.sqlite.util.LibraryLoaderUtil	4df105564098d269
org.sqlite.util.OSInfo	50a8b6f7f0e697a7
org.sqlite.util.ProcessRunner	eab1d4463e729110
sun.util.resources.cldr.provider.CLDRLocaleDataMetaInfo	cea799461486d92b

GameScreenController SidebarLoaded

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
GameScreenController SidebarLoaded(Parent, SidebarController)		0%	n/a	1	1	1	1	1	1	1
Total	9 of 9	0%	0 of 0	n/a	1	1	1	1	1	1

Created with JaCoCo 0.8.12.202403310830

GameScreenController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
loadSidebar()		0%		n/a	1	1	9	9	1	1
GameScreenController()		100%		n/a	0	1	0	2	0	1
Total	32 of 40	20%	0 of 0	n/a	1	2	9	11	1	2

Created with JaCoCo 0.8.12.202403310830

GameScreenController.java

```
1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.services.Logger;
4. import com.example.project.services.SceneManager;
5. import com.example.project.services.Session;
6. import javafx.fxml.FXMLLoader;
7. import javafx.scene.Parent;
8.
9. import java.io.IOException;
10.
11. /**
12. * Game screen controller that has some startup on screen thing todo. Level, shop controllers..
13. */
14. public abstract class GameScreenController
15. {
16.     protected Logger logger = new Logger();
17.
18.     protected GameScreenController() {}
19.
20.     /**
21.      * Called when the game scene is changed to one of the GameScenes Login, Level, Shop etc.
22.      */
23.     public abstract void onSceneChangedToThis();
24.
25.     /**
26.      * create models and inject session and scene manager.
27.      * @param session session.
28.      * @param sceneManager scene manager.
29.      */
30.     public abstract void setup(Session session, SceneManager sceneManager);
31.
32.     protected record SidebarLoaded(Parent node, SidebarController controller) {}
33.
34.     protected SidebarLoaded loadSidebar()
35.     {
36.         var sidebarPath = "/com/example/project/gameScreens/sidebar.fxml";
37.         FXMLLoader loader = new FXMLLoader(getClass().getResource(sidebarPath));
38.         Parent sidebarNode = null;
39.         try{
40.             sidebarNode = loader.load();
41.         }
42.         catch (IOException exception){
43.             this.logger.logError("failed to load sidebar fxml file.");
44.         }
45.
46.         SidebarLoaded side = new SidebarLoaded(sidebarNode, loader.getController());
47.         return side;
48.     }
49. }
```

GameScreenFactory

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
preloadPage(GameScene, String, PageLoader)		0%		0%	3	3	15	15	1	1
loadPages(PageLoader)		0%		n/a	1	1	6	6	1	1
loadGameScreens(RootLayoutController, FXMLPageLoader)		0%		n/a	1	1	4	4	1	1
GameScreenFactory(Session)		0%		n/a	1	1	5	5	1	1
Total	150 of 150	0%	4 of 4	0%	6	6	30	30	4	4

Created with JaCoCo 0.8.12.202403310830

ConfettiAnimation

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
playConfetti(Pane)		0%		0%	2	2	14	14	1	1
ConfettiAnimation()		0%		n/a	1	1	1	1	1	1
Total	81 of 81	0%	2 of 2	0%	3	3	15	15	2	2

Created with JaCoCo 0.8.12.202403310830

GameScreenFactory.java

```

1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.controllers.RootLayoutController;
4. import com.example.project.services.*;
5. import javafx.scene.Parent;
6.
7. import java.io.IOException;
8. import java.util.HashMap;
9. import java.util.Map;
10.
11. /**
12. * create game screen controllers.
13. */
14. public class GameScreenFactory {
15.
16.     private final Session session;
17.     private SceneManager sceneManager;
18.     private final Map<GameScene, Parent> pages = new HashMap<>();
19.     private final Map<GameScene, GameScreenController> controllers = new HashMap<>();
20.
21.     /**
22.      * Constructor.
23.      * @param session session.
24.      */
25.     public GameScreenFactory(Session session) {
26.         this.session = session;
27.     }
28.
29.
30.     /**
31.      * Load all main game screens.
32.      * @param rootController root.
33.      * @param loader loader.
34.      */
35.     public void loadGameScreens(RootLayoutController rootController, FXMLLoaderPageLoader loader)
36.     {
37.         this.sceneManager = new SceneManager(rootController, controllers, pages);
38.         this.loadPages(loader);
39.         sceneManager.switchScene(GameScene.LOGIN);
40.     }
41.
42.     private void loadPages(PageLoader loader)
43.     {
44.         preloadPage(GameScene.LOGIN, "/com/example/project/gameScreens/login-view.fxml", loader);
45.         preloadPage(GameScene.MAINMENU, "/com/example/project/gameScreens/main-menu-view.fxml", loader);
46.         preloadPage(GameScene.DAILY_REWARD, "/com/example/project/gameScreens/dailyReward-view.fxml", loader);
47.         preloadPage(GameScene.LEVEL, "/com/example/project/gameScreens/level-view.fxml", loader);
48.         preloadPage(GameScene.SHOP, "/com/example/project/gameScreens/shop-view.fxml", loader);
49.     }
50.
51.     private void preloadPage(GameScene type, String fxmlPath, PageLoader loader)
52.     {
53.         Parent page;
54.         try{
55.             page = loader.load(fxmlPath);
56.         }
57.         catch (IOException e){
58.             throw new RuntimeException(String.format("Exception when loading page: %s. Message: %s, cause: %s", fxmlPath, e.getMessage(), e.getCause()));
59.         }
60.         catch (IllegalStateException e){
61.             throw new RuntimeException(String.format("game scene fxml path for %s not correct: %s, cause: %s", fxmlPath, e.getMessage(), e.getCause()));
62.         }
63.
64.         if (page == null)
65.         {
66.             throw new IllegalArgumentException("Page not loaded: " + type);
67.         }
68.
69.         GameScreenController controller = loader.getController();
70.         if (controller == null){
71.             throw new RuntimeException("must have a controller on the game screen that is a gameScreenController");
72.         }
73.
74.         controller.setup(this.session, this.sceneManager);
75.         controllers.put(type, controller);
76.         pages.put(type, page);
77.     }
78. }
```

LevelController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setup(Session_SceneManager)		0%	n/a	1	1	26	26	1	1	1
lambda\$onPlayButton\$9(int, ActionEvent)		0%		0%	8	8	25	25	1	1
onSceneChangedToThis()		0%	n/a	1	1	12	12	1	1	1
syncLevelWonText()		0%		0%	3	3	16	16	1	1
setupDefinitionPopup()		0%	n/a	1	1	11	11	1	1	1
syncRedrawWindow()		0%		0%	4	4	11	11	1	1
onPlayButton()		0%	n/a	1	1	9	9	1	1	1
lambda\$runTotalScoreAnimation\$10(Label, Paint, int, ActionEvent)		0%	n/a	1	1	11	11	1	1	1
syncDefinitionWindow(boolean)		0%		0%	3	3	9	9	1	1
syncPlayButton()		0%		0%	5	5	4	4	1	1
runTotalScoreAnimation(int, int)		0%	n/a	1	1	7	7	1	1	1
LevelController()		0%	n/a	1	1	5	5	1	1	1
syncRedrawButton()		0%		0%	3	3	4	4	1	1
lambda\$setupDefinitionPopup\$6(ObservableValue, Boolean, Boolean)		0%	0%	2	2	5	5	1	1	1
onLetterTileClicked(LetterTileController)		0%		0%	2	2	3	3	1	1
lambda\$setupDefinitionPopup\$5(MouseEvent)		0%		0%	2	2	4	4	1	1
lambda\$onSceneChangedToThis\$4()		0%		0%	2	2	1	1	1	1
lambda\$onPlayButton\$8(int, int, ActionEvent)		0%	n/a	1	1	3	3	1	1	1
syncConfirmRedrawButton()		0%	n/a	1	1	2	2	1	1	1
lambda\$syncDefinitionWindow\$7(boolean, ActionEvent)		0%		0%	2	2	3	3	1	1
lambda\$setup\$3(ObservableValue, Boolean, Boolean)		0%	n/a	1	1	1	1	1	1	1
lambda\$syncLevelWonText\$12(ActionEvent)		0%	n/a	1	1	1	1	1	1	1
lambda\$syncLevelWonText\$11(ActionEvent)		0%	n/a	1	1	1	1	1	1	1
lambda\$setup\$2(ObservableValue, Boolean, Boolean)		0%	n/a	1	1	1	1	1	1	1
lambda\$setup\$1(ObservableValue, Number, Number)		0%	n/a	1	1	1	1	1	1	1
lambda\$setup\$0(ObservableValue, Number, Number)		0%	n/a	1	1	1	1	1	1	1
onRedrawButton()		91%		50%	1	2	0	3	0	1
onConfirmRedrawButton()		91%		50%	1	2	0	3	0	1
LevelController(LevelModel)		100%	n/a	0	1	0	5	0	0	1
onSkipButton()		100%	n/a	0	1	0	1	0	0	1
Total	756 of 811	6%	52 of 54	3%	53	57	166	178	26	30

LevelController.java

```

1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.models.tileGroups.LetterTileGroup;
4. import com.example.project.models.tileGroups.UpgradeTileGroup;
5. import com.example.project.controllers.gameScreens.animations.LevelScoreSequence;
6. import com.example.project.controllers.gameScreens.animations.ScoreTimeline;
7. import com.example.project.controllers.gameScreens.animations.TextEmphasisAnimation;
8. import com.example.project.controllers.popupControllers.DefinitionController;
9. import com.example.project.controllers.tiles.LetterTileController;
10. import com.example.project.models.gameScreens.LevelModel;
11. import com.example.project.models.popups.DefinitionPopup;
12. import com.example.project.services.GameScene;
13. import com.example.project.services.PopupLoader;
14. import com.example.project.services.SceneManager;
15. import com.example.project.services.Session;
16. import com.example.project.services.sound.GameSoundPlayer;
17. import javafx.animation.*;
18. import javafx.beans.binding.Bindings;
19. import javafx.fxml.FXML;
20. import javafx.scene.Cursor;
21. import javafx.scene.control.Button;
22. import javafx.scene.control.Label;
23. import javafx.scene.layout.HBox;
24. import javafx.scene.layout.StackPane;
25. import javafx.scene.paint.Color;
26. import javafx.util.Duration;
27. import javafx.scene.layout.VBox;
28. import java.util.*;
29.
30.
31. /**
32. * Controller for the level screen.
33. */
34. public class LevelController extends GameScreenController
35. {
36.     @FXML Label levelWonLostText;
37.     @FXML private StackPane sidebar;
38.     @FXML HBox tileRackContainer;
39.     @FXML HBox wordWindowContainer;
40.     @FXML HBox upgradeTilesContainer;
41.     @FXML Button playButton;
42.     @FXML Button redrawButton;
43.     @FXML VBox redrawContainer;
44.     @FXML Button confirmRedrawButton;
45.     @FXML private StackPane root;
46.     @FXML private StackPane definitionContainer;
47.
48.     private static LevelModel levelModel;
49.     private final DefinitionPopup definitionPopup = new DefinitionPopup();
50.     private UpgradeTileGroup upgradeGroup;
51.     private LetterTileGroup tileRack;
52.     private LetterTileGroup wordTilesRow;
53.     private LetterTileGroup redrawTilesColumn;
54.     private SidebarController sidebarController;
55.
56.     private final GameSoundPlayer spillSound = new GameSoundPlayer("/com/example/project/Sounds/spill2.wav");
57.     private final GameSoundPlayer shakeSound = new GameSoundPlayer("/com/example/project/Sounds/shake2.wav");
58.     private final GameSoundPlayer wonSound = new GameSoundPlayer("/com/example/project/Sounds/win.wav");
59.
60.     /**
61.      * Constructor only called once each time application opened.
62.     */
63.     public LevelController() {}
64.
65.     protected LevelController(LevelModel model) { levelModel = model; }
66.
67.     @Override
68.     public void setup(Session session, SceneManager sceneManager)
69.     {
70.         levelModel = new LevelModel(session, sceneManager);
71.
72.         // Setup Listeners. (automatically updates each property when they're changed)
73.         levelModel.getSession().getCurrentRedraws().addListener((obs, oldVal, newVal) -> syncRedrawButton());
74.         levelModel.getSession().getCurrentPlays().addListener((obs, oldVal, newVal) -> syncPlayButton());
75.
76.         levelModel.getIsRedrawActive().addListener((obs, oldVal, newVal) -> syncRedrawWindow());
77.         definitionPopup.getIsDefinitionActive().addListener((obs, oldVal, newVal) -> syncDefinitionWindow(newVal));
78.
79.         tileRack = new LetterTileGroup(levelModel.getSession().getHandSize(), tileRackContainer,
80.                                         levelModel.getTileRackTilesProperty(), this::onLetterTileClicked);
81.
82.         wordTilesRow = new LetterTileGroup(levelModel.getSession().getWordWindowSize(), wordWindowContainer,
83.                                           levelModel.getWordWindowTilesProperty(), this::onLetterTileClicked,
84.                                           List.of(this::syncPlayButton));
85.
86.         redrawTilesColumn = new LetterTileGroup(levelModel.getSession().getWordWindowSize(), redrawContainer,
87.                                               levelModel.getRedrawWindowTilesProperty(), this::onLetterTileClicked,
88.                                               List.of(this::syncRedrawButton, this::syncConfirmRedrawButton));
89.
90.         upgradeGroup = new UpgradeTileGroup(upgradeTilesContainer, levelModel.getSession().getPlayersUpgradesProperty());
91.         upgradeGroup.syncTiles();
92.
93.         setupDefinitionPopup();
94.
95.         var loadedSidebar = this.loadSidebar();
96.         var sidebarNode = ((StackPane) loadedSidebar.node());
97.         this.sidebar.getChildren().add(sidebarNode);
98.         this.sidebarController = loadedSidebar.controller();
99.         sidebarController.setupProperties(levelModel);
100.
101.        // initial sync.
102.        syncPlayButton();
103.        syncRedrawButton();
104.        syncConfirmRedrawButton();
105.        syncRedrawWindow();
106.    }
107.
108.    @Override
109.    public void onSceneChangedToThis()
110.    {
111.        levelModel.setupNewLevel();
112.        this.logger.logMessage("level page loaded.");

```

```

113.     levelWonLostText.setText("");
114.
115.     tileRack.syncTiles();
116.     wordTilesRow.syncTiles();
117.     redrawTilesColumn.syncTiles();
118.     upgradeGroup.syncTiles();
119.
120.     // level outcome text banner will only be visible when there is text
121.     levelWonLostText.visibleProperty().bind(Bindings.createBooleanBinding(
122.         () -> !levelWonLostText.getText().isEmpty(), levelWonLostText.textProperty() ));
123.     levelWonLostText.managedProperty().bind(levelWonLostText.visibleProperty());
124.     levelWonLostText.prefWidthProperty().bind(levelWonLostText.widthProperty().add(500));
125. }
126.
127. private void setupDefinitionPopup()
128. {
129.     PopupLoader popupLoader = new PopupLoader();
130.     DefinitionController definitionController = popupLoader.createPopupController(definitionPopup);
131.     definitionContainer.setMouseTransparent(true);
132.     definitionContainer.setVisible(false);
133.
134.     var popupRoot = definitionController.getStack();
135.     definitionContainer.getChildren().add(popupRoot);
136.
137.     popupRoot.managedProperty().bind(definitionPopup.getIsDefinitionActive());
138.     definitionPopup.setIsDefinitionActive(false);
139.
140.     // Listener for auto hiding the popup when clicking the container area outside the popup's content
141.     definitionContainer.setOnMouseClicked(event -> {
142.         if (event.getTarget() == definitionContainer) {
143.             definitionPopup.setIsDefinitionActive(false);
144.         }
145.         event.consume();
146.     });
147.
148.     // Listener for changing cursor appearance anywhere on screen
149.     definitionPopup.getIsDefinitionActive().addListener((activeObs, wasActive, isActive) -> {
150.         if (isActive) {
151.             definitionContainer.setCursor(Cursor.HAND);
152.         } else {
153.             definitionContainer.setCursor(Cursor.DEFAULT);
154.             this.syncLevelWonText();
155.         }
156.     });
157. }
158.
159. private void syncRedrawWindow()
160. {
161.     var isRedrawActive = levelModel.getIsRedrawActive().get();
162.     var distance = isRedrawActive ? -50 : 300; // slide on if inactive. slide out if active.
163.     TranslateTransition redrawWindowSlide = new TranslateTransition(Duration.millis(500), redrawContainer);
164.     redrawWindowSlide.setToX(distance);
165.     redrawWindowSlide.play();
166.     syncRedrawButton();
167.     if (levelModel.getSceneManager().getCurrentScene() != GameScene.LEVEL){
168.         return;
169.     }
170.
171.     var soundToPlay = isRedrawActive ? shakeSound : spillSound;
172.     soundToPlay.replay();
173. }
174.
175. private void syncDefinitionWindow(boolean isDefinitionActive){
176.     if (isDefinitionActive) {
177.         definitionContainer.setVisible(true);
178.         definitionContainer.setMouseTransparent(false);
179.     }
180.     var distance = isDefinitionActive ? 300 : 1000; // slide on if inactive. slide out if active.
181.     TranslateTransition definitionWindowSlide = new TranslateTransition(Duration.millis(500), definitionContainer);
182.     definitionWindowSlide.setToX(distance);
183.     definitionWindowSlide.setOnFinished(e -> {
184.         if (!isDefinitionActive) {
185.             definitionContainer.setVisible(false);
186.         }
187.     });
188.     definitionWindowSlide.play();
189. }
190.
191.
192. private void syncRedrawButton()
193. {
194.     var redraws = levelModel.getSession().getCurrentRedraws().get();
195.     redrawButton.setDisable(redraws == 0);
196.     redrawButton.setText(levelModel.getIsRedrawActive().get() ? "Cancel" : "Redraw Letters");
197. }
198.
199.
200. private void syncPlayButton()
201. {
202.     var plays = levelModel.getSession().getCurrentPlays().get();
203.     playButton.setDisable(plays == 0 || !levelModel.isCurrentWordValid() || levelModel.getWordWindowTilesProperty().isEmpty() || levelModel.getIsRedrawActive().get());
204.     playButton.setText("Play Word");
205. }
206.
207.
208. private void syncConfirmRedrawButton(){
209.     confirmRedrawButton.setDisable(levelModel.getRedrawWindowTilesProperty().isEmpty());
210. }
211.
212. /**
213. * Handle tile clicks.
214. */
215. private void onLetterTileClicked(LetterTileController tileController)
216. {
217.     boolean moved = levelModel.tryMoveTile(tileController.getModel());
218.     if (!moved) { this.logger.logMessage("Cannot move tile - no space available or tile not found."); }
219.
220. /**
221. * Handle play button
222. */
223. @FXML
224. protected void onPlayButton()
225. {
226.     definitionPopup.setPopup(levelModel.getCurrentWord());
227.     playButton.setDisable(true);
228.     var rawPoints = sidebarController.getRawPointsLabel();
229.     var multiplier = sidebarController.getMultiplierLabel();
230. }

