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|  | Dungeon of Dooom |
|  | **CM50109 Coursework 2**  **Document Two** |

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1. TEST PLAN

Testing is a crucial part of designing a software system. Testing enables us to make a clear concise design decisions early in development and by providing tests that match these designs ensures that if these design decisions are changed, appropriate attention and fair warning will be given to their impact. Kaner (2006) suggests that tests should not be absolute and final but should start off simply and evolve over time with the system. In line with this we aim to start with few, basic tests and add new tests as we add new features via Test Driven Development.

In this sense, we are closer to using Exploratory Testing rather than Automated Testing- that is, the responsibility for running tests belongs with the developer and not an automated system. We must vigilantly run tests ourselves.

Our intention is to exclude unit testing on Presentation layer for two reasons. On the one hand, the time we must complete this project is limited and we might not have time to do Integration tests on this layer. On the other hand, testing the graphical user interface is a difficult task that we would like to avoid because of our deadline.

We intend to test the system using Unit and Integration Tests, both Black-Box and White-Box, including boundary cases. Unit testing will likely necessitate that we use stubs and build our system in a component-oriented or modular way (ISTQB Exam Certification, n.d.).

* 1. Test-Driven Development

We will follow test-driven development, writing interfaces or stubs of our components first and tests for those unimplemented components.

* 1. Black-box Testing
     1. Database connection tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| ShouldConnectToDatabase | DatabaseConnection | n/a | An open database connection | Can generate a database connection |
| ShouldCloseDatabase | DatabaseConnection | n/a |  | Can close a generated connection |

* + 1. Database usage tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldReturnTrueIfNewPlayerValueIsAddedInDatabase | PlayerRepository | n/a | True if a new value is added on database | Can add a new player on the database. |
| shouldReturnTrueIfPlayerValueExistsInDatabase | PlayerRepository | n/a | True if the Player exists. | Check if a value exists on the database. |
| shouldReturnTrueIfPlayerValueIsDeleted | PlayerRepository | n/a | True if the Player was removed successfully. | Deletes an entry on the database. |
| shouldReturnTrueIfNewScoreValueIsAdded | ScoreRepository | n/a | True if a new value is added on the database. | Can add a new score on the database. |
| shouldReturnTrueIfScoreValueExistsInDatabase | ScoreRepository | n/a | True if the score exists. | Check if a value exists on the database |
| shouldReturnTrueIfScoreValueIsDeleted | ScoreRepository | n/a | True if the Score was removed successfully. | Deletes an entry on the database. |

* + 1. GameControllerTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldRespondToStatus | GameController | n/a | True if response status is equal to 200 | Test the GameController response for web services (status). |
| shouldRespondToMove | GameController | n/a | Unimplemented | Test the GameController response for web services (move) |

* + 1. MatchControllerTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldGiveCurrentMatchStatus | MatchController | n/a | True if match status response from web service is equal to expected value | Test the MatchController response for web services (status). |
| whenPlayerHasNoOngoingMatchStatusShouldReturnNull | MatchController | n/a | False if a player does not have an ongoing match | Test the MatchController response for web services (status) |
| shouldCreateNewMatch | MatchController | n/a | True if create a new match successfully | Test the MatchController use of MatchStatus class to create a new match. |
| shouldStartMatch | MatchController | n/a | True if start a new match successfully | Test the MatchController response for web services (start). |
| joinShouldAddUserToMatch | MatchController | n/a | True if join a match successfully | Test the MatchController response for web services (join). |
| listShouldListAllLobbyingMatches | MatchController | n/a | True if list of all matches is returned successfully | Test the MatchController response for web services (list). |
| leaveShouldRemovePlayerFromMatch | MatchController | n/a | True if match is removed from the list successfully | Test the MatchController response for web services (leave). |

* + 1. MyResourceTest

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| testGetIt | Main class (server) | n/a | True if web service path is valid | Test if our server initialize correctly. |

* + 1. PlayerControllerTest

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| whenDetailsAreValidShouldRegisterPlayer | PlayerController | n/a | True if player is registered successfully | Test the PlayerController response for web services (register). |
| whenUsernameEmptyRegisterShouldReturnValidationError | PlayerController | n/a | False if username is empty string | Test the PlayerController response for web services (register) |
| whenPasswordEmptyRegisterShouldReturnValidationError | PlayerController | n/a | False if password is empty string | Test the PlayerController response for web services (register) |
| whenPasswordTooLongRegisterShouldReturnValidationError | PlayerController | n/a | False if password is too long (>255 chars) | Test the PlayerController response for web services (register) |
| whenUsernameTooLongRegisterShouldReturnValidationError | PlayerController | n/a | False if username is too long (>255 chars) | Test the PlayerController response for web services (register) |
| whenUsernameAlreadyTakenRegisterShouldReturnValidationError | PlayerController | n/a | False if username already exists | Test the PlayerController response for web services (register) |
| whenDetailsValidLoginShouldReturnBlankOkStatus | PlayerController | n/a | True if register and login were successful | Test the PlayerController response for web services (register/login) |
| whenUsernameEmptyLoginShouldReturnValidationError | PlayerController | n/a | False if username is empty string | Test the PlayerController response for web services (login) |
| whenPasswordEmptyLoginShouldReturnValidationError | PlayerController | n/a | False if password is empty string | Test the PlayerController response for web services (login) |
| whenPasswordTooLongLoginShouldReturnValidationError | PlayerController | n/a | False if password is too long (>255 chars) | Test the PlayerController response for web services (login) |
| whenUsernameTooLongLoginShouldReturnValidationError | PlayerController | n/a | False if username is too long (>255 chars) | Test the PlayerController response for web services (login) |
| whenUsernameDoesNotExistLoginShouldReturnBlankAuthorisationError | PlayerController | n/a | False if Player does not exist in the database | Test the PlayerController response for web services (login) |