```

```

231.     int startScore = levelModel.getPlayersTotalPoints().get();
232.     var tileScoringSequence = new LevelScoreSequence(wordTilesRow.getControllers(), levelModel, rawPoints, multiplier);
233.     tileScoringSequence.setOnFinished(e ->
234.     {
235.         // Capturing scores before upgrades run
236.         int preUpgradePoints = levelModel.getWordPointsProperty().get();
237.         int preUpgradeMulti = levelModel.getWordMultiProperty().get();
238.
239.         int endScore = startScore + levelModel.calcTotalWordScore(); // Upgrades run here
240.
241.         // Capturing scores after upgrades run
242.         int postUpgradePoints = levelModel.getWordPointsProperty().get();
243.         int postUpgradeMulti = levelModel.getWordMultiProperty().get();
244.
245.         // Check if any upgrade changed the points or multiplier
246.         boolean pointsChanged = preUpgradePoints != postUpgradePoints;
247.         boolean multiChanged = preUpgradeMulti != postUpgradeMulti;
248.         boolean upgradesApplied = pointsChanged || multiChanged;
249.
250.         SequentialTransition upgradeSequence = new SequentialTransition();
251.
252.         if (upgradesApplied) {
253.             if (pointsChanged) {
254.                 var pointsLabel = sidebarController.getRawPointsLabel();
255.                 var scoreInitialColour = pointsLabel.getTextFill();
256.                 TextEmphasisAnimation pointsEmphasis = new TextEmphasisAnimation(pointsLabel, scoreInitialColour, scoreInitialColour, Duration.seconds(0));
257.                 upgradeSequence.getChildren().addAll(pointsEmphasis.getChildren());
258.                 upgradeSequence.getChildren().add(new javafx.animation.PauseTransition(Duration.millis(1)));
259.             }
260.             if (multiChanged) {
261.                 var comboMultiplierLabel = sidebarController.getComboLabel();
262.                 var multiColour = comboMultiplierLabel.getTextFill();
263.                 TextEmphasisAnimation multiEmphasis = new TextEmphasisAnimation(comboMultiplierLabel, multiColour, multiColour, Duration.seconds(0));
264.                 upgradeSequence.getChildren().addAll(multiEmphasis.getChildren());
265.             }
266.
267.             upgradeSequence.setOnFinished(g -> {
268.                 levelModel.getFileScoreSoundPlayer().playNextNote();
269.                 runTotalScoreAnimation(startScore, endScore);
270.             });
271.
272.             upgradeSequence.play();
273.         } else {
274.             // If no upgrades changed the score, skip the upgrade animation and run total score immediately
275.             runTotalScoreAnimation(startScore, endScore);
276.         }
277.     });
278.
279.     tileScoringSequence.play();
280. }
281.
282. private void runTotalScoreAnimation(int startScore, int endScore) {
283.     ScoreTimeline totalScoreTimeline = new ScoreTimeline();
284.     var currentScoreLabel = sidebarController.getCurrentScoreLabel();
285.     var scoreInitialColour = currentScoreLabel.getTextFill();
286.     Timeline timeline = totalScoreTimeline.animateTotalScore(startScore, endScore, currentScoreLabel, 1000);
287.     timeline.setOnFinished(f ->
288.     {
289.         TextEmphasisAnimation scoreEmphasis = new TextEmphasisAnimation(currentScoreLabel, scoreInitialColour, scoreInitialColour, Duration.seconds(0));
290.         scoreEmphasis.play();
291.         levelModel.getFileScoreSoundPlayer().playNextNote();
292.         playButton.setDisable(false);
293.         levelModel.playTiles();
294.         levelModel.setWordPoints(0);
295.         levelModel.setWordMulti(1);
296.         levelModel.setTotalScore(endScore);
297.         levelModel.getFileScoreSoundPlayer().reset();
298.         definitionPopup.setIsDefinitionActive(true);
299.     });
300.     timeline.play();
301. }
302.
303. private void syncLevelWonText()
304. {
305.     if (levelModel.hasWon()){
306.         levelWonLostText.setText("VICTORY ACHIEVED");
307.         TextEmphasisAnimation youWonSequence = new TextEmphasisAnimation(levelWonLostText, Color.YELLOW, Color.BLACK, Duration.seconds(1));
308.         wonSound.replay();
309.         youWonSequence.setOnFinished(e -> levelModel.onWonLevel());
310.         youWonSequence.play();
311.     }
312.     else if (levelModel.hasLost()){
313.         levelWonLostText.setText("YOU DIED");
314.         TextEmphasisAnimation animSequence =
315.             new TextEmphasisAnimation(levelWonLostText, Color.RED, Color.BLACK, Duration.seconds(1));
316.         animSequence.setOnFinished(e -> levelModel.onLostLevel());
317.         animSequence.play();
318.     }
319.     else{
320.         levelWonLostText.setText("");
321.     }
322. }
323.
324. @FXML
325. protected void onSkipButton() { levelModel.getSceneManager().switchScene(GameScene.SHOP); }
326.
327. /**
328. * redraw button opens or cancels the redraw.
329. */
330. @FXML
331. protected void onRedrawButton()
332. {
333.     levelModel.setIsRedrawActive(!levelModel.getIsRedrawActive().get());
334.     levelModel.returnRedrawTilesToTheRack();
335. }
336.
337. /**
338. * Handle redraw confirm button.
339. */
340. @FXML
341. protected void onConfirmRedrawButton()
342. {
343.     levelModel.setIsRedrawActive(!levelModel.getIsRedrawActive().get());
344.     levelModel.redrawTiles();
345. }

```

LoginController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setup(Session, SceneManager)		0%		0%	3	3	17	17	1	1
onSceneChangedToThis()		0%	n/a		1	1	3	3	1	1
onLoginButtonClick()		0%	n/a		1	1	2	2	1	1
onSignupButtonClick()		0%	n/a		1	1	2	2	1	1
LoginController()		0%	n/a		1	1	2	2	1	1
skipLogin()		0%	n/a		1	1	2	2	1	1
lambda\$onSceneChangedToThis\$0(ObservableValue, String, String)		0%	n/a		1	1	1	1	1	1
Total	167 of 167	0%	4 of 4	0%	9	9	29	29	7	7

Created with JaCoCo 0.8.12.202403310830

LoginController.java

```
1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.controllers.gameScreens.animations.InfiniteFloatingAnimation;
4. import com.example.project.models.gameScreens.LoginModel;
5. import com.example.project.models.tiles.LetterTileModel;
6. import com.example.project.services.GameScene;
7. import com.example.project.services.PasswordHasher;
8. import com.example.project.controllers.tiles.TileControllerFactory;
9. import com.example.project.services.SceneManager;
10. import com.example.project.services.sqlite.dAOs.UsersDAO;
11. import com.example.project.services.Session;
12. import javafx.fxml.FXML;
13. import javafx.scene.control.Label;
14. import javafx.scene.control.TextField;
15. import javafx.scene.image.Image;
16. import javafx.scene.image.ImageView;
17. import javafx.scene.layout.Pane;
18.
19. import java.util.ArrayList;
20. import java.util.List;
21. import java.util.Objects;
22.
23. /**
24. * Controller for the login scene.
25. */
26. public class LoginController extends GameScreenController
27. {
28.     @FXML
29.     Pane root;
30.
31.     @FXML
32.     Pane titleRow;
33.
34.     @FXML
35.     ImageView imageBG;
36.
37.     @FXML
38.     Pane backgroundContainer;
39.
40.     @FXML
41.     private Label infoText;
42.
43.     @FXML
44.     private TextField usernameTextField;
45.
46.     @FXML
47.     private TextField passwordTextField;
48.
49.     private LoginModel loginModel;
50.     private final TileControllerFactory tileControllerFactory = new TileControllerFactory();
51.
52.     /**
53.      * No arg constructor.
54.     */
55.     public LoginController() { }
56.
57.     @Override
58.     public void onSceneChangedToThis()
59.     {
60.         this.logger.logMessage("Login page loaded.");
61.
62.         loginModel.getWelcomeTextProperty().addListener((obs, oldVal, newVal) ->
63.             this.infoText.setText(newVal));
64.     }
65.
66.     @Override
67.     public void setup(Session session, SceneManager sceneManager)
68.     {
69.         this.loginModel = new LoginModel(session, sceneManager, new UsersDAO(), new PasswordHasher());
70.
71.         var newIm = new Image(Objects.requireNonNull(getClass().getResource("/com/example/project/gameScreens/loginBgImage.jpg")).toExternalForm());
72.         imageBG.setImage(newIm);
73.         imageBG.fitWidthProperty().bind(backgroundContainer.widthProperty());
74.         imageBG.fitHeightProperty().bind(backgroundContainer.heightProperty());
75.
76.         List<LetterTileModel> lettersInWordPlayWord = new ArrayList<>();
77.         var letters = List.of('w', 'o', 'r', 'd', 'p', 'l', 'a', 'y');
78.         for (char letter : letters){
79.             lettersInWordPlayWord.add(new LetterTileModel(letter));
80.         }
81.
82.         for (var t : lettersInWordPlayWord){
83.             var ltController = tileControllerFactory.createLetterTileController(t);
84.             titleRow.getChildren().add(ltController.getRoot());
85.             InfiniteFloatingAnimation fa = new InfiniteFloatingAnimation();
86.             fa.apply(ltController.getRoot(), 4);
87.         }
88.     }
89.
90.     @FXML
91.     protected void onLoginButtonClick()
92.     {
93.         loginModel.onLoginClicked(usernameTextField.getText(), passwordTextField.getText());
94.     }
95.
```

```
96.     @FXML
97.     protected void onSignupButtonClick()
98.     {
99.         this.loginModel.onSignUpClicked(usernameTextField.getText(), passwordTextField.getText());
100.    }
101.
102.    // TODO: remove later
103.    @FXML
104.    private void skipLogin()
105.    {
106.        loginModel.getSceneManager().switchScene(GameScene.LEVEL);
107.    }
108.}
```

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MainMenuController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setup(Session, SceneManager)		0%		0%	3	3	20	20	1	1
onSceneChangedToThis()		0%		0%	5	5	9	9	1	1
onFastForwardClick()		0%		n/a	1	1	6	6	1	1
MainMenuController()		0%		n/a	1	1	3	3	1	1
updateDailyRewardUI()		0%		0%	2	2	2	2	1	1
onLoadButtonClick()		0%		n/a	1	1	3	3	1	1
onDailyRewardClicked()		0%		n/a	1	1	1	1	1	1
onStartButtonClick()		0%		n/a	1	1	2	2	1	1
onLogoutButtonClick()		0%		n/a	1	1	2	2	1	1
Total	240 of 240	0%	14 of 14	0%	16	16	48	48	9	9

Created with JaCoCo 0.8.12.202403310830

MainMenuController.java

```

1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.controllers.gameScreens.animations.InfiniteFloatingAnimation;
4. import com.example.project.controllers.tiles.TileControllerFactory;
5. import com.example.project.models.gameScreens.MainMenuModel;
6. import com.example.project.models.tiles.LetterTileModel;
7. import com.example.project.services.SceneManager;
8. import com.example.project.services.Session;
9. import com.example.project.services.sqlite.dAOs.UsersDAO;
10. import javafx.fxml.FXML;
11. import javafx.scene.image.Image;
12. import javafx.scene.image.ImageView;
13. import javafx.scene.layout.Pane;
14. import java.util.ArrayList;
15. import java.util.List;
16. import java.util.Objects;
17. import com.example.project.services.GameScene;
18. import javafx.scene.control.Button;
19. import javafx.scene.layout.VBox;
20.
21. import java.time.LocalDate;
22.
23. /**
24. * controller for the main menu.
25. */
26. public class MainMenuController extends GameScreenController
27. {
28.
29.     @FXML
30.     Pane root;
31.
32.     @FXML
33.     Pane titleRow;
34.
35.     @FXML
36.     ImageView imageBG;
37.
38.     @FXML
39.     Pane backgroundContainer;
40.
41.     @FXML private Button dailyRewardButton;
42.     @FXML private Button loadButton;
43.
44.     private MainMenuModel mainMenuModel;
45.     private final TileControllerFactory tileControllerFactory = new TileControllerFactory();
46.     private final UsersDAO usersDAO = new UsersDAO();
47.
48. /**
49. * No arg constructor.
50. */
51. public MainMenuController() {}
52.
53. private VBox loadButtonParent;
54.
55. @Override
56. public void onSceneChangedToThis()
57. {
58.     var haveData = this.usersDAO.hasSaveData(this.mainMenuModel.getSession().getUser());
59.     var containsButton = loadButtonParent.getChildrenUnmodifiable().contains(loadButton);
60.     ◆◆ var hideButton = !haveData && containsButton;
61.     ◆◆ if (hideButton) {
62.         loadButtonParent.getChildren().remove(loadButton);
63.     }
64.     ◆◆ else if (!containsButton) {
65.         loadButtonParent.getChildren().add(loadButton);
66.     }
67.
68.     updateDailyRewardUI();
69. }
70.
71. @Override
72. public void setup(Session session, SceneManager sceneManager)
73. {
74.     loadButtonParent = (VBox) this.loadButton.getParent();
75.
76.     this.mainMenuModel = new MainMenuModel(session, sceneManager);
77.
78.     var newIm = new Image(Objects.requireNonNull(getClass().getResource("/com/example/project/gameScreens/loginBgImage.jpg")).toExternalForm());
79.     imageBG.setImage(newIm);
80.     imageBG.fitWidthProperty().bind(backgroundContainer.widthProperty());
81.     imageBG.fitHeightProperty().bind(backgroundContainer.heightProperty());
82.
83.     List<LetterTileModel> lettersInWordPlayWord = new ArrayList<>();
84.     var letters = List.of('w', 'o', 'r', 'd', 'p', 'l', 'a', 'y');
85.     ◆◆ for (char letter : letters){
86.         lettersInWordPlayWord.add(new LetterTileModel(letter));
87.     }
88.
89.     ◆◆ for (var t : lettersInWordPlayWord){
90.         var ltController = tileControllerFactory.createLetterTileController(t);
91.         titleRow.getChildren().add(ltController.getRoot());
92.         InfiniteFloatingAnimation fa = new InfiniteFloatingAnimation();
93.         fa.apply(ltController.getRoot(), 4);
94.     }
95.

```

```

96.     TooltipSetup tooltip = new TooltipSetup();
97.     tooltip.setupTooltip(dailyRewardButton, TooltipSetup.Element.DAILY, mainMenuModel);
98. }
99.
100.
101. @FXML
102. protected void onStartButtonClick()
103. {
104.     mainMenuModel.onStartClicked();
105.
106. @FXML
107. protected void onLoadButtonClick()
108. {
109.     this.mainMenuModel.getSession().load();
110.    this.mainMenuModel.getSceneManager().switchScene(GameScene.LEVEL);
111. }
112.
113. @FXML
114. protected void onLogoutButtonClick()
115. {
116.    mainMenuModel.onLogoutClicked();
117. }
118.
119.
120. @FXML
121. protected void onDailyRewardClicked() { mainMenuModel.getSceneManager().switchScene(GameScene.DAILY_REWARD); }
122.
123. @FXML
124. protected void onFastForwardClick() {
125.     // Fast-forward by clearing reward state and resetting money for testing
126.     var session = mainMenuModel.getSession();
127.     session.setLastRewardDate(LocalDate.now().minusDays(1));
128.     session.resetMoney();
129.     updateDailyRewardUI();
130.
131.     logger.logMessage("Fast forwarded to the next day, to next reward date and reset money.");
132. }
133.
134. /**
135. * Updates the UI for the daily reward button and label.
136. * Hides the button if already claimed today.
137. */
138. private void updateDailyRewardUI()
139. {
140.     dailyRewardButton.setVisible(!mainMenuModel.getSession().hasClaimedRewardToday());
141. }
142.

```

ShopController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setup(Session, SceneManager)		0%	n/a	1	1	10	10	1	1	
save()		0%	n/a	1	1	2	2	1	1	
ShopController()		0%	n/a	1	1	1	1	1	1	
onSceneChangedToThis()		100%	n/a	0	1	0	6	0	1	
ShopController(ShopModel, UpgradeTileGroup, UpgradeTileGroup, Logger)		100%	n/a	0	1	0	6	0	1	
onUpgradeClicked(UpgradeTileController)		100%	n/a	0	1	0	3	0	1	
onNextLevelPressed()		100%	n/a	0	1	0	2	0	1	
Total	60 of 106	43%	0 of 0	n/a	3	7	13	30	3	7

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ShopController.java

```
1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.models.tileGroups.UpgradeTileGroup;
4. import com.example.project.controllers.tiles.UpgradeTileController;
5. import com.example.project.models.gameScreens.ShopModel;
6. import com.example.project.services.*;
7. import javafx.fxml.FXML;
8. import javafx.scene.layout.HBox;
9. import javafx.scene.layout.Pane;
10. import javafx.scene.layout.StackPane;
11.
12. /**
13. * Shop view controller.
14. */
15. public class ShopController extends GameScreenController
16. {
17.     @FXML private Pane root;
18.     @FXML private HBox shopItemsContainer;
19.     @FXML private HBox playersUpgradesContainer;
20.     @FXML private StackPane sidebar;
21.
22.     private ShopModel shopModel;
23.     private UpgradeTileGroup playersUpgrades;
24.     private UpgradeTileGroup shopItemsGroup;
25.
26. /**
27. * no arg constructor.
28. */
29. public ShopController() { }
30.
31. /**
32. * protected constructor for unit testing with mock model injection.
33. */
34. protected ShopController(ShopModel model, UpgradeTileGroup players, UpgradeTileGroup shopItems, Logger logger) {
35.     super();
36.     this.logger = logger;
37.     this.shopModel = model;
38.     this.playersUpgrades = players;
39.     this.shopItemsGroup = shopItems;
40. }
41.
42. @Override
43. public void setup(Session session, SceneManager sceneManager)
44. {
45.     this.shopModel = new ShopModel(session, sceneManager);
46.
47.     playersUpgrades = new UpgradeTileGroup(playersUpgradesContainer, shopModel.getSession().getPlayersUpgradesProperty());
48.     shopItemsGroup = new UpgradeTileGroup(shopItemsContainer, shopModel.getCurrentShopItemsProperty(),
49.                                         this::onUpgradeClicked);
50.
51.     var loadedSidebar = this.loadSidebar();
52.     var sidebarNode = ((StackPane) loadedSidebar.node());
53.     this.sidebar.getChildren().add(sidebarNode);
54.     SidebarController sidebarController = loadedSidebar.controller();
55.     sidebarController.bindPersistentInfo(session);
56.     sidebarController.hideLevelInfo();
57. }
58.
59. @Override
60. public void onSceneChangedToThis()
61. {
62.     this.logger.logMessage("Scene changed to shop");
63.     shopModel.regenerateShopItems();
64.     shopModel.getSession().resetPlaysRedraws();
65.     playersUpgrades.syncTiles();
66.     shopItemsGroup.syncTiles();
67. }
68.
69. /**
70. *
71. * @param controller upgrade tile ui element clicked on.
72. */
73. protected void onUpgradeClicked(UpgradeTileController controller)
74. {
75.     var model = controller.getModel();
76.     shopModel.tryPurchase(model);
77. }
78.
79. @FXML
80. protected void onNextLevelPressed()
81. {
```

```
82.     this.shopModel.onNextLevelPressed();
83. }
84.
85. @FXML
86. protected void save()
87. {
88.     this.shopModel.getSession().Save();
89. }
90. }
```

SidebarController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setupProperties(LevelModel)		0%		n/a	1	1	10	10	1	1
bindPersistentInfo(Session)		0%		n/a	1	1	10	10	1	1
syncScoreToBeat()		0%		n/a	1	1	2	2	1	1
syncMoney()		0%		n/a	1	1	2	2	1	1
hideLevelInfo()		0%		n/a	1	1	4	4	1	1
syncwordMultiProperty(Number)		0%		n/a	1	1	2	2	1	1
syncwordPointsProperty(Number)		0%		n/a	1	1	2	2	1	1
syncTotalScoreProperty(Number)		0%		n/a	1	1	2	2	1	1
syncPlaysCount()		0%		n/a	1	1	2	2	1	1
syncRedrawsCount()		0%		n/a	1	1	2	2	1	1
lambda\$setupProperties\$6(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
lambda\$setupProperties\$5(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
lambda\$setupProperties\$4(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
SidebarController()		0%		n/a	1	1	1	1	1	1
getComboLabel()		0%		n/a	1	1	1	1	1	1
getRawPointsLabel()		0%		n/a	1	1	1	1	1	1
getCurrentScoreLabel()		0%		n/a	1	1	1	1	1	1
getmultiplierLabel()		0%		n/a	1	1	1	1	1	1
lambda\$setupProperties\$7(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
lambda\$bindPersistentInfo\$3(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
lambda\$bindPersistentInfo\$2(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
lambda\$bindPersistentInfo\$1(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
lambda\$bindPersistentInfo\$0(ObservableValue, Number, Number)		0%		n/a	1	1	1	1	1	1
Total	225 of 225	0%	0 of 0	n/a	23	23	43	43	23	23

ConfettiAnimation.java

```
1. package com.example.project.controllers.gameScreens.animations;
2.
3. import javafx.scene.layout.Pane;
4. import javafx.scene.paint.Color;
5. import javafx.scene.shape.Rectangle;
6. import javafx.util.Duration;
7.
8. import java.util.Random;
9.
10. /**
11.  * class to play confetti animation.
12. */
13. public class ConfettiAnimation
14. {
15.     /**
16.      * play animation.
17.      * @param confettiLayer pane to play confetti on.
18.      */
19.     public static void playConfetti(Pane confettiLayer)
20.     {
21.         confettiLayer.getChildren().clear();
22.         Random rand = new Random();
23.         for (int i = 0; i < 75; i++) {
24.             Rectangle confetti = new Rectangle(6, 12);
25.             confetti.setFill(Color.hsb(rand.nextInt(360), 1.0, 1.0));
26.             confetti.setLayoutX(confettiLayer.getWidth() / 2);
27.             confetti.setLayoutY(confettiLayer.getHeight() / 2);

28.             var drop = new javafx.animation.TranslateTransition(Duration.seconds(1 + rand.nextDouble()), confetti);
29.             drop.setByX(rand.nextDouble() * 400 - 200);
30.             drop.setByY(rand.nextDouble() * 400 - 100);
31.             drop.setCycleCount(1);
32.             confettiLayer.getChildren().add(confetti);
33.             drop.play();
34.         }
35.     }
36. }
```

SidebarController.java

```
1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.models.gameScreens.LevelModel;
4. import com.example.project.services.Session;
5. import javafx.fxml.FXML;
6. import javafx.scene.control.Label;
7. import javafx.scene.layout.Pane;
8.
9. /**
10. * The sidebar on shop and level with the current round info.
11. */
12. public class SidebarController
13. {
14.     @FXML
15.     Pane root;
16.
17.     /**
18.      * This runs after the constructor and after all @FXML fields are initialized once each time application opened.
19.      */
20.     @FXML
21.     private Label moneyLabel;
22.
23.     @FXML private Label playsLeftLabel;
24.
25.     @FXML private Label redrawsLeftLabel;
26.
27.     @FXML Label scoreToBeatLabel;
28.     @FXML Label currentScoreLabel;
29.     @FXML Label rawPoints;
30.     @FXML Label multiplier;
31.     @FXML private Label ScoreAtLeastText;
32.     @FXML private Pane playersScoreContainer;
33.     @FXML private Pane wordScoreContainer;
34.
35.     private Session session;
36.
37.     /**
38.      * Binds things used in multiple screens, money, redraws plays.
39.      * @param session session.
40.      */
41.     public void bindPersistentInfo(Session session)
42.     {
43.         this.session = session;
44.
45.         this.session.getMoneyProperty().addListener((obs, oldVal, newVal) -> syncMoney());
46.         this.session.getCurrentPlays().addListener((obs, oldVal, newVal) -> syncPlaysCount());
47.         this.session.getCurrentRedraws().addListener((obs, oldVal, newVal) -> syncRedrawsCount());
48.         this.session.getLevelRequirement().addListener((obs, oldVal, newVal) -> syncScoreToBeat());
49.
50.         // TODO get tooltip setup to work with sidebar containers
51.
52.         syncPlaysCount();
53.         syncRedrawsCount();
54.         syncMoney();
55.         syncScoreToBeat();
56.     }
57.
58.     /**
59.      * Only show things relevant to upgrades or the shop. Money, redraws, plays.
60.      */
61.     public void hideLevelInfo()
62.     {
63.         playersScoreContainer.visibleProperty().set(false);
64.         wordScoreContainer.visibleProperty().set(false);
65.         ScoreAtLeastText.setText("Next level");
66.     }
67.
68.     /**
69.      * Returns combo label.
70.      * @return combo label.
71.      */
72.     public Label getComboLabel(){
73.         return this.multiplier;
74.     }
75.
76.     /**
77.      * Setup sync able properties.
78.      * @param levelModel level model.
```

```

79. */
80. public void setupProperties(LevelModel levelModel)
81. {
82.     // Binds the money display to Session money property for automatic updates
83.     bindPersistentInfo(levelModel.getSession());
84.     levelModel.getWordPointsProperty().addListener((obs, oldVal, newVal) -> syncwordPointsProperty(newVal));
85.     levelModel.getWordMultiProperty().addListener((obs, oldVal, newVal) -> syncwordMultiProperty(newVal));
86.     levelModel.getPlayersTotalPoints().addListener((obs, oldVal, newVal) -> syncTotalScoreProperty(newVal));
87.     levelModel.getSession().getLevelRequirement().addListener((obs, oldVal, newVal) -> syncScoreToBeat());
88.
89.     syncwordPointsProperty(levelModel.getWordPointsProperty().get());
90.     syncwordMultiProperty(levelModel.getWordMultiProperty().get());
91.     syncTotalScoreProperty(levelModel.getPlayersTotalPoints().get());
92.     syncScoreToBeat();
93. }
94.
95. private void syncScoreToBeat(){
96.     scoreToBeatLabel.setText(String.format("%s", this.session.getLevelRequirement().get()));
97. }
98.
99. private void syncMoney(){
100. {
101.     moneyLabel.setText(String.format("Funds: $%.2f", this.session.getMoneyProperty().get()));
102. }
103.
104. private void syncPlaysCount(){
105.     playsLeftLabel.setText(String.valueOf(this.session.getCurrentPlays().get()));
106. }
107.
108. private void syncRedrawsCount(){
109.     redrawsLeftLabel.setText(String.valueOf(this.session.getCurrentRedraws().get()));
110. }
111.
112. /**
113. * raw points label to be multiplied by multiplier.
114. * @return label.
115. */
116. public Label getRawPointsLabel(){
117.     return this.rawPoints;
118. }
119.
120. /**
121. * current score label.
122. * @return label.
123. */
124. public Label getCurrentScoreLabel(){
125.     return this.currentScoreLabel;
126. }
127.
128. /**
129. * word score multiplier label.
130. * @return label.
131. */
132. public Label getmultiplierLabel(){
133.     return this.multiplier;
134. }
135.
136. private void syncwordMultiProperty(Number newVal)
137. {
138.     this.multiplier.setText(String.format("%s", newVal));
139. }
140.
141. private void syncwordPointsProperty(Number newVal)
142. {
143.     this.rawPoints.setText(String.format("%s", newVal));
144. }
145.
146. private void syncTotalScoreProperty(Number newVal)
147. {
148.     this.currentScoreLabel.setText(String.format("%s", newVal));
149. }
150. }

```

TooltipSetup.Element

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
 static {...}		0%		n/a	1	1	6	6	1	1
Total	33 of 33	0%	0 of 0	n/a	1	1	6	6	1	1

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TooltipSetup

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
createTooltipContainer()		0%		n/a	1	1	9	9	1	1
createUpgradeGraphic(VBox, Object)		0%		0%	2	2	8	8	1	1
createStyledLabel(String, Color, Color)		0%		n/a	1	1	6	6	1	1
setTooltipContent(TooltipSetup.Element, Object)		0%		0%	6	6	9	9	1	1
setupTooltip(Node, TooltipSetup.Element, Object)		0%		n/a	1	1	8	8	1	1
createTooltipGraphic(VBox, String)		0%		n/a	1	1	5	5	1	1
TooltipSetup()		0%		n/a	1	1	1	1	1	1
Total	259 of 259	0%	8 of 8	0%	13	13	46	46	7	7

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TooltipSetup.java

```

1. package com.example.project.controllers.gameScreens;
2.
3. import com.example.project.models.tiles.UpgradeTileModel;
4. import javafx.geometry.Insets;
5. import javafx.geometry.Pos;
6. import javafx.scene.Node;
7. import javafx.scene.control.Tooltip;
8. import javafx.scene.control.Label;
9. import javafx.scene.layout.*;
10. import javafx.scene.paint.Color;
11. import javafx.util.Duration;
12.
13. /**
14. * sets a tooltip for desired element
15. */
16. public class TooltipSetup {
17.
18.     /**
19.      * different types of elements that require a tooltip
20.      */
21.     public enum Element {
22.         /**
23.          * tooltip for upgrade tiles
24.          */
25.         UPGRADE,
26.         /**
27.          * tooltip for daily rewards
28.          */
29.         DAILY,
30.         /**
31.          * tooltip for target score label
32.          */
33.         SCORETOBEAT,
34.         /**
35.          * tooltip for round score label
36.          */
37.         ROUNDSCORE,
38.         /**
39.          * tooltip for game funds label
40.          */
41.         FUNDS,
42.
43.     }
44.
45.     /**
46.      * @param node Node to attach tooltip to
47.      * @param element Element type
48.      * @param model Model associated with element
49.     */
50.     public void setupTooltip(Node node, Element element, Object model) {
51.         Node content = setTooltipContent(element, model);
52.
53.         // default constructor with empty string
54.         Tooltip tooltip = new Tooltip("");
55.
56.         // Set the custom graphic content
57.         tooltip.setGraphic(content);
58.
59.         tooltip.setPrefWidth(200);
60.         tooltip.setStyle("-fx-padding: 0;");
61.         tooltip.setShowDelay(Duration.seconds(0));
62.
63.         Tooltip.install(node, tooltip);
64.
65.     }
66.
67.     private Node setTooltipContent(Element element, Object model) {
68.
69.         VBox container = createTooltipContainer();
70.
71.         ◆ return switch (element) {
72.             case UPGRADE -> createUpgradeGraphic(container, model);
73.             case DAILY -> createTooltipGraphic(container, "Spin the wheel for your daily reward!");
74.             case SCORETOBEAT -> createTooltipGraphic(container, "The score you must reach before the number of plays run out! Be sure not to spend all of your redraws if you want some $$!");
75.             case ROUNDSCORE -> createTooltipGraphic(container, "The score you get after you play a word.");
76.             case FUNDS -> createTooltipGraphic(container, "How much $$$ you have. You earn more based on how many redraws you have left after winning!");
77.             default -> {
78.                 String description = "no description";
79.                 yield createTooltipGraphic(container, description);
80.             }
81.         };
82.     }
83.
84.     private VBox createTooltipContainer() {
85.         VBox container = new VBox(3); // 5 is the spacing between labels
86.         container.setPadding(new Insets(5));
87.
88.         container.setAlignment(Pos.TOP_CENTER);
89.
90.         container.setMaxSize(VBox.USE_PREF_SIZE, VBox.USE_PREF_SIZE);
91.
92.         Color bgColor = Color.color(1.0, 1.0, 1.0, 0.1);
93.         Color borderColor = Color.WHITE;
94.
95.         container.setBackground(new Background(new BackgroundFill(bgColor, new CornerRadii(6), Insets.EMPTY)));
96.         container.setBorder(new Border(new BorderStroke(
97.             borderColor,
98.             BorderStrokeStyle.SOLID,
99.             new CornerRadii(6),
100.            new BorderWidths(2) // 2px white border
101.        )));
102.         return container;
103.     }
104.
105.     private Node createTooltipGraphic(VBox container, String description) {
106.
107.         Label descriptionLabel = createStyledLabel(description, Color.web("#d9d8c7"), Color.BLACK);
108.
109.         descriptionLabel.setWrapText(true);
110.
111.         descriptionLabel.setPrefWidth(200);
112.
113.         container.getChildren().addAll(descriptionLabel);
114.         return container;
115.     }
116.
117.     private Node createUpgradeGraphic(VBox container, Object model) {
118.         if (!(model instanceof UpgradeTileModel upgradeModel)) {
119.             return new Label("Error: Invalid model type or missing data.");
120.         }
121.
122.         Label nameLabel = createStyledLabel(upgradeModel.getName(), Color.web("#9f1124"), Color.WHITE);
123.     }

```

```
124.         container.getChildren().add(nameLabel);
125.
126.         createTooltipGraphic(container, upgradeModel.getDescription());
127.
128.         Label costLabel = createStyledLabel(String.format("Cost: %.2f", upgradeModel.getCost()), Color.web("#f98c3f"), Color.WHITE);
129.
130.         container.getChildren().add(costLabel);
131.
132.         return container;
133.     }
134.
135.     private Label createStyledLabel(String text, Color bgColor, Color txtColor) {
136.         Label label = new Label(text);
137.         label.setTextFill(txtColor);
138.
139.         label.setBackground(new Background(new BackgroundFill(bgColor, new CornerRadii(4), Insets.EMPTY)));
140.         label.setPadding(new Insets(2, 8, 2, 8));
141.
142.         label.setStyle("-fx-font-family: 'Inter'; -fx-font-weight: bold; -fx-font-size: 14px;");
143.
144.         return label;
145.     }
146. }
```

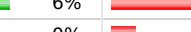
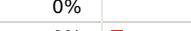
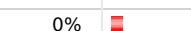
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com.example.project.controllers.gameScreens

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C LevelController		6%		3%	53	57	166	178	26	30	0	1
C TooltipSetup		0%		0%	13	13	46	46	7	7	1	1
C MainMenuController		0%		0%	16	16	48	48	9	9	1	1
C SidebarController		0%		n/a	23	23	43	43	23	23	1	1
C LoginController		0%		0%	9	9	29	29	7	7	1	1
C GameScreenFactory		0%		0%	6	6	30	30	4	4	1	1
C DailyRewardController		0%		0%	11	11	37	37	7	7	1	1
C ShopController		43%		n/a	3	7	13	30	3	7	0	1
C TooltipSetup.Element		0%		n/a	1	1	6	6	1	1	1	1
C GameScreenController		20%		n/a	1	2	9	11	1	2	0	1
C GameScreenController.SidebarLoaded		0%		n/a	1	1	1	1	1	1	1	1
Total	2,073 of 2,182	4%	89 of 91	2%	137	146	428	459	89	98	8	11

Created with JaCoCo 0.8.12.202403310830

com.example.project.controllers.gameScreens

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
LevelController.java	 6%	 3%	53	57	166	178	26	30	0	1		
TooltipSetup.java	 0%	 0%	14	14	52	52	8	8	2	2		
MainMenuController.java	 0%	 0%	16	16	48	48	9	9	1	1		
SidebarController.java	 0%	 n/a	23	23	43	43	23	23	1	1		
LoginController.java	 0%	 0%	9	9	29	29	7	7	1	1		
GameScreenFactory.java	 0%	 0%	6	6	30	30	4	4	1	1		
DailyRewardController.java	 0%	 0%	11	11	37	37	7	7	1	1		
ShopController.java	 43%	 n/a	3	7	13	30	3	7	0	1		
GameScreenController.java	 16%	 n/a	2	3	10	12	2	3	1	2		
Total	2,073 of 2,182	4%	89 of 91	2%	137	146	428	459	89	98	8	11