* 1. White-box Testing
     1. MatchListTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldGetLobbyingMatches | MatchList | n/a | True if we get all the initiated matches | Test the MatchList functionality by adding 2 type of matches (lobby and ongoing matches) |
| shouldGetMatchById | MatchList | n/a | True if we get the id of a match | Test the MatchList functionality |
| shouldGetMatchForPlayer | MatchList | n/a | True if a match exists for specific player | Test the MatchList functionality |

* + 1. MatchTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldAddCharacter | Match | n/a | True if a character is added to a match | Test the Match functionality |
| whenThereAreMultipleCharactersShouldGetCorrectCharacter | Match | n/a | True if we get a correct Player object when searching a match with character | Test the Match functionality |

* + 1. AuthenticationServiceTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| whenUsernameDoesNotExistRegisterShouldCreatePlayerAndReturnTrue | AuthenticationService | n/a | True if player entry is adding to database when register | Test the AuthenticationService functionality (Register) |
| whenUsernameDoesExistRegisterShouldReturnFalse | AuthenticationService | n/a | False if username exists on registration | Test the AuthenticationService functionality (Register) |
| whenDetailsAreValidLoginShouldReturnTrue | AuthenticationService | n/a | True if details are valid | Test the AuthenticationService functionality (Login) |
| whenPlayerDoesNotExistLoginShouldReturnFalse | AuthenticationService | n/a | False if player does not exist and try to log in | Test the AuthenticationService functionality (Login) |
| whenPasswordIsWrongLoginShouldReturnFalse | AuthenticationService | n/a | False if player’s password is wrong | Test the AuthenticationService functionality (Login) |

* + 1. IOServiceTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldGetAssetAtPath | IOService | n/a | True if path is set correctly | Test the IOService functionality (getString) |
| whenPathIsInvalidShouldThrowException | IOService | n/a | False if path is invalid | Test the IOService functionality (getString) |
| shouldParseJsonFile | IOService | n/a | True if JSON object was created succesfully | Test the IOService functionality (parseJSONObject) |
| whenJsonIsInvalidShouldThrownParseException | IOService | n/a | False if JSON file is invalid | Test the IOService functionality (parseJSONObject) |

* + 1. MatchServiceTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldCreateMatch | MatchService | n/a | True if a match was created | Test the MatchService functionality (createMatch) |
| WhenCreatingMatchShouldAssignRandomCharacterAndCoinPositions | MatchService | n/a | True if match was created and coins and character position were successfully set | Test the MatchService functionality (createMatch) |
| shouldStartMatch | MatchService | n/a | True if a match is started | Test the MatchService functionality (startMatch) |
| shouldGetMatchStatus | MatchService | n/a | True if match status was fetched successfully | Test the MatchService functionality (getStatus) |
| whenPlayerHasNoMatchGetStatusShouldReturnNull | MatchService | n/a | False if a match has no players | Test the MatchService functionality (getStatus) |
| endMatchShouldRemoveMatchFromMatchList | MatchService | n/a | True if a match was removed from a list when finished | Test the MatchService functionality (endMatch) |
| joinMatchShoulAddPlayerToMatch | MatchService | n/a | True if a player was added to a match | Test the MatchService functionality (joinMatch) |
| whenSqlExceptionoccursJoinMatchShouldThrowException | MatchService | n/a | False if SQL exception is thrown | Test the MatchService functionality (joinMatch) |
| getLobbyingMatchesShouldOnlyReturnMatchesInLobbyState | MatchService | n/a | True if only lobby matches and not ongoing matches are returned | Test the MatchService functionality (getLobbyingMatces) |
| whenNoMatchesInLobbyStateGetLobbyingMatchesShouldReturnEmptyArray | MatchService | n/a | True if no lobby matches exist and empty array is returned | Test the MatchService functionality (getLobbyingMatces) |