Created with JaCoCo 0.8.12.202403310830

DefinitionController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
syncwordProperty(String)		0%		0%	3	3	14	14	1	1
initialize(DefinitionPopup)		0%		n/a	1	1	5	5	1	1
syncDefinitionProperty(String)		0%		n/a	1	1	2	2	1	1
DefinitionController()		0%		n/a	1	1	2	2	1	1
getModel()		0%		n/a	1	1	1	1	1	1
lambda\$initialize\$1(ObservableValue, String, String)		0%		n/a	1	1	1	1	1	1
lambda\$initialize\$0(ObservableValue, String, String)		0%		n/a	1	1	1	1	1	1
getStack()		0%		n/a	1	1	1	1	1	1
Total	139 of 139	0%	4 of 4	0%	10	10	25	25	8	8

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DefinitionController.java

```
1. package com.example.project.controllers.popupControllers;
2.
3. import com.example.project.controllers.gameScreens.animations.InfiniteFloatingAnimation;
4. import com.example.project.controllers.tiles.TileControllerFactory;
5. import com.example.project.models.tiles.LetterTileModel;
6. import javafx.fxml.FXML;
7. import javafx.scene.image.ImageView;
8. import javafx.scene.control.Label;
9. import javafx.scene.layout.Pane;
10. import javafx.scene.Node;
11. import javafx.scene.layout.StackPane;
12. import com.example.project.models.popups.DefinitionPopup;
13. import java.util.ArrayList;
14. import java.util.List;
15.
16.
17. /**
18. * Controller for definition popup
19. */
20. public class DefinitionController extends PopupController<DefinitionPopup>
21. {
22.     @FXML
23.     private StackPane defStack;
24.
25.     @FXML
26.     Pane wordRow;
27.
28.     @FXML
29.     Label definitionLabel;
30.
31.     @FXML
32.     ImageView definitionImage;
33.
34.     /**
35.      * @return returns Node
36.     */
37.     public Node getStack() { return defStack; }
38.
39.     public DefinitionPopup getModel(){
40.         return model;
41.     }
42.
43.     private final TileControllerFactory tileControllerFactory = new TileControllerFactory();
44.
45.     @Override
46.     public void initialize(DefinitionPopup model)
47.     {
48.         this.model = model;
49.         wordRow.setMouseTransparent(true);
50.         model.definitionProperty().addListener((obs, oldStr, newStr) -> syncDefinitionProperty(newStr));
51.         model.wordProperty().addListener((obs, oldStr, newStr) -> syncwordProperty(newStr));
52.     }
53.
54.     private void syncDefinitionProperty(String newStr){
55.         this.definitionLabel.setText(String.format("%s", newStr));
56.     }
57.
58.     private void syncwordProperty(String newStr){
59.         // TODO: turn this into a reusable external function (same used in LoginController)
60.         wordRow.getChildren().clear();
61.         List<LetterTileModel> lettersInWordPlayed = new ArrayList<>();
62.         char[] charArray = newStr.toCharArray();
63.
64.         for (char letter : charArray){
65.             lettersInWordPlayed.add(new LetterTileModel(letter));
66.         }
67.
68.         for (var t : lettersInWordPlayed){
69.             var ltController = tileControllerFactory.createLetterTileController(t);
70.             ltController.getRoot().setScaleX(-(wordRow.getMaxWidth()/1.5));
71.             ltController.getRoot().setScaleY(-(wordRow.getMaxWidth()/1.5));
72.             wordRow.getChildren().add(ltController.getRoot());
73.             InfiniteFloatingAnimation fa = new InfiniteFloatingAnimation();
74.             fa.apply(ltController.getRoot(), 4);
75.         }
76.     }
77.
78. }
```


PopupController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
PopupController()	0%		n/a		1	1	1	1	1	1
getModel()	0%		n/a		1	1	1	1	1	1
Total	6 of 6	0%	0 of 0	n/a	2	2	2	2	2	2

Created with JaCoCo 0.8.12.202403310830

PopupController.java

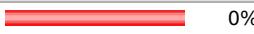
```
1. package com.example.project.controllers.popupControllers;
2.
3. import com.example.project.models.popups.PopupModel;
4. import javafx.fxml.FXML;
5. import javafx.scene.Node;
6.
7. /**
8. * Parent class for PopupControllers
9. * @param <P> Popup model type
10.*/
11. public abstract class PopupController<P extends PopupModel>
12. {
13.     /**
14.      * root ui node.
15.      * @return root ui Node
16.      */
17.     public abstract Node getStack();
18.
19.     /**
20.      * sets elements of the ui
21.      * @param popup popup to initialize
22.      */
23.     @FXML
24.     public abstract void initialize(P popup);
25.
26.     protected P model;
27.
28.     /**
29.      * gets the popup model.
30.      * @return model.
31.      */
32.     public P getModel()
33.     {
34.         return this.model;
35.     }
36. }
```

InfiniteFloatingAnimation

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
moveToRandom(Node, double, double)		0%	n/a	1	1	10	10	1	1	
InfiniteFloatingAnimation()		0%	n/a	1	1	2	2	1	1	
apply(Node, double)		0%	n/a	1	1	2	2	1	1	
lambda\$moveToRandom\$0(Node, double, double, ActionEvent)		0%	n/a	1	1	1	1	1	1	
Total	68 of 68	0%	0 of 0	n/a	4	4	14	14	4	4

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com.example.project.controllers.popupControllers

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
DefinitionController	 0%	0%	 0%	n/a	10	10	25	25	8	8	1	1
PopupController	 0%	n/a	 0%	2	2	2	2	2	2	2	1	1
Total	145 of 145	0%	4 of 4	0%	12	12	27	27	10	10	2	2

Created with JaCoCo 0.8.12.202403310830

com.example.project.controllers.popupControllers

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
DefinitionController.java	 0%	 0%	10	10	25	25	8	8	1	1		
PopupController.java	 0%	n/a	2	2	2	2	2	2	1	1		
Total	145 of 145	0%	4 of 4	0%	12	12	27	27	10	10	2	2

Created with JaCoCo 0.8.12.202403310830

EmptyTileSlotController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setLetter(LetterTileController)	100%	100%	100%	100%	0	3	0	6	0	1
updateView()	100%	100%	100%	100%	0	2	0	4	0	1
bind(EmptyTileSlotModel)	100%	100%		n/a	0	1	0	2	0	1
EmptyTileSlotController()	100%	100%		n/a	0	1	0	1	0	1
getRoot()	100%	100%		n/a	0	1	0	1	0	1
Total	0 of 50	100%	0 of 6	100%	0	8	0	14	0	5

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EmptyTileSlotController.java

```
1. package com.example.project.controllers.tiles;
2.
3. import com.example.project.models.tiles.EmptyTileSlotModel;
4. import javafx.fxml.FXML;
5. import javafx.scene.Node;
6. import javafx.scene.layout.StackPane;
7.
8. /**
9. * Empty Tile controller for EmptyTile view.
10.*/
11. public class EmptyTileSlotController extends TileController<EmptyTileSlotModel>
12. {
13.     @FXML
14.     protected StackPane root;
15.
16.     @FXML
17.     protected StackPane slotForLetterTile;
18.
19.     public void bind(EmptyTileSlotModel modelToUse)
20.     {
21.         this.model = modelToUse;
22.     }
23.
24.     private LetterTileController letterTileController;
25.
26.     public Node getRoot()
27.     {
28.         return root;
29.     }
30.
31.     /**
32.      * updates the tile slot with a new letter tile controller.
33.      * @param letterController the letter tiles controller.
34.      */
35.     public void setLetter(LetterTileController letterController)
36.     {
37.         if (this.model == null){
38.             throw new RuntimeException("model was null. call bind first.");
39.         }
40.
41.         this.model.setTile(letterController == null ? null : letterController.getModel());
42.         letterTileController = letterController;
43.         updateView();
44.     }
45.
46.     private void updateView()
47.     {
48.         slotForLetterTile.getChildren().clear();
49.
50.         if (this.letterTileController != null){
51.             slotForLetterTile.getChildren().add(this.letterTileController.getRoot());
52.         }
53.     }
54. }
```

LetterTileController

Element	Missed Instructions Cov.	Missed Branches Cov.	Missed Cxts	Missed Lines	Missed Methods
bind(LetterTileModel)	0%	n/a	1 1	10 10	1 1
getModel()	0%	n/a	1 1	1 1	1 1
LetterTileController()	0%	n/a	1 1	1 1	1 1
getRoot()	0%	n/a	1 1	1 1	1 1
Total	54 of 54	0% 0 of 0	n/a	4 4	13 13

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LetterTileController.java

```
1. package com.example.project.controllers.tiles;
2.
3. import com.example.project.models.tiles.LetterTileModel;
4. import javafx.fxml.FXML;
5. import javafx.scene.CacheHint;
6. import javafx.scene.Node;
7. import javafx.scene.control.Label;
8. import javafx.scene.image.ImageView;
9. import javafx.scene.layout.StackPane;
10.
11. /**
12. * Controls the layout of the letterUIModel. Which is a letter tile.
13. */
14. public class LetterTileController extends TileController<LetterTileModel>
15. {
16.     @FXML
17.     private StackPane root;
18.
19.     @FXML
20.     ImageView tileImage;
21.
22.     @FXML
23.     Label letterLabel;
24.
25.     @FXML
26.     Label valueLabel;
27.
28.     public Node getRoot()
29.     {
30.         return root;
31.     }
32.
33.     public LetterTileModel getModel(){
34.         return model;
35.     }
36.
37.     @Override
38.     public void bind(LetterTileModel tile)
39.     {
40.         this.model = tile;
41.         letterLabel.setText(String.valueOf(model.getLetter()));
42.         valueLabel.setText(String.valueOf(model.getValue()));
43.
44.         letterLabel.setCache(true);
45.         letterLabel.setCacheHint(CacheHint.QUALITY);
46.
47.         valueLabel.setCache(true);
48.         valueLabel.setCacheHint(CacheHint.QUALITY);
49.
50.         tileImage.setCache(true);
51.         tileImage.setCacheHint(CacheHint.QUALITY);
52.     }
53. }
```

TileController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setModel(TileModel)	100%		n/a		0	1	0	2	0	1
TileController()	100%		n/a		0	1	0	1	0	1
getModel()	100%		n/a		0	1	0	1	0	1
Total	0 of 10	100%	0 of 0	n/a	0	3	0	4	0	3

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TileController.java

```
1. package com.example.project.controllers.tiles;
2.
3. import com.example.project.models.tiles.TileModel;
4. import javafx.scene.Node;
5.
6. /**
7.  * Parent class of TileControllers.
8.  * @param <T> tile model type.
9. */
10. public abstract class TileController<T extends TileModel>
11. {
12.     /**
13.      * root ui node.
14.      * @return root ui Node
15.      */
16.     public abstract Node getRoot();
17.
18.     /**
19.      * Binds tile to the controller as its model.
20.      * @param tile tile to bind.
21.      */
22.     public abstract void bind(T tile);
23.
24.     /**
25.      * Set the model this controller will observe.
26.      * @param tile tile model class.
27.      */
28.     public void setModel(T tile){
29.         model = tile;
30.     }
31.
32.     protected T model;
33.
34.     /**
35.      * gets the tile model.
36.      * @return model.
37.      */
38.     public T getModel()
39.     {
40.         return this.model;
41.     }
42. }
```

TileControllerFactory

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
lambda\$createLetterTileController\$3(LetterTileController)		0%	n/a	1	1	1	1	1	1	1
createTileController(TileModel, Class)		100%		100%	0	4	0	6	0	1
createGenericTileController(TileModel)		100%	n/a	0	1	0	8	0	0	1
createUpgradeTileController(UpgradeTileModel)		100%	n/a	0	1	0	4	0	0	1
createLetterTileController(LetterTileModel)		100%	n/a	0	1	0	4	0	0	1
TileControllerFactory(FXMLLoaderPageLoader)		100%	n/a	0	1	0	4	0	0	1
addHoverEffects(Node, Runnable)		100%	n/a	0	1	0	3	0	0	1
lambda\$addHoverEffects\$0(Node, Runnable, MouseEvent)		100%	n/a	0	1	0	4	0	0	1
TileControllerFactory()		100%	n/a	0	1	0	2	0	0	1
lambda\$addHoverEffects\$1(Node, MouseEvent)		100%	n/a	0	1	0	3	0	0	1
lambda\$createUpgradeTileController\$2(UpgradeTileController)		100%	n/a	0	1	0	1	0	0	1
createEmptyTileController(EmptyTileSlotModel)		100%	n/a	0	1	0	1	0	0	1
Total	5 of 167	97%	0 of 4	100%	1	15	0	38	1	12

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TileControllerFactory.java

```
1. package com.example.project.controllers.tiles;
2.
3. import com.example.project.models.tiles.EmptyTileSlotModel;
4. import com.example.project.models.tiles.LetterTileModel;
5. import com.example.project.models.tiles.TileModel;
6. import com.example.project.models.tiles.UpgradeTileModel;
7. import com.example.project.services.FXMLPageLoader;
8. import javafx.scene.Node;
9.
10. import java.io.IOException;
11.
12. /**
13.  * class to load the tile model controller for that tile model type.
14. */
15. public class TileControllerFactory
16. {
17.     private FXMLPageLoader loader = new FXMLPageLoader();
18.
19.     /**
20.      * Creates instance of {@link TileControllerFactory}.
21.     */
22.     public TileControllerFactory() {}
23.
24.     protected TileControllerFactory(FXMLPageLoader loader)
25.     {
26.         this.loader = loader;
27.     }
28.
29.     /**
30.      * create tile controller.
31.      * @param tileObject tile object.
32.      * @param <C> class of tile controller.
33.      * @param <T> class of tile.
34.      * @return returns controller of the tile.
35.     */
36.     private <C extends TileController<T>, T extends TileModel> C createGenericTileController(T tileObject)
37.     {
38.         try
39.         {
40.             String fxmlPath = tileObject.getFXMLPath();
41.             loader.load(fxmlPath);
42.             C controller = loader.getController();
43.             controller.setModel(tileObject);
44.             controller.bind(tileObject);
45.             return controller;
46.         } catch (IOException e) {
47.             throw new RuntimeException("Failed to create tile controller: " + tileObject.getFXMLPath(), e);
48.         }
49.     }
50.
51.     private void addHoverEffects(Node pane, Runnable onEnter)
52.     {
53.         pane.setOnMouseEntered(e -> {
54.             pane.setScaleX(1.1);
55.             pane.setScaleY(1.1);
56.             onEnter.run();
57.         });
58.         pane.setOnMouseExited(e -> {
59.             pane.setScaleX(1.0);
60.             pane.setScaleY(1.0);
61.         });
62.     }
63.
64.     /**
65.      * @param upgradeTile upgrade tile model.
66.      * @return new upgrade tile controller.
67.     */
68.     private UpgradeTileController createUpgradeTileController(UpgradeTileModel upgradeTile)
69.     {
70.         UpgradeTileController upgradeTileController = createGenericTileController(upgradeTile);
71.         var pane = upgradeTileController.getRoot();
72.         addHoverEffects(pane, () -> upgradeTileController.getModel().getHoverSoundPlayer().replay());
73.         return upgradeTileController;
74.     }
75.
76.     /**
77.      * Returns controller of type.
78.      * @param tile tile model.
```

```
79.     * @param controllerType controller type.
80.     * @return return controller.
81.     * @param <C> controller type.
82.     * @param <T> tile type.
83.     */
84.     public <C extends TileController<T>, T extends TileModel> C createTileController(T tile, Class<C> controllerType)
85.     {
86.         var controller = switch (tile)
87.         {
88.             case UpgradeTileModel upgradeTileModel -> createUpgradeTileController(upgradeTileModel);
89.             case LetterTileModel letterTile -> createLetterTileController(letterTile);
90.             case EmptyTileSlotModel emptyTileSlotModel -> createEmptyTileController(emptyTileSlotModel);
91.             default -> throw new IllegalArgumentException("Unsupported tile type: " + tile.getClass());
92.         };
93.
94.         return controllerType.cast(controller);
95.     }
96.
97.     /**
98.      * @param lt letter tile model.
99.      * @return returns letter tile controller.
100.     */
101.    public LetterTileController createLetterTileController(LetterTileModel lt)
102.    {
103.        LetterTileController controller = createGenericTileController(lt);
104.        var pane = controller.getRoot();
105.        addHoverEffects(pane, () -> controller.getModel().getHoverSoundPlayer().replay());
106.        return controller;
107.    }
108.
109.    /**
110.     * @param emptyTile empty tile model.
111.     * @return returns empty tile controller.
112.     */
113.    private EmptyTileSlotController createEmptyTileController(EmptyTileSlotModel emptyTile){
114.        return createGenericTileController(emptyTile);
115.    }
116. }
```

InfiniteFloatingAnimation.java

```
1. package com.example.project.controllers.gameScreens.animations;
2.
3. import javafx.animation.TranslateTransition;
4. import javafx.scene.Node;
5. import javafx.util.Duration;
6.
7. import java.util.Random;
8.
9. /**
10. * floating tile animation.
11. */
12. public class InfiniteFloatingAnimation
13. {
14.     private final Random random = new Random();
15.
16.     /**
17.      * apply to node.
18.      * @param node node.
19.      * @param intervalSeconds time between changing directions.
20.      */
21.     public void apply(Node node, double intervalSeconds)
22.     {
23.         moveToRandom(node, intervalSeconds, intervalSeconds);
24.     }
25.
26.     private void moveToRandom(Node node, double minD, double maxD)
27.     {
28.         // pick random target position
29.         double x = random.nextDouble(0, 10);
30.         double y = random.nextDouble(0, 10);
31.
32.         double duration = minD + random.nextDouble() * (maxD - minD);
33.
34.         TranslateTransition tt = new TranslateTransition(Duration.seconds(duration), node);
35.         tt.setToX(x);
36.         tt.setToY(y);
37.         tt.setInterpolator(javafx.animation.Interpolator.LINEAR); // constant speed
38.
39.         // when done, pick a new target
40.         tt.setOnFinished(e -> moveToRandom(node, minD, maxD));
41.         tt.play();
42.     }
43. }
```

UpgradeTileController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
bind(UpgradeTileModel)		20%		50%	1	2	12	14	0	1
getRoot()		0%		n/a	1	1	1	1	1	1
UpgradeTileController()		100%		n/a	0	1	0	1	0	1
Total	53 of 69	23%	1 of 2	50%	2	4	13	16	1	3

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UpgradeTileController.java

```
1. package com.example.project.controllers.tiles;
2.
3. import com.example.project.models.tiles.TileModel;
4. import com.example.project.models.tiles.UpgradeTileModel;
5. import com.example.project.controllers.gameScreens.TooltipSetup;
6. import javafx.fxml.FXML;
7. import javafx.scene.Node;
8. import javafx.scene.image.Image;
9. import javafx.scene.image.ImageView;
10. import javafx.scene.layout.StackPane;
11.
12. import javafx.scene.shape.Rectangle;
13.
14. /**
15. * Controls the upgrade tile view fxml file.
16. */
17. public class UpgradeTileController extends TileController<UpgradeTileModel>
18. {
19.     @FXML
20.     protected StackPane root;
21.
22.     @FXML
23.     protected ImageView imageView;
24.
25.     public Node getRoot()
26.     {
27.         return root;
28.     }
29.
30.     public void bind(UpgradeTileModel tileModel)
31.     {
32.         var path = getClass().getResource(tileModel.getAbilityImagePath());
33.         if (path == null) { throw new RuntimeException("path null"); }
34.         var url = path.toExternalForm();
35.         var image = new Image(url);
36.         this.imageView.setImage(image);
37.
38.         Rectangle clip = new Rectangle();
39.         // set corner radii
40.         clip.setArcWidth(TileModel.CORNER_RADIUS);
41.         clip.setArcHeight(TileModel.CORNER_RADIUS);
42.
43.         clip.widthProperty().bind(imageView.fitWidthProperty());
44.         clip.heightProperty().bind(imageView.fitHeightProperty());
45.
46.         imageView.setClip(clip);
47.
48.         TooltipSetup tooltip = new TooltipSetup();
49.         tooltip.setupTooltip(this.root, TooltipSetup.Element.UPGRADE, model);
50.     }
51. }
```

com.example.project.controllers.tiles

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C LetterTileController		0%		n/a	4	4	13	13	4	4	1	1
C UpgradeTileController		23%		50%	2	4	13	16	1	3	0	1
C TileControllerFactory		97%		100%	1	15	0	38	1	12	0	1
C EmptyTileSlotController		100%		100%	0	8	0	14	0	5	0	1
C TileController		100%		n/a	0	3	0	4	0	3	0	1
Total	112 of 350	68%	1 of 12	91%	7	34	26	85	6	27	1	5

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com.example.project.controllers.tiles

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxt	Missed	Lines	Missed	Methods	Missed	Classes
LetterTileController.java		0%	n/a	4	4	13	13	4	4	4	1	1
UpgradeTileController.java		23%		50%	2	4	13	16	1	3	0	1
TileControllerFactory.java		97%		100%	1	15	0	38	1	12	0	1
EmptyTileSlotController.java		100%		100%	0	8	0	14	0	5	0	1
TileController.java		100%	n/a	0	3	0	4	0	3	0	0	1
Total	112 of 350	68%	1 of 12	91%	7	34	26	85	6	27	1	5

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RootLayoutController

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
toggleSound()		0%		0%	3	3	5	5	1	1
setContent(Parent)		0%		n/a	1	1	3	3	1	1
initialize()		0%		n/a	1	1	4	4	1	1
RootLayoutController()		0%		n/a	1	1	2	2	1	1
Total	49 of 49	0%	4 of 4	0%	6	6	14	14	4	4

Created with JaCoCo 0.8.12.202403310830

RootLayoutController.java

```
1. package com.example.project.controllers;
2.
3. import com.example.project.services.sound.GameMusicPlayer;
4. import com.example.project.services.SVGIcons;
5. import javafx.fxml.FXML;
6. import javafx.scene.Parent;
7. import javafx.scene.control.Button;
8. import javafx.scene.layout.BorderPane;
9. import javafx.scene.layout.StackPane;
10.
11.
12. /**
13. * Root layout that remains the root scene of the application to switch scenes within.
14. */
15. public class RootLayoutController
16. {
17.     @FXML
18.     private BorderPane rootPane;
19.
20.     @FXML
21.     private StackPane contentPane;
22.
23.     @FXML
24.     private StackPane headerPane;
25.
26.     @FXML
27.     Button soundToggle;
28.
29.     private final GameMusicPlayer musicPlayer = new GameMusicPlayer();
30.
31.     private boolean isPlaying;
32.
33.     /**
34.      * @param page Set page content to a game scene.
35.     */
36.     public void setContent(Parent page) {
37.         contentPane.getChildren().clear();
38.         contentPane.getChildren().add(page);
39.     }
40.
41.     @FXML
42.     void initialize()
43.     {
44.         soundToggle.setGraphic(SVGIcons.getCogIcon());
45.         musicPlayer.playGameMusicLoop();
46.         this.isPlaying = true;
47.     }
48.
49.     @FXML
50.     private void toggleSound()
51.     {
52.         if (isPlaying){
53.             musicPlayer.mute();
54.         }
55.         else{
56.             musicPlayer.unMute();
57.         }
58.
59.         isPlaying = !isPlaying;
60.     }
61. }
```

com.example.project.controllers

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C RootLayoutController	0%		0%		6	6	14	14	4	4	1	1
Total	49 of 49	0%	4 of 4	0%	6	6	14	14	4	4	1	1

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com.example.project.controllers

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
RootLayoutController.java	 0%	0%	 0%	0%	6	6	14	14	4	4	1	1
Total	49 of 49	0%	4 of 4	0%	6	6	14	14	4	4	1	1

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DailyRewardModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
applyReward(DailyRewardType)		0%		0%	3	3	5	5	1	1
DailyRewardModel(Session, SceneManager)		0%		n/a	1	1	4	4	1	1
rollReward()		0%		n/a	1	1	1	1	1	1
Total	47 of 47	0%	3 of 3	0%	5	5	10	10	3	3

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DailyRewardModel.java

```
1. package com.example.project.models.gameScreens;
2.
3. import com.example.project.services.SceneManager;
4. import com.example.project.services.Session;
5.
6. import java.time.LocalDate;
7. import java.util.List;
8. import java.util.Random;
9.
10. /**
11.  * Model for handling daily reward logic and state.
12. */
13. public class DailyRewardModel extends GameScreenModel
14. {
15.     /**
16.      * Constructor.
17.      * @param session session.
18.      * @param sceneManager scene manager.
19.      */
20.     public DailyRewardModel(Session session, SceneManager sceneManager)
21.     {
22.         super(session, sceneManager);
23.     }
24.
25.     private final List<DailyRewardType> possibleRewards = List.of(
26.         DailyRewardType.Daily_Reward_Won_1Dollar,
27.         DailyRewardType.Daily_Reward_Won_5Dollars,
28.         DailyRewardType.Daily_Reward_Won_NOTHING
29.     );
30.
31.     private final Random random = new Random();
32.
33.     /**
34.      * Randomly selects a daily reward.
35.      * @return a randomly selected reward
36.      */
37.     public DailyRewardType rollReward() {
38.         return possibleRewards.get(random.nextInt(possibleRewards.size()));
39.     }
40.
41.     /**
42.      * Applies the effect of the given reward to the session and marks it as claimed.
43.      * @param reward the reward to apply
44.      */
45.     public void applyReward(DailyRewardType reward)
46.     {
47.         switch (reward) {
48.             case Daily_Reward_Won_1Dollar -> session.modifyMoney(1);
49.             case Daily_Reward_Won_5Dollars -> session.modifyMoney(5);
50.             case Daily_Reward_Won_NOTHING -> {
51.                 // no-op
52.             }
53.         }
54.
55.         session.setLastRewardDate(LocalDate.now());
56.     }
57. }
```

LevelScoreSequence

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
• LevelScoreSequence(List, LevelModel, Label, Label)		0%		0%	2	2	16	16	1	1
• lambda\$new\$0(LevelModel, LetterTileController, ActionEvent)		0%		n/a	1	1	3	3	1	1
Total	94 of 94	0%	2 of 2	0%	3	3	19	19	2	2

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DailyRewardType

Element	Missed Instructions Cov.	Missed Branches Cov.	Missed Cxty	Missed Lines	Missed Methods
 static {...}	0%	n/a	1 1	4 4	1 1
Total	21 of 21	0% 0 of 0	n/a	1 1	4 4

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DailyRewardType.java

```
1. package com.example.project.models.gameScreens;
2.
3. /**
4.  * Enum representing the possible daily reward outcomes.
5. */
6. public enum DailyRewardType {
7.     /**
8.      * Player wins $1
9.     */
10.    Daily_Reward_Won_1Dollar,
11.
12.    /**
13.     * Player wins $5
14.     */
15.    Daily_Reward_Won_5Dollars,
16.
17.    /**
18.     * Player wins nothing
19.     */
20.    Daily_Reward_Won_NOTHING
21. }
```

GameScreenModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
• getSession()		0%		n/a	1	1	1	1	1	1
• getSceneManager()		0%		n/a	1	1	1	1	1	1
• GameScreenModel(Session, SceneManager)		100%		n/a	0	1	0	5	0	1
Total	6 of 20	70%	0 of 0	n/a	2	3	2	7	2	3

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GameScreenModel.java

```
1. package com.example.project.models.gameScreens;
2.
3. import com.example.project.services.Logger;
4. import com.example.project.services.SceneManager;
5. import com.example.project.services.Session;
6.
7. /**
8. * Game Screen Model. extended by loginModel, shopModel, levelModel.
9. */
10. public abstract class GameScreenModel
11. {
12.     protected Logger logger = new Logger();
13.
14.     protected final Session session;
15.
16.     protected final SceneManager sceneManager;
17.
18.     /**
19.      * Get session.
20.      * @return session.
21.     */
22.     public Session getSession() { return session; }
23.
24.     /**
25.      * get scene manager
26.      * @return scene manager
27.     */
28.     public SceneManager getSceneManager() { return sceneManager; }
29.
30.     protected GameScreenModel (Session session, SceneManager sceneManager)
31.     {
32.         this.sceneManager = sceneManager;
33.         this.session = session;
34.     }
35. }
```

LevelModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
getPlayersTotalPoints()	■	0%		n/a	1	1	1	1	1	1
getTileScoreSoundPlayer()	■	0%		n/a	1	1	1	1	1	1
LevelModel(Session, Logger, SceneManager)	■■■■■	100%		n/a	0	1	0	13	0	1
LevelModel(Session, SceneManager)	■■■■■	100%		n/a	0	1	0	13	0	1
tryMoveTile(LetterTileModel)	■■■■■	100%	■■■■■	100%	0	6	0	11	0	1
onWonLevel()	■■■■■	100%	■■■■■	100%	0	2	0	9	0	1
tryMoveTileToRedrawArea(LetterTileModel)	■■■■■	100%	■■■■■	66%	2	4	0	5	0	1
tryMoveToTileRack(LetterTileModel)	■■■■■	100%	■■■■■	75%	1	3	0	7	0	1
refillTileTack()	■■■■■	100%	■■■■■	100%	0	2	0	5	0	1
tryMoveTileToWordArea(LetterTileModel)	■■■■■	100%	■■■■■	50%	2	3	0	4	0	1
calcTotalWordScore()	■■■■■	100%	■■■■■	100%	0	2	0	4	0	1
getCurrentWord()	■■■■■	100%	■■■■■	100%	0	2	0	5	0	1
generateLetters()	■■■■■	100%	■■■■■	100%	0	2	0	4	0	1
addToCombo(LetterTileModel)	■■■■■	100%		n/a	0	1	0	3	0	1
returnRedrawTilesToTheRack()	■■■■■	100%	■■■■■	100%	0	2	0	3	0	1
redrawTiles()	■■■■■	100%		n/a	0	1	0	4	0	1
playTiles()	■■■■■	100%		n/a	0	1	0	4	0	1
setupNewLevel()	■■■■■	100%		n/a	0	1	0	5	0	1
hasWon()	■■■■■	100%	■■■■■	100%	0	2	0	1	0	1
onLostLevel()	■■■■■	100%		n/a	0	1	0	4	0	1
hasLost()	■■■■■	100%	■■■■■	100%	0	2	0	1	0	1
resetLevelVariables()	■■■■■	100%		n/a	0	1	0	3	0	1
getWordWindowTilesProperty()	■■■■■	100%		n/a	0	1	0	1	0	1
getTileRackTilesProperty()	■■■■■	100%		n/a	0	1	0	1	0	1
getRedrawWindowTilesProperty()	■■■■■	100%		n/a	0	1	0	1	0	1
addTileToWordWindow(LetterTileModel)	■■■■■	100%		n/a	0	1	0	2	0	1
addTileToRack(LetterTileModel)	■■■■■	100%		n/a	0	1	0	2	0	1
addTileToRedrawWindow(LetterTileModel)	■■■■■	100%		n/a	0	1	0	2	0	1
isCurrentWordValid()	■■■■■	100%		n/a	0	1	0	1	0	1
setIsRedrawActive(boolean)	■■■■■	100%		n/a	0	1	0	2	0	1
setWordPoints(int)	■■■■■	100%		n/a	0	1	0	2	0	1
setWordMulti(int)	■■■■■	100%		n/a	0	1	0	2	0	1
setTotalScore(int)	■■■■■	100%		n/a	0	1	0	2	0	1
getWordPointsProperty()	■■■■■	100%		n/a	0	1	0	1	0	1
getPlayersCurrentPoints()	■■■■■	100%		n/a	0	1	0	1	0	1
getWordMultiProperty()	■■■■■	100%		n/a	0	1	0	1	0	1
getIsRedrawActive()	■■■■■	100%		n/a	0	1	0	1	0	1
Total	7 of 618	98%	5 of 40	87%	7	57	2	122	2	37

LevelModel.java

```
1. package com.example.project.models.gameScreens;
2.
3. import com.example.project.models.tiles.LetterTileModel;
4. import com.example.project.models.tiles.UpgradeTileModel;
5. import com.example.project.services.GameScene;
6. import com.example.project.services.Logger;
7. import com.example.project.services.SceneManager;
8. import com.example.project.services.Session;
9. import com.example.project.models.tiles.ScrabbleTileProvider;
10. import com.example.project.services.sqlite.DAOs.DictionaryDAO;
11. import javafx.beans.property.*;
12. import javafx.collections.FXCollections;
13. import javafx.collections.ObservableList;
14.
15.
16. /**
17. * Represents the level model.
18. */
19. public class LevelModel extends GameScreenModel
20. {
21.     private final ObservableList<LetterTileModel> wordWindowTiles = FXCollections.observableArrayList();
22.     private final ObservableList<LetterTileModel> tileRackTiles = FXCollections.observableArrayList();
23.     private final ObservableList<LetterTileModel> redrawWindowTiles = FXCollections.observableArrayList();
24.     private final ReadOnlyBooleanWrapper isRedrawActive = new ReadOnlyBooleanWrapper(false);
25.     private final ReadOnlyIntegerWrapper wordPoints = new ReadOnlyIntegerWrapper(0);
26.     private final ReadOnlyIntegerWrapper wordMulti = new ReadOnlyIntegerWrapper(1);
27.     private final ReadOnlyIntegerWrapper playersTotalPoints = new ReadOnlyIntegerWrapper(0);
28.     private final DictionaryDAO dictionary = new DictionaryDAO();
29.
30.     private final ScoreChimePlayer tileScoreSoundPlayer = new ScoreChimePlayer();
31.     private final ScrabbleTileProvider scrabbleLettersBalancer = new ScrabbleTileProvider();
32.
33.     protected LevelModel(Session session, Logger logger, SceneManager sceneManager)
34.     {
35.         super(session, sceneManager);
36.         this.logger = logger;
37.     }
38.
39.     /**
40.      * Default constructor.
41.      * @param session session
42.      * @param sceneManager scene manager.
43.      */
44.     public LevelModel(Session session, SceneManager sceneManager)
45.     {
46.         super(session, sceneManager);
47.         generateLetters();
48.     }
49.
50.     /**
51.      * Gets the tile score sound effect player.
52.      * @return LevelTileScoreSoundPlayer.
53.      */
54.     public ScoreChimePlayer getTileScoreSoundPlayer() { return this.tileScoreSoundPlayer; }
55.
56.     /**
57.      * @return Read-only list of tiles currently in the word area
58.      */
59.     public ReadOnlyListProperty<LetterTileModel> getWordWindowTilesProperty() {
60.         return new ReadOnlyListWrapper<>(wordWindowTiles).getReadOnlyProperty();
61.     }
62.
63.     /**
64.      * @return Read-only list of tiles currently in the rack
65.      */
66.     public ReadOnlyListProperty<LetterTileModel> getTileRackTilesProperty() {
67.         return new ReadOnlyListWrapper<>(tileRackTiles).getReadOnlyProperty();
68.     }
69.
70.     /**
71.      * @return Read-only list of tiles currently in the redraw window.
72.      */
73.     public ReadOnlyListProperty<LetterTileModel> getRedrawWindowTilesProperty() {
74.         return new ReadOnlyListWrapper<>(redrawWindowTiles).getReadOnlyProperty();
75.     }
76.     /**
77.      * @return the total points property to observe.
78.      */
```

```

79.     public ReadOnlyIntegerProperty getPlayersTotalPoints() {
80.         return playersTotalPoints.getReadOnlyProperty();
81.     }
82.
83.     /**
84.      * @return the sum combo points property to observe.
85.     */
86.     public ReadOnlyIntegerProperty getWordPointsProperty() {
87.         return wordPoints.getReadOnlyProperty();
88.     }
89.
90.     /**
91.      * @return the players current level points property to observe.
92.     */
93.     public ReadOnlyIntegerProperty getPlayersCurrentPoints() { return playersTotalPoints.getReadOnlyProperty(); }
94.
95.     /**
96.      * word multiplier.
97.      * @return multiplier.
98.     */
99.     public ReadOnlyIntegerProperty getWordMultiProperty() {
100.        return wordMulti.getReadOnlyProperty();
101.    }
102.
103.    /**
104.     * gets the redraw property.
105.     * @return returns indication if redraw active.
106.    */
107.    public ReadOnlyBooleanProperty getIsRedrawActive()
108.    {
109.        return isRedrawActive.getReadOnlyProperty();
110.    }
111.
112.    /**
113.     * set redraw active.
114.     * @param newValue get if redraw window is on screen.
115.    */
116.    public void setIsRedrawActive(boolean newValue)
117.    {
118.        this.isRedrawActive.set(newValue);
119.    }
120.
121.    protected void addTileToWordWindow(LetterTileModel tile)
122.    {
123.        this.wordWindowTiles.add(tile);
124.    }
125.
126.    protected void addTileToRack(LetterTileModel tile)
127.    {
128.        this.tileRackTiles.add(tile);
129.    }
130.
131.    protected void addTileToRedrawWindow(LetterTileModel tile)
132.    {
133.        this.redrawWindowTiles.add(tile);
134.    }
135.
136.    /**
137.     * Called when the level has been lost.
138.     * resets the players session info and logs back out to the login screen.
139.    */
140.    public void onLostLevel()
141.    {
142.        this.resetLevelVariables();
143.        this.session.resetGame();
144.        this.sceneManager.switchScene(GameScene.MAINMENU);
145.    }
146.
147.    /**
148.     * Called when level has been won.
149.     * reset the per level info: redraws plays. Goes to shop window.
150.    */
151.    public void onWonLevel()
152.    {
153.        //award money equal to remaining plays
154.        int remainingPlays = this.session.getCurrentPlays().get();
155.        if (remainingPlays > 0)
156.        {
157.            session.getMoneyProperty().set(session.getMoneyProperty().get() + remainingPlays);
158.            this.logger.logMessage(String.format("You Won! Awarded $%d for %d remaining plays",
159.                remainingPlays, remainingPlays));
160.        }
161.
```

```

162.     this.resetLevelVariables();
163.     this.session.updateLevelInfo();
164.     this.sceneManager.switchScene(GameScene.SHOP);
165. }
166.
167. /**
168.  * returns true if player has won.
169.  * @return value indicating if player has won.
170. */
171. public boolean hasWon()
172. {
173.     return (this.session.getLevelRequirement().get() <= this.playersTotalPoints.get());
174. }
175.
176. /**
177.  * true if player has lost
178.  * @return value indicating if player has lost.
179. */
180. public boolean hasLost()
181. {
182.     return this.session.getCurrentPlays().get() == 0;
183. }
184.
185. /**
186.  * Attempts to move a tile from rack to word area
187.  * @param tile The tile to move
188.  * @return true if move was successful, false otherwise
189. */
190. private boolean tryMoveTileToWordArea(LetterTileModel tile) {
191.     if (tileRackTiles.contains(tile) && wordWindowTiles.size() < session.getWordWindowSize()) {
192.         tileRackTiles.remove(tile);
193.         wordWindowTiles.add(tile);
194.     }
195.     return wordWindowTiles.contains(tile);
196. }
197.
198. /**
199.  * Attempts to move a tile from rack to redraw area
200.  * @param tile The tile to move
201.  * @return true if move was successful, false otherwise
202. */
203. private boolean tryMoveTileToRedrawArea(LetterTileModel tile)
204. {
205.     if (redrawWindowTiles.size() < session.getRedrawWindowSize() && !redrawWindowTiles.contains(tile))
206.     {
207.         var rowItsIn = tileRackTiles.contains(tile) ? tileRackTiles : wordWindowTiles;
208.         rowItsIn.remove(tile);
209.         redrawWindowTiles.add(tile);
210.     }
211.
212.     return redrawWindowTiles.contains(tile);
213. }
214.
215. /**
216.  * Attempts to move a tile from word area or redraw area to rack
217.  * @param tile The tile to move
218.  * @return true if move was successful, false otherwise
219. */
220. private boolean tryMoveToTileRack(LetterTileModel tile) {
221.     if (wordWindowTiles.contains(tile)) {
222.         wordWindowTiles.remove(tile);
223.         tileRackTiles.add(tile);
224.     } else if (redrawWindowTiles.contains(tile)) {
225.         redrawWindowTiles.remove(tile);
226.         tileRackTiles.add(tile);
227.     }
228.
229.     return tileRackTiles.contains(tile);
230. }
231.
232. /**
233.  * determines where tile should go and moves it
234.  * @param tile The tile to move
235.  * @return true if move was successful, false otherwise
236. */
237. public boolean tryMoveTile(LetterTileModel tile) {
238.     boolean moved = false;
239.
240.     // When no redraw window is open.
241.     if (!isRedrawActive.get()) {
242.         if (tileRackTiles.contains((tile))) {
243.             moved = tryMoveTileToWordArea(tile);
244.         }

```

```

245.     else if (wordWindowTiles.contains(tile)) {
246.         moved = tryMoveToTileRack(tile);
247.     }
248.     // when redraw window is open.
249.     else
250.     {
251.         if (!redrawWindowTiles.contains(tile)) {
252.             moved = tryMoveTileToRedrawArea(tile);
253.         }
254.         else {
255.             moved = tryMoveToTileRack(tile);
256.         }
257.     }
258. }
259.
260. if (moved) { tile.getClackSoundPlayer().replay(); }
261. return moved;
262. }
263.
264. /**
265. * Gets the current word formed by tiles in the word area
266. * @return returns current word string.
267. */
268. public String getCurrentWord() {
269.     StringBuilder word = new StringBuilder();
270.     for (LetterTileModel tile : wordWindowTiles) {
271.         word.append(tile.getLetter());
272.     }
273.     return word.toString();
274. }
275.
276. /**
277. * returns true if word is in dictionary.
278. * @return value indicating if word is valid.
279. */
280. public boolean isCurrentWordValid(){
281.     return dictionary.isWordInDictionary(this.getCurrentWord());
282. }
283.
284. /**
285. * redraws tiles into the tile rack and removes from redraw window.
286. */
287. public void redrawTiles()
288. {
289.     this.session.getCurrentRedraws().set(this.session.getCurrentRedraws().get() - 1);
290.     this.redrawWindowTiles.clear();
291.     refillTileTack();
292. }
293.
294. /**
295. * add combo sum and multiCombo
296. * @param tile tile.
297. */
298. public void addToCombo(LetterTileModel tile) {
299.     this.wordPoints.set(this.wordPoints.get() + tile.getValue());
300.     this.wordMulti.set(this.wordMulti.get());
301. }
302.
303. /**
304. * @return total score int
305. */
306. public int calcTotalWordScore() {
307.     for (UpgradeTileModel upgrade : session.getPlayersUpgradesProperty().get())
308.     {
309.         upgrade.runUpgradeEffect(this);
310.     }
311.
312.     return this.wordPoints.get() * this.wordMulti.get();
313. }
314.
315. /**
316. * sets the current word points before multipliers
317. * @param newWordPoints the new word points value
318. */
319. public void setWordPoints(int newWordPoints) {
320.     this.wordPoints.set(newWordPoints);
321. }
322.
323. /**
324. * sets the current word multiplier
325. * @param newMulti the new multiplier value
326. */
327. public void setWordMulti(int newMulti) {

```

```

328.     this.wordMulti.set(newMulti);
329. }
330.
331. /**
332. * @param totalScore from calcTotalScore
333. * sets Total Score
334. */
335. public void setTotalScore(int totalScore){
336.     this.playersTotalPoints.set(totalScore);
337. }
338.
339. /**
340. * clears the word row tiles. and refills the tile rack. and decreases the plays left.
341. */
342. public void playTiles()
343. {
344.     this.wordWindowTiles.clear();
345.     this.refillTileTack();
346.     this.session.getCurrentPlays().set(this.session.getCurrentPlays().get() - 1);
347. }
348.
349. /**
350. * sends the selected redraw tiles back to the rack
351. */
352. public void returnRedrawTilesToTheRack() {
353.     for (int i = 0; i < redrawWindowTiles.size(); i++) {
354.         tryMoveToTileRack(redrawWindowTiles.get(i));
355.     }
356. }
357.
358. /**
359. * Initialise new level. Clears word row, redraw rack. draws new tiles for the player's tile rack.
360. */
361. public void setupNewLevel()
362. {
363.     this.wordWindowTiles.clear();
364.     this.returnRedrawTilesToTheRack();
365.     isRedrawActive.set(false);
366.     this.session.resetPlaysRedraws();
367. }
368.
369. private void resetLevelVariables()
370. {
371.     this.playersTotalPoints.set(0);
372.     this.session.resetPlaysRedraws();
373. }
374.
375. private void generateLetters() {
376.     for (int i = 0; i < session.getHandSize(); i++) {
377.         var newLetter = new LetterTileModel(this.scrabbleLettersBalancer.drawRandomTile());
378.         this.tileRackTiles.add(newLetter); // Start all tiles in rack
379.     }
380. }
381.
382. /**
383. * Refills tile rack. Only up to the hand size allowed this level.
384. */
385. private void refillTileTack()
386. {
387.     var tilesPlayerHas = tileRackTiles.size() + wordWindowTiles.size() + redrawWindowTiles.size();
388.     var tilesToReplace = (this.session.getHandSize() - tilesPlayerHas);
389.     for (int i = 0; i < tilesToReplace; i++){
390.         tileRackTiles.add(new LetterTileModel(this.scrabbleLettersBalancer.drawRandomTile()));
391.     }
392. }
393. }

```

LoginModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
● isInputLegal(String, String)	100%	100%	91%	91%	1	7	0	13	0	1
● onLoginClicked(String, String)	100%	100%	100%	100%	0	3	0	10	0	1
● onSignUpClicked(String, String)	100%	100%	100%	100%	0	3	0	8	0	1
● LoginModel(Session, SceneManager, UsersDAO, PasswordHasher)	100%	100%		n/a	0	1	0	5	0	1
● doesPasswordMatch(String, String)	100%	100%		n/a	0	1	0	2	0	1
● getWelcomeTextProperty()	100%	100%		n/a	0	1	0	1	0	1
Total	0 of 144	100%	1 of 20	95%	1	16	0	39	0	6

Created with JaCoCo 0.8.12.202403310830

LoginModel.java

```
1. package com.example.project.models.gameScreens;
2.
3. import com.example.project.models.User;
4. import com.example.project.services.PasswordHasher;
5. import com.example.project.services.Session;
6. import com.example.project.services.sqlite.dAOs.UsersDAO;
7. import com.example.project.services.GameScene;
8. import com.example.project.services.SceneManager;
9. import javafx.beans.property.ReadOnlyStringProperty;
10. import javafx.beans.property.ReadOnlyStringWrapper;
11.
12. /**
13.  * Login model class.
14. */
15. public class LoginModel extends GameScreenModel
16. {
17.     private final UsersDAO usersDAO;
18.     private final PasswordHasher passwordHasher;
19.
20.     private final ReadOnlyStringWrapper infoText = new ReadOnlyStringWrapper("");
21.
22.     /**
23.      * Gets the info text property.
24.      * @return ReadonlyStringProperty.
25.     */
26.     public ReadOnlyStringProperty getWelcomeTextProperty(){
27.         return this.infoText;
28.     }
29.
30.     /**
31.      * constructor.
32.      * @param session session to use for the game.
33.      * @param sceneManager scenes.
34.      * @param dao users database implementation.
35.      * @param passwordHasher password hasher for this login
36.     */
37.     public LoginModel(Session session, SceneManager sceneManager, UsersDAO dao, PasswordHasher passwordHasher)
38.     {
39.         super(session, sceneManager);
40.         this.usersDAO = dao;
41.         this.passwordHasher = passwordHasher;
42.     }
43.
44.     /**
45.      * @param username username
46.      * @param password password
47.      * @return returns value indicating if login is valid.
48.     */
49.     private boolean doesPasswordMatch(String username, String password)
50.     {
51.         var user = this.usersDAO.getUser(username);
52.         return this.passwordHasher.doesPasswordMatch(password, user.getPassword());
53.     }
54.
55.     /**
56.      * @param username username.
57.      * @param password password.
58.     */
59.     public void onLoginClicked(String username, String password)
60.     {
61.         if (!this.usersDAO.doesUserExist(username)) {
62.             this.infoText.set("No account found. Sign up first.");
63.             return;
64.         }
65.
66.         if (!this.doesPasswordMatch(username, password)) {
67.             this.infoText.set("Incorrect password.");
68.             return;
69.         }
70.
71.         var user = this.usersDAO.getUser(username);
72.         this.session.setUser(user);
73.         this.sceneManager.switchScene(GameScene.MAINMENU);
74.     }
75.
76.     /**
77.      * returns value indicating if the input is legal. Illegal if blank.
78.      * @param username username.
```

```

79.     * @param password password.
80.     * @return value indicating if the input is legal.
81.     */
82.     private boolean isInputLegal(String username, String password)
83.     {
84.         if (username.isBlank() || password.isBlank()) {
85.             this.infoText.set("Fields cannot be empty.");
86.             return false;
87.         }
88.
89.         if (username.length() < 3 || username.length() > 30) {
90.             this.infoText.set("Username must be between 3-30 characters long.");
91.             return false;
92.         }
93.
94.         if (password.length() < 8) {
95.             this.infoText.set("Password must be at least 8 characters.");
96.             return false;
97.         }
98.
99.         if (password.equals(username)) {
100.             this.infoText.set("Password must not match username.");
101.             return false;
102.         }
103.
104.         return true;
105.     }
106.
107. /**
108. * Adds user to database.
109. * @param username username
110. * @param password password
111. */
112. public void onSignUpClicked(String username, String password)
113. {
114.     if (!isInputLegal(username, password)){
115.         return;
116.     }
117.
118.     if (this.usersDAO.doesUserExist(username))
119.     {
120.         this.infoText.set("Already signed up. Click login.");
121.         return;
122.     }
123.
124.     this.usersDAO.addUser(new User(username, password, 0));
125.     this.infoText.set("User added successfully.");
126. }
127. }

```

MainMenuModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
MainMenuModel(Session, SceneManager)	100%		n/a	0	1	0	2	0	1	
onStartClicked()	100%		n/a	0	1	0	2	0	1	
onLogoutClicked()	100%		n/a	0	1	0	2	0	1	
Total	0 of 15	100%	0 of 0	n/a	0	3	0	6	0	3

Created with JaCoCo 0.8.12.202403310830

MainMenuModel.java

```
1. package com.example.project.models.gameScreens;
2.
3. import com.example.project.services.GameScene;
4. import com.example.project.services.SceneManager;
5. import com.example.project.services.Session;
6.
7. /**
8. * main menu model class
9. */
10. public class MainMenuModel extends GameScreenModel
11. {
12.     /**
13.      * constructor.
14.      * @param session session to use for the game.
15.      * @param sceneManager scenes.
16.      */
17.     public MainMenuModel(Session session, SceneManager sceneManager)
18.     {
19.         super(session, sceneManager);
20.     }
21.
22.     /**
23.      * switches to the level screen
24.      */
25.     public void onStartClicked()
26.     {
27.         this.sceneManager.switchScene(GameScene.LEVEL);
28.     }
29.
30.     /**
31.      * switches to the login screen
32.      */
33.     public void onLogoutClicked()
34.     {
35.         this.sceneManager.switchScene(GameScene.LOGIN);
36.     }
37. }
38. }
```

LevelScoreSequence.java

```
1. package com.example.project.controllers.gameScreens.animations;
2.
3. import com.example.project.controllers.tiles.LetterTileController;
4. import com.example.project.models.gameScreens.LevelModel;
5. import javafx.animation.*;
6. import javafx.scene.control.Label;
7. import javafx.scene.paint.Color;
8. import javafx.util.Duration;
9.
10. import java.util.List;
11.
12. /**
13. * Animates each level tile popping up and the score text increasing for every tile in the word row.
14. */
15. public class LevelScoreSequence extends AnimationWrapper
16. {
17.     /**
18.      * Constructor.
19.      * @param wordTileControllers tiles to animate.
20.      * @param levelModel level model.
21.      * @param comboCountLabel the text label to add the sum to.
22.      * @param multiplierLabel the text label to add the multi to.
23.      */
24.     public LevelScoreSequence(List<LetterTileController> wordTileControllers, LevelModel levelModel, Label comboCountLabel, Label multiplierLabel)
25.     {
26.         super();
27.
28.         for (LetterTileController control : wordTileControllers)
29.         {
30.             var translateUp = new TranslateTransition(Duration.seconds(0.1), control.getRoot());
31.             translateUp.setByY(-10);
32.             translateUp.setOnFinished(e ->
33.             {
34.                 levelModel.addToCombo(control.getModel());
35.                 levelModel.getTileScoreSoundPlayer().playNextNote();
36.             });
37.
38.             this.sequentialAnimation.getChildren().add(translateUp);
39.             var pointsTextColour = multiplierLabel.getTextFill();
40.             var multiplierTextColour = comboCountLabel.getTextFill();
41.             TextEmphasisAnimation sumComboSequence = new TextEmphasisAnimation(comboCountLabel, Color.GREEN, pointsTextColour, Duration.seconds(0));
42.             TextEmphasisAnimation multiComboSequence = new TextEmphasisAnimation(multiplierLabel, Color.GREEN, multiplierTextColour, Duration.seconds(0));
43.             this.sequentialAnimation.getChildren().addAll(sumComboSequence.getChildren());
44.             this.sequentialAnimation.getChildren().addAll(multiComboSequence.getChildren());
45.         }
46.
47.         // After all tiles
48.         var timeDelay = new PauseTransition(Duration.seconds(1));
49.         this.sequentialAnimation.getChildren().add(timeDelay);
50.     }
51. }
```

ScoreChimePlayer

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
● playNextNote()		0%		0%	2	2	5	5	1	1
● reset()		0%	n/a	n/a	1	1	2	2	1	1
● ScoreChimePlayer()		100%	n/a	n/a	0	1	0	12	0	1
Total	26 of 107	75%	2 of 2	0%	3	4	7	19	2	3

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ScoreChimePlayer.java

```
1. package com.example.project.models.gameScreens;
2.
3.
4. import com.example.project.services.sound.GameSoundPlayer;
5.
6. import java.util.List;
7.
8. /**
9. * plays a note from the F major scale ascending in pitch each time for a nice score combo sound.
10.*/
11. public class ScoreChimePlayer
12. {
13.     private final GameSoundPlayer F_4 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/F_4.wav");
14.     private final GameSoundPlayer G_4 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/G_4.wav");
15.     private final GameSoundPlayer A_4 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/A_4.wav");
16.     private final GameSoundPlayer Bb_4 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/Bb_4.wav");
17.     private final GameSoundPlayer C_4 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/C_4.wav");
18.     private final GameSoundPlayer D_4 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/D_5.wav");
19.     private final GameSoundPlayer E_4 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/E_5.wav");
20.     private final GameSoundPlayer F_5 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/F_5.wav");
21.     private final GameSoundPlayer G_5 = new GameSoundPlayer("/com/example/project/Sounds/scoreSounds/G_5.wav");
22.
23.     private final List<GameSoundPlayer> theCMajorScale = List.of(F_4, G_4, A_4, Bb_4, C_4, D_4, E_4, F_5, G_5);
24.
25.     private int currentNote = 0;
26.
27.     /**
28.      * resets back to 0.
29.     */
30.     public void reset(){
31.         currentNote = 0;
32.     }
33.
34.     /**
35.      * plays the note then increments the int index.
36.     */
37.     public void playNextNote()
38.     {
39.         if (theCMajorScale.size() == currentNote){
40.             reset();
41.         }
42.
43.         theCMajorScale.get(currentNote).replay();
44.         currentNote++;
45.     }
46. }
```

ShopModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
tryPurchase(UpgradeTileModel)		100%		100%	0	3	0	14	0	1
regenerateShopItems()		100%		100%	0	2	0	4	0	1
ShopModel(Session, SceneManager)		100%		n/a	0	1	0	4	0	1
ShopModel(Session, SceneManager, Logger)		100%		n/a	0	1	0	3	0	1
onNextLevelPressed()		100%		n/a	0	1	0	2	0	1
getCurrentShopItemsProperty()		100%		n/a	0	1	0	1	0	1
Total	0 of 121	100%	0 of 6	100%	0	9	0	28	0	6

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ShopModel.java

```

1. package com.example.project.models.gameScreens;
2.
3. import com.example.project.models.tiles.UpgradeTileModel;
4. import com.example.project.services.GameScene;
5. import com.example.project.services.Logger;
6. import com.example.project.services.SceneManager;
7. import com.example.project.services.Session;
8. import com.example.project.services.shopItems.UpgradeTiles;
9. import javafx.beans.property.ListProperty;
10. import javafx.beans.property.SimpleListProperty;
11. import javafx.collections.FXCollections;
12.
13. /**
14. * Shop Model.
15. */
16. public class ShopModel extends GameScreenModel
17. {
18.     protected final int numberOfWorkItems = 3;
19.
20.     private final ListProperty<UpgradeTileModel> currentInShop = new SimpleListProperty<>(FXCollections.observableArrayList());
21.
22.     /**
23.      * Current items in the shop row that you can buy.
24.      * @return shop items.
25.     */
26.     public ListProperty<UpgradeTileModel> getCurrentShopItemsProperty(){
27.         return currentInShop;
28.     }
29.
30.     /**
31.      * Constructor for tests.
32.      * @param session session.
33.      * @param logger logger to use.
34.     */
35.     protected ShopModel(Session session, SceneManager sceneManager, Logger logger)
36.     {
37.         this(session, sceneManager);
38.         this.logger = logger;
39.     }
40.
41.     /**
42.      * Constructor
43.      * @param session game session.
44.      * @param sceneManager scenes.
45.     */
46.     public ShopModel(Session session, SceneManager sceneManager)
47.     {
48.         super(session, sceneManager);
49.     }
50.
51.     /**
52.      * create new shop items.
53.     */
54.     public void regenerateShopItems()
55.     {
56.         currentInShop.clear();
57.         for (int i = 0; i < numberOfWorkItems; i++)
58.         {
59.             currentInShop.add(UpgradeTiles.getRandomUpgradeTile());
60.         }
61.     }
62.
63.     /**
64.      * This should attempt to purchase an upgrade tile from the shop.
65.      * Verifies the player has sufficient funds, deducts the cost, removes the item
66.      * from the shop, and logs the transaction.
67.      * @param tileClickedOn the upgrade tile the player is trying to purchase
68.      * @throws IllegalArgumentException if tileClickedOn is empty (null)
69.      * @see Session#addUpgrade(UpgradeTileModel) for adding to player's collection
70.     */
71.     public void tryPurchase(UpgradeTileModel tileClickedOn)
72.     {
73.         if (tileClickedOn == null) {
74.             throw new IllegalArgumentException("Cannot purchase null tile");
75.         }
76.
77.         if (session.getMoneyProperty().get() >= tileClickedOn.getCost())
78.         {
79.             currentInShop.remove(tileClickedOn);
80.             session.addUpgrade(tileClickedOn);
81.             session.modifyMoney(tileClickedOn.getCost());
82.         }
83.     }
84. }
```

```
83.         this.logger.logMessage(String.format("Purchased %s for $%.2f",
84.             tileClickedOn.getName(),
85.             tileClickedOn.getCost()));
86.     }
87.     else
88.     {
89.         // TODO: some indication that they can't afford. money sfx or red currency emphasis.
90.         this.logger.logMessage(String.format("Cannot afford %s (costs $%.2f, have $%f)",
91.             tileClickedOn.getName(),
92.             tileClickedOn.getCost(),
93.             session.getMoneyProperty().get()));
94.     }
95. }
96.
97. /**
98. * exists shop and increments level requirement for the next level.
99. */
100. public void onNextLevelPressed()
101. {
102.     sceneManager.switchScene(GameScene.LEVEL);
103. }
104. }
```

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com.example.project.models.gameScreens

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C DailyRewardModel		0%		0%	5	5	10	10	3	3	1	1
C ScoreChimePlayer		75%		0%	3	4	7	19	2	3	0	1
C DailyRewardType		0%		n/a	1	1	4	4	1	1	1	1
C LevelModel		98%		87%	7	57	2	122	2	37	0	1
C GameScreenModel		70%		n/a	2	3	2	7	2	3	0	1
C LoginModel		100%		95%	1	16	0	39	0	6	0	1
C ShopModel		100%		100%	0	9	0	28	0	6	0	1
C MainMenuModel		100%		n/a	0	3	0	6	0	3	0	1
Total	107 of 1,093	90%	11 of 71	84%	19	98	25	235	10	62	2	8

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com.example.project.models.gameScreens

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
DailyRewardModel.java		0%		0%	5	5	10	10	3	3	1	1
ScoreChimePlayer.java		75%		0%	3	4	7	19	2	3	0	1
DailyRewardType.java		0%		n/a	1	1	4	4	1	1	1	1
LevelModel.java		98%		87%	7	57	2	122	2	37	0	1
GameScreenModel.java		70%		n/a	2	3	2	7	2	3	0	1
LoginModel.java		100%		95%	1	16	0	39	0	6	0	1
ShopModel.java		100%		100%	0	9	0	28	0	6	0	1
MainMenuModel.java		100%		n/a	0	3	0	6	0	3	0	1
Total	107 of 1,093	90%	11 of 71	84%	19	98	25	235	10	62	2	8

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DefinitionPopup

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
setIsDefinitionActive(boolean)		0%		0%	3	3	5	5	1	1
setPopup(String)		0%		n/a	1	1	5	5	1	1
definitionProperty()		0%		n/a	1	1	1	1	1	1
wordProperty()		0%		n/a	1	1	1	1	1	1
getIsDefinitionActive()		0%		n/a	1	1	1	1	1	1
getFXMLPath()		0%		n/a	1	1	1	1	1	1
DefinitionPopup()		100%		n/a	0	1	0	4	0	1
Total	52 of 73	28%	4 of 4	0%	8	9	14	18	6	7

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DefinitionPopup.java

```

1. package com.example.project.models.popups;
2. import com.example.project.services.sqlite.dAOs.DictionaryDAO;
3. import javafx.beans.property.*;
4.
5. /**
6. * Represents Definition window called when a word is played
7. */
8. public class DefinitionPopup extends PopupModel {
9.
10.    private final ReadOnlyStringWrapper definition = new ReadOnlyStringWrapper("lorem ipsum");
11.
12.    private final ReadOnlyStringWrapper word = new ReadOnlyStringWrapper("lorem");
13.
14.    private final ReadOnlyBooleanWrapper isDefinitionActive = new ReadOnlyBooleanWrapper(false);
15.
16.    /**
17.     * @return returns property of definition
18.     */
19.    public ReadOnlyStringProperty definitionProperty(){
20.        return definition.getReadOnlyProperty();
21.    }
22.
23.    /**
24.     * @return returns property of word
25.     */
26.    public ReadOnlyStringProperty wordProperty(){
27.        return word.getReadOnlyProperty();
28.    }
29.
30.    /**
31.     * @return returns boolean
32.     */
33.    public ReadOnlyBooleanProperty getIsDefinitionActive(){
34.    {
35.        return isDefinitionActive.getReadOnlyProperty();
36.    }
37.
38.    /**
39.     * toggle isDefinitionActive
40.     * @param newState current state of definition window
41.     */
42.    public void setIsDefinitionActive(boolean newState)
43.    {
44.        if(this.isDefinitionActive.get() == newState) { return; }
45.        if (newState){getPaperSoundPlayer().replay();}
46.        else {getReversePaperSoundPlayer().replay();}
47.        this.isDefinitionActive.set(newState);
48.    }
49.
50.    /**
51.     * @param currentWord Word, when OnPlayButton is passed
52.     */
53.    public void setPopup(String currentWord){
54.        word.set(currentWord);
55.        DictionaryDAO dictionary = new DictionaryDAO();
56.        currentWord = currentWord.toLowerCase();
57.        definition.set(dictionary.getWordDefinition(currentWord));
58.    }
59.
60.    // TODO this is only used here are there other classes with popups? Otherwise can remove parent Popup class and just have a single concrete DefinitionPopup model and controller.
61.    @Override
62.    public String getFXMLPath() {
63.        return "/com/example/project/PopUps/DefinitionView.fxml";
64.    }
65. }

```

PopupModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
getPaperSoundPlayer()		0%	n/a		1	1	1	1	1	1
getReversePaperSoundPlayer()		0%	n/a		1	1	1	1	1	1
PopupModel()		100%	n/a		0	1	0	3	0	1
Total	6 of 21	71%	0 of 0	n/a	2	3	2	5	2	3

Created with JaCoCo 0.8.12.202403310830

PopupModel.java

```
1. package com.example.project.models.popups;
2.
3. import com.example.project.services.sound.GameSoundPlayer;
4.
5. /**
6.  * Parent class for popup windows
7. */
8. public abstract class PopupModel {
9.
10.    /**
11.     * gets FXML path
12.     * @return string path
13.    */
14.    public abstract String getFXMLPath();
15.
16.    protected final GameSoundPlayer paperSoundPlayer = new GameSoundPlayer("/com/example/project/Sounds/PaperFlip.wav");
17.
18.    protected final GameSoundPlayer reversePaperSoundPlayer = new GameSoundPlayer("/com/example/project/Sounds/PaperFlipReversed.wav");
19.    /**
20.     * gets paper sound player
21.     * @return sound player
22.    */
23.    public GameSoundPlayer getPaperSoundPlayer() {return paperSoundPlayer;}
24.
25.    /**
26.     * gets reversed paper sound player
27.     * @return sound player
28.    */
29.    public GameSoundPlayer getReversePaperSoundPlayer() {return reversePaperSoundPlayer;}
30. }
```

ScoreTimeline

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
animateTotalScore(int, int, Label, long)		0%	n/a		1	1	10	10	1	1
lambda\$animateTotalScore\$0(IntegerProperty, int, Label, ActionEvent)		0%		0%	2	2	4	4	1	1
lambda\$animateTotalScore\$1(Label, int, ActionEvent)		0%	n/a		1	1	2	2	1	1
ScoreTimeline()		0%	n/a		1	1	1	1	1	1
Total	70 of 70	0%	2 of 2	0%	5	5	17	17	4	4

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com.example.project.models.popups

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C DefinitionPopup		28%		0%	8	9	14	18	6	7	0	1
C PopupModel		71%		n/a	2	3	2	5	2	3	0	1
Total	58 of 94	38%	4 of 4	0%	10	12	16	23	8	10	0	2

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com.example.project.models.popups

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
DefinitionPopup.java		28%		0%	8	9	14	18	6	7	0	1
PopupModel.java		71%		n/a	2	3	2	5	2	3	0	1
Total	58 of 94	38%	4 of 4	0%	10	12	16	23	8	10	0	2

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LetterTileGroup

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
updateVisuals()	100%	100%	100%	n/a	0	3	0	6	0	1
LetterTileGroup(int, Pane, ReadOnlyListProperty, Consumer, List, TileControllerFactory)	100%	100%	100%	n/a	0	2	0	5	0	1
createEmptySlots()	100%	100%	100%	n/a	0	1	0	4	0	1
loadEmptySlotIntoContainer()	100%	100%	100%	n/a	0	1	0	5	0	1
LetterTileGroup(int, Pane, ReadOnlyListProperty, Consumer)	100%	100%	100%	n/a	0	1	0	3	0	1
LetterTileGroup(int, Pane, ReadOnlyListProperty, Consumer, List)	100%	100%	100%	n/a	0	1	0	1	0	1
lambda\$new\$1(List, ObservableValue, ObservableList, ObservableList)	100%	100%	100%	n/a	0	1	0	1	0	1
lambda\$new\$0(List, ObservableValue, ObservableList, ObservableList)	100%	100%	100%	n/a	0	1	0	1	0	1
Total	0 of 136	100%	0 of 6	100%	0	11	0	29	0	8

Created with JaCoCo 0.8.12.202403310830

LetterTileGroup.java

```
1. package com.example.project.models.tileGroups;
2.
3. import com.example.project.controllers.tiles.EmptyTileSlotController;
4. import com.example.project.controllers.tiles.LetterTileController;
5. import com.example.project.models.tiles.EmptyTileSlotModel;
6. import com.example.project.models.tiles.LetterTileModel;
7. import com.example.project.controllers.tiles.TileControllerFactory;
8. import javafx.beans.property.ReadOnlyListProperty;
9. import javafx.scene.layout.Pane;
10. import java.util.ArrayList;
11. import java.util.List;
12. import java.util.function.Consumer;
13.
14. /**
15. * tile group that observes an observable list and updates the ui Tile Controller's nodes into their EmptyTileSlotController nodes.
16. */
17. public class LetterTileGroup extends TileGroup<LetterTileModel, LetterTileController>
18. {
19.     private final List<EmptyTileSlotController> tileSlots = new ArrayList<>();
20.     private final int numberofEmptyTileSlots;
21.
22.     protected LetterTileGroup(int numberofEmptyTileSlots, Pane container,
23.                               ReadOnlyListProperty<LetterTileModel> observedList,
24.                               Consumer<LetterTileController> onClickHandler,
25.                               List<Runnable> afterSyncActions,
26.                               TileControllerFactory factory)
27.     {
28.         super(container, onClickHandler, LetterTileController.class, observedList);
29.         this.tileControllerFactory = factory;
30.         observedList.addListener((obs, oldVal, newVal) -> afterSyncActions.forEach(Runnable::run));
31.         this.numberofEmptyTileSlots = numberofEmptyTileSlots;
32.         createEmptySlots();
33.     }
34.
35.     /**
36.      * Constructor
37.      * @param numberofEmptyTileSlots number of max tiles in group (empty slots)
38.      * @param container container to place all in.
39.      * @param observedList the observed list.
40.      * @param onClickHandler On tile click action.
41.      * @param afterSyncActions additional synchronisation actions that need to happen when this observed list changes.
42.      */
43.     public LetterTileGroup(int numberofEmptyTileSlots, Pane container,
44.                           ReadOnlyListProperty<LetterTileModel> observedList,
45.                           Consumer<LetterTileController> onClickHandler,
46.                           List<Runnable> afterSyncActions)
47.     {
48.         this(numberofEmptyTileSlots, container, observedList, onClickHandler);
49.         observedList.addListener((obs, oldVal, newVal) -> afterSyncActions.forEach(Runnable::run));
50.     }
51.
52.     /**
53.      * Constructor
54.      * @param numberofEmptyTileSlots number of max tiles in group (empty slots)
55.      * @param container container to place all in.
56.      * @param observedList the observed list.
57.      * @param onClickAction On tile click action.
58.      */
59.     public LetterTileGroup(int numberofEmptyTileSlots, Pane container,
60.                           ReadOnlyListProperty<LetterTileModel> observedList,
61.                           Consumer<LetterTileController> onClickAction)
62.     {
63.         super(container, onClickAction, LetterTileController.class, observedList);
64.         this.numberofEmptyTileSlots = numberofEmptyTileSlots;
65.         createEmptySlots();
66.     }
67.
68.     /**
69.      * Create empty slots for both word area and tile rack
70.      */
71.     private void createEmptySlots()
72.     {
73.         tileSlots.clear();
74.
75.         for (var i = 0; i < numberofEmptyTileSlots; i++)
76.         {
77.             var emptyTileController = loadEmptySlotIntoContainer();
78.             tileSlots.add(emptyTileController);
79.         }
80.     }
81.
82.     /**
83.      * Load a new empty slot into a container
84.      */
```

```
85.     private EmptyTileSlotController loadEmptySlotIntoContainer()
86.     {
87.         // TODO: this model should store empty tiles and the controller of this should observe those.
88.         var emptyTile = new EmptyTileSlotModel();
89.         EmptyTileSlotController controller = tileControllerFactory.createTileController(emptyTile, EmptyTileSlotController.class);
90.         container.getChildren().add(controller.getRoot());
91.         return controller;
92.     }
93.
94.     @Override
95.     protected void updateVisuals()
96.     {
97.         // update visuals
98.         for (EmptyTileSlotController rowsEmptyTile : tileSlots) {
99.             rowsEmptyTile.setLetter(null);
100.        }
101.
102.         for (int i = 0; i < tileControllers.size(); i++){
103.             tileSlots.get(i).setLetter(tileControllers.get(i));
104.         }
105.     }
106. }
```

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TileGroup

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
● lambda\$recreateControllers\$1(TileController, MouseEvent)		0%	n/a		1	1	1	1	1	1
● recreateControllers()		100%		75%	1	3	0	8	0	1
● TileGroup(Pane, Class, ReadOnlyListProperty)		100%	n/a		0	1	0	9	0	1
● TileGroup(Pane, Consumer, Class, ReadOnlyListProperty)		100%	n/a		0	1	0	3	0	1
● syncTiles()		100%	n/a		0	1	0	3	0	1
● getControllers()		100%	n/a		0	1	0	1	0	1
● lambda\$new\$0(ObservableValue, ObservableList, ObservableList)		100%	n/a		0	1	0	1	0	1
Total	5 of 92	94%	1 of 4	75%	2	9	0	24	1	7

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TileGroup.java

```
1. package com.example.project.models.tileGroups;
2.
3. import com.example.project.controllers.tiles.TileController;
4. import com.example.project.models.tiles.TileModel;
5. import com.example.project.controllers.tiles.TileControllerFactory;
6. import javafx.beans.property.ReadOnlyListProperty;
7. import javafx.scene.layout.Pane;
8.
9. import java.util.ArrayList;
10. import java.util.List;
11. import java.util.function.Consumer;
12.
13. /**
14. * Tile Group abstract class holds a row or column of tiles.
15. * @param <modelType> tile model type.
16. * @param <controllerType> controller type.
17. */
18. public abstract class TileGroup<modelType extends TileModel, controllerType extends TileController<modelType>>
19. {
20.     protected final Pane container;
21.     protected final List<controllerType> tileControllers = new ArrayList<>();
22.     protected TileControllerFactory tileControllerFactory = new TileControllerFactory();
23.     protected Consumer<controllerType> onClickAction = null;
24.     private final Class<controllerType> controllerClass;
25.     private final ReadOnlyListProperty<modelType> observedModels;
26.
27.     TileGroup(Pane container, Consumer<controllerType> onClickAction, Class<controllerType> tileControllerClass, ReadOnlyListProperty<modelType> observedList)
28.     {
29.         this(container, tileControllerClass, observedList);
30.         this.onClickAction = onClickAction;
31.     }
32.
33.     TileGroup(Pane container, Class<controllerType> tileControllerClass, ReadOnlyListProperty<modelType> observedList)
34.     {
35.         this.container = container;
36.         this.controllerClass = tileControllerClass;
37.         this.observedModels = observedList;
38.         this.observedModels.addListener((obs, oldVal, newVal) -> syncTiles());
39.     }
40.
41.     private void recreateControllers()
42.     {
43.         tileControllers.clear();
44.         for (modelType tile : this.observedModels)
45.         {
46.             controllerType controller = tileControllerFactory.createTileController(tile, controllerClass);
47.             tileControllers.add(controller);
48.
49.             if (onClickAction != null){
50.                 controller.getRoot().setOnMouseClicked(e -> onClickAction.accept(controller));
51.             }
52.         }
53.     }
54.
55.     protected abstract void updateVisuals();
56.
57. /**
58. * Sync tiles in this tile groups controller.
59. */
60. public void syncTiles()
61. {
62.     recreateControllers();
63.     updateVisuals();
64. }
65.
66. /**
67. * Gets the groups tile controllers.
68. * @return the letter tile groups controllers
69. */
70. public List<controllerType> getControllers(){
71.     return tileControllers;
72. }
```

UpgradeTileGroup

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
UpgradeTileGroup(Pane, ReadOnlyListProperty)		0%	n/a		1	1	2	2	1	1
updateVisuals()		100%		100%	0	2	0	5	0	1
Total	6 of 37	83%	0 of 2	100%	1	4	2	9	1	3

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UpgradeTileGroup.java

```
1. package com.example.project.models.tileGroups;
2.
3. import com.example.project.controllers.tiles.UpgradeTileController;
4. import com.example.project.models.tiles.UpgradeTileModel;
5. import javafx.beans.property.ReadOnlyListProperty;
6. import javafx.scene.layout.Pane;
7. import java.util.function.Consumer;
8.
9. /**
10. * tile group that observes an observable list and updates the ui nodes for some game tiles.
11. */
12. public class UpgradeTileGroup extends TileGroup<UpgradeTileModel, UpgradeTileController>
13. {
14.     /**
15.      * Constructor.
16.      * @param container container all tiles are in.
17.      * @param observedList the observed list that when changes this tile group will sync.
18.      * @param onClickAction additional synchronisation actions that need to be called.
19.     */
20.     public UpgradeTileGroup(Pane container, ReadOnlyListProperty<UpgradeTileModel> observedList, Consumer<UpgradeTileController> onClickAction)
21.     {
22.         super(container, onClickAction, UpgradeTileController.class, observedList);
23.     }
24.
25.     /**
26.      * Constructor with no additional sync action parameter.
27.      * @param container container tiles are in.
28.      * @param observedList the observed list that when changes this tile group will sync.
29.     */
30.     public UpgradeTileGroup(Pane container, ReadOnlyListProperty<UpgradeTileModel> observedList)
31.     {
32.         super(container, UpgradeTileController.class, observedList);
33.     }
34.
35.     @Override
36.     protected void updateVisuals()
37.     {
38.         container.getChildren().clear();
39.
40.         // update visuals
41.         for (var controller : tileControllers)
42.         {
43.             container.getChildren().add(controller.getRoot());
44.         }
45.     }
46. }
```

com.example.project.models.tileGroups

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
C UpgradeTileGroup		83%		100%	1	4	2	9	1	3	0	1
C TileGroup		94%		75%	2	9	0	24	1	7	0	1
C LetterTileGroup		100%		100%	0	11	0	29	0	8	0	1
Total	11 of 265	95%	1 of 12	91%	3	24	2	62	2	18	0	3

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com.example.project.models.tileGroups

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods	Missed	Classes
UpgradeTileGroup.java		83%		100%	1	4	2	9	1	3	0	1
TileGroup.java		94%		75%	2	9	0	24	1	7	0	1
LetterTileGroup.java		100%		100%	0	11	0	29	0	8	0	1
Total	11 of 265	95%	1 of 12	91%	3	24	2	62	2	18	0	3

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ScoreTimeline.java

```
1. package com.example.project.controllers.gameScreens.animations;
2. import javafx.animation.KeyFrame;
3. import javafx.animation.Timeline;
4. import javafx.beans.property.IntegerProperty;
5. import javafx.beans.property.SimpleIntegerProperty;
6. import javafx.scene.control.Label;
7. import javafx.util.Duration;
8.
9. /**
10. * Class for total score counter animation
11. */
12. public class ScoreTimeline {
13.     /**
14.      * @param totalDurationMillis total duration
15.      * @param startScore int from current total score
16.      * @param endScore int from calculated current score
17.      * @param currentScoreLabel Label for total score
18.      * @return timeline of total score counter
19.     */
20.     public Timeline animateTotalScore(int startScore, int endScore, Label currentScoreLabel, long totalDurationMillis) {
21.         // Total scoring timeline
22.         Timeline scoreTimeline = new Timeline();
23.         IntegerProperty currentScore = new SimpleIntegerProperty(startScore);
24.
25.         int scoreDifference = endScore - startScore;
26.
27.         int steps = scoreDifference;
28.
29.         double durationPerStepMillis = (double) totalDurationMillis / steps;
30.
31.         scoreTimeline.getKeyFrames().add(
32.             new KeyFrame(Duration.millis(durationPerStepMillis), event -> {
33.                 if (currentScore.get() < endScore) {
34.                     currentScore.set(currentScore.get() + 1);
35.                     currentScoreLabel.setText(String.valueOf(currentScore.get()));
36.                 }
37.             })
38.         );
39.         scoreTimeline.setCycleCount(steps);
40.
41.         scoreTimeline.setOnFinished(event -> {
42.             currentScoreLabel.setText(String.valueOf(endScore));
43.         });
44.
45.         return scoreTimeline;
46.     }
47. }
```

EmptyTileSlotModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
EmptyTileSlotModel()	100%		n/a		0	1	0	2	0	1
getTile()	100%		n/a		0	1	0	1	0	1
setTile(LetterTileModel)	100%		n/a		0	1	0	2	0	1
getFXMLPath()	100%		n/a		0	1	0	1	0	1
Total	0 of 21	100%	0 of 0	n/a	0	4	0	6	0	4

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EmptyTileSlotModel.java

```
1. package com.example.project.models.tiles;
2.
3.
4. import javafx.beans.property.SimpleObjectProperty;
5.
6. /**
7. * An empty tile slot model. Empty tile slots store a letter tile.
8. */
9. public class EmptyTileSlotModel extends TileModel
10.
11.     private SimpleObjectProperty<LetterTileModel> currentTile = new SimpleObjectProperty<>(null);
12.
13.     /**
14.     * get letter tile in slot.
15.     * @return letter tile.
16.     */
17.     public LetterTileModel getTile(){
18.         return this.currentTile.get();
19.     }
20.
21.     /**
22.     * Set a new tile.
23.     * @param tile letter tile.
24.     */
25.     public void setTile(LetterTileModel tile)
26.     {
27.         this.currentTile.set(tile);
28.     }
29.
30.     @Override
31.     public String getFXMLPath() {
32.         return "/com/example/project/SingleTiles/emptyTileSlot.fxml";
33.     }
34. }
```

LetterTileModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
• LetterTileModel(Character)	100%		n/a		0	1	0	5	0	1
• getLetter()	100%		n/a		0	1	0	1	0	1
• getValue()	100%		n/a		0	1	0	1	0	1
• getFXMLPath()	100%		n/a		0	1	0	1	0	1
Total	0 of 28	100%	0 of 0	n/a	0	4	0	8	0	4

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LetterTileModel.java

```
1. package com.example.project.models.tiles;
2.
3.
4. /**
5.  * Represents the letter tiles the player plays holds, redraws.
6. */
7. public class LetterTileModel extends TileModel
8. {
9.     private final Character letter;
10.
11.    private final Integer value;
12.
13.    /**
14.     * @param newLetter letter
15.     */
16.    public LetterTileModel(Character newLetter)
17.    {
18.        this.letter = Character.toUpperCase(newLetter);
19.        ScrabbleTileProvider provider = new ScrabbleTileProvider();
20.        this.value = provider.getValue(letter);
21.    }
22.
23.    /**
24.     * @return returns the tiles character.
25.     */
26.    public Character getLetter() {
27.        return letter;
28.    }
29.
30.    /**
31.     * @return base value of scrabble letter score.
32.     */
33.    public Integer getValue(){
34.        return this.value;
35.    }
36.
37.    @Override
38.    public String getFXMLPath() {
39.        return "/com/example/project/SingleTiles/letterTileView.fxml";
40.    }
41.}
```

ScrabbleTileProvider.ScrabbleTileData

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
ScrabbleTileProvider.ScrabbleTileData(int, int)	100%		n/a		0	1	0	1	0	1
Total	0 of 9	100%	0 of 0	n/a	0	1	0	1	0	1

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ScrabbleTileProvider

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
ScrabbleTileProvider()	100%	100%	100%	100%	0	2	0	38	0	1
getValue(Character)	100%	100%	100%	100%	0	2	0	2	0	1
drawRandomTile()	100%	100%	n/a	n/a	0	1	0	2	0	1
static {...}	100%	100%	n/a	n/a	0	1	0	1	0	1
seedRandomNumberGenerator(long)	100%	100%	n/a	n/a	0	1	0	2	0	1
Total	0 of 380	100%	0 of 4	100%	0	7	0	45	0	5

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ScrabbleTileProvider.java

```
1. package com.example.project.models.tiles;
2.
3. import java.util.Map;
4. import java.util.TreeMap;
5. import java.util.Random;
6.
7. /**
8. * Static class to store the scrabble base letter value.
9. */
10. public class ScrabbleTileProvider {
11.     /**
12.      * Constructor.
13.      */
14.     public ScrabbleTileProvider() {
15.         /**
16.          // Calculate total number of tiles by summing frequencies
17.          double totalTiles = this.baseLetterData.values().stream()
18.              .mapToInt(ScrabbleTileData::frequency)
19.              .sum();
20.
21.          double cumulativeFrequency = 0.0;
22.
23.          // Populate the cdfMap
24.          for (Map.Entry<Character, ScrabbleTileData> entry : baseLetterData.entrySet()) {
25.              cumulativeFrequency += entry.getValue().frequency();
26.              cdfMap.put(cumulativeFrequency / totalTiles, entry.getKey());
27.          }
28.      }
29. }
30.
31. /**
32. * @param value value of scrabble letter
33. * @param frequency population of tile
34. */
35. public record ScrabbleTileData(int value, int frequency)
36. {
37.
38.     private final TreeMap<Double, Character> cdfMap = new TreeMap<>();
39.     private static final Random random = new Random();
40.
41.     protected static void seedRandomNumberGenerator(long newSeed){
42.         random.setSeed(newSeed);
43.     }
44.
45.     private final Map<Character, ScrabbleTileData> baseLetterData = Map.ofEntries(
46.         Map.entry('a', new ScrabbleTileData(1, 9)),
47.         Map.entry('b', new ScrabbleTileData(3, 2)),
48.         Map.entry('c', new ScrabbleTileData(3, 2)),
49.         Map.entry('d', new ScrabbleTileData(2, 4)),
50.         Map.entry('e', new ScrabbleTileData(1, 12)),
51.         Map.entry('f', new ScrabbleTileData(4, 2)),
52.         Map.entry('g', new ScrabbleTileData(2, 3)),
53.         Map.entry('h', new ScrabbleTileData(4, 2)),
54.         Map.entry('i', new ScrabbleTileData(1, 9)),
55.         Map.entry('j', new ScrabbleTileData(8, 1)),
56.         Map.entry('k', new ScrabbleTileData(5, 1)),
57.         Map.entry('l', new ScrabbleTileData(1, 4)),
58.         Map.entry('m', new ScrabbleTileData(3, 2)),
59.         Map.entry('n', new ScrabbleTileData(1, 6)),
60.         Map.entry('o', new ScrabbleTileData(1, 8)),
61.         Map.entry('p', new ScrabbleTileData(3, 2)),
62.         Map.entry('q', new ScrabbleTileData(10, 1)),
63.         Map.entry('r', new ScrabbleTileData(1, 6)),
64.         Map.entry('s', new ScrabbleTileData(1, 4)),
65.         Map.entry('t', new ScrabbleTileData(1, 6)),
66.         Map.entry('u', new ScrabbleTileData(1, 4)),
67.         Map.entry('v', new ScrabbleTileData(4, 2)),
68.         Map.entry('w', new ScrabbleTileData(4, 2)),
69.         Map.entry('x', new ScrabbleTileData(8, 1)),
70.         Map.entry('y', new ScrabbleTileData(4, 2)),
71.         Map.entry('z', new ScrabbleTileData(10, 1))
72. );
73.
74. /**
75. * Returns Integer of the letter according to scrabble
76. * @param letter letter to get value of
77. * @return Integer value of the letter, or 0 if not found
78. */
```

```
79.     public int getValue(Character letter)
80.     {
81.         ScrabbleTileData data = baseLetterData.get(Character.toLowerCase(letter));
82.         return (data != null) ? data.value() : 0;
83.     }
84.
85.    /**
86.     * @return randomly selected tile based on CDF
87.     */
88.    public Character drawRandomTile() {
89.        // Generate a random float between 0.0 (inclusive) and 1.0 (exclusive)
90.        double randomFloat = random.nextDouble();
91.
92.        // Find the first entry in the CDF map whose key is greater than or equal to the random float.
93.        return cdfMap.tailMap(randomFloat, true).firstEntry().getValue();
94.    }
95.
96. }
```

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TileModel

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
TileModel()	100%		n/a		0	1	0	3	0	1
getHoverSoundPlayer()	100%		n/a		0	1	0	1	0	1
getClackSoundPlayer()	100%		n/a		0	1	0	1	0	1
Total	0 of 23	100%	0 of 0	n/a	0	3	0	5	0	3

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TileModel.java

```
1. package com.example.project.models.tiles;
2.
3. import com.example.project.services.sound.GameSoundPlayer;
4.
5. /**
6. * Parent tile class for objects in the scene that are tiles.
7. */
8. public abstract class TileModel
9.
10. {
11.     /**
12.      * gets the fxml path.
13.      * @return string path.
14.      */
15.     public abstract String getFXMLPath();
16.
17.     protected final GameSoundPlayer hoverSoundPlayer = new GameSoundPlayer("/com/example/project/Sounds/hover.wav", -80f);
18.     protected final GameSoundPlayer ClackSoundPlayer = new GameSoundPlayer("/com/example/project/Sounds/clack3.wav", 6f);
19.
20.     /**
21.      * gets the hover sound player
22.      * @return sound player
23.      */
24.     public GameSoundPlayer getHoverSoundPlayer() { return hoverSoundPlayer; }
25.
26.     /**
27.      * gets the sound player that plays the click sound.
28.      * @return sound player.
29.      */
30.     public GameSoundPlayer getClackSoundPlayer() {return ClackSoundPlayer;}
31.
32.     /**
33.      * corner radius (rounded corners).
34.      */
35.     public static final int CORNER_RADIUS = 20;
}
```

UpgradeEffects

Element	Missed Instructions	Cov.	Missed Branches	Cov.	Missed	Cxty	Missed	Lines	Missed	Methods
braceletEffect(LevelModel)		0%		0%	4	4	10	10	1	1
glassesEffect(LevelModel)		0%		0%	3	3	7	7	1	1
buttonEffect(LevelModel)		0%		0%	3	3	6	6	1	1
diceEffect(LevelModel)		0%		n/a	1	1	5	5	1	1
mirrorEffect(LevelModel)		0%		0%	2	2	6	6	1	1
coinEffect(LevelModel)		0%		0%	2	2	6	6	1	1
UpgradeEffects()		0%		n/a	1	1	1	1	1	1
Total	200 of 200	0%	18 of 18	0%	16	16	41	41	7	7

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