* + 1. MovementServiceTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldReturnTrueIfPlayerMovedToRightTile | MovementService | n/a | True if player moves to a valid tile (i.e. floor) | Test the MovementService functionality (move) |
| shouldReturnFalseIfPlayerMovedToRightTile | MovementService | n/a | False if player moves to an invalid tile (i.e. floor) | Test the MovementService functionality (move) |
| shouldReturnFalseIfPlayerMovesToWall | MovementService | n/a | False if player moves to a wall | Test the MovementService functionality (move) |
| shouldReturnTrueIfPlayerCantMoveToWall | MovementService | n/a | True if player does not move when he tries to move to a wall. | Test the MovementService functionality (move) |

* + 1. ParseServiceTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldGenerateMapFromJson | ParseService | n/a | True if a map was created from JSON file. | Test the ParseService functionality (parseMap) |
| whenJsonIsInvalidShouldThrowException | ParseService | n/a | False if JSON file is invalid | Test the ParseService functionality (parseMap) |

* + 1. StateServiceTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldGetCurrentStateOfGame | StateService | n/a | True if current state of game was fetched successfully | Test the StateService functionality (GetState) |

* + 1. VisibilityServiceTests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test name | Component being tested | Input | Expected output | Purpose |
| shouldReturnTrueIfTheTile34IsVisible | VisibilityService | n/a | True if a specified tile is visible by the character | Test the VisibilityService functionality (createVisibleMap) |
| shouldReturnFalseIfTheTile77IsNotVisible | VisibilityService | n/a | False if a specified tile is not visible by the charatacter | Test the VisibilityService functionality (createVisibleMap)) |

1. Maintenance Guide
   1. Overview

This maintenance guide will attempt to assist future engineers in understanding, fixing and improving the “Dungeon of Dooom” source code. cover two distinct components to the project source code- our Java code and our Javascript code.

* 1. Java Overview

We have three Java projects: The domain library, the web service, and the bot. The domain contains models and database functionality common across the projects. The service is a web API using the Jersey framework that hosts a number of “matches” in-memory each of which has a “map” and some “players”. The service has endpoints allowing players to do such things as move around the map and when the players interact with some tiles special game events occur.

The bot is a (very simple) agent that uses Jersey’s client to connect to the web service and make automated requests, in order to make a bot character move around the screen- using the exact same API that the client for humans uses.

The package structure we use follows this project separation:

* com.dod- the root Dungeon of Doom (“dod”) package.
* com.dod.db- database classes
* com.dod.game- domain classes that relate game logic, that aren’t beans or models.
* com.dod.models- models, mostly simple beans
* com.dod.service- the web service
* com.dod.service.controller- controllers for the web service
* com.dod.service.filters- Jersey API filters
* com.dod.service.model- JAXB annotated models for returning JSON data from the service.
* com.dod.service.service- services that perform game logic functions. These generic services ensure separation of functionality from controllers and allow us to re-use that functionaliy between controllers.
* com.dod.bot- the root of the bot source code
* com.dod.bot.communicators- the “Communicator” classes that the bot uses to contact the web service.

In the following sections, we detail each individual Java class using individual documentation pages generated through Javadoc.

* 1. com.dod.db.DatabaseConnection

public class DatabaseConnection

extends java.lang.Object

Stores a connection to the database using the singleton pattern

|  |  |
| --- | --- |
| Constructors | |
| [DatabaseConnection](file:///C:\Users\Fortnox\AppData\com\dod\db\DatabaseConnection.html#DatabaseConnection--)() | |
| All Methods | |
| Modifier and Type | Method and Description |
| static void | [Close](file:///C:\Users\Fortnox\AppData\com\dod\db\DatabaseConnection.html#Close--)()  Closes the connection |
| static java.sql.Connection | [getConnection](file:///C:\Users\Fortnox\AppData\com\dod\db\DatabaseConnection.html#getConnection--)()  A static connection to ensure that all sessions use the same MySql connection Could be done more intelligently with connection pooling |

Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

*Constructor Detail*

DatabaseConnection

public DatabaseConnection()

*Method Detail*

Close

public static void Close()

Closes the connection

getConnection

* + - public static java.sql.Connection getConnection()

throws java.sql.SQLException

A static connection to ensure that all sessions use the same MySql connection Could be done more intelligently with connection pooling

Returns:

Connection instance

Throws:

java.sql.SQLException - when the database connection cannot be established

* 1. com.dod.db.repositories.DatabaseRepository<T>
* Direct Known Subclasses:

[PlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\PlayerRepository.html), [ScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html)

public class DatabaseRepository<T>

extends java.lang.Object

A base class of the Repository pattern

Introduces the generic getStatement() method to reuse that code across the different repositories

*Field Summary*

|  |  |
| --- | --- |
| Fields | |
| Modifier and Type | Field and Description |
| protected java.sql.PreparedStatement | [ps](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#ps) |

*Constructor Summary*

|  |
| --- |
| Constructors |
| [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#DatabaseRepository--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [delete](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#delete-T-)([T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) object)  Make a DELETE query to delete the object in question from the database |
| [T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) | [get](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#get-T-)([T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) object)  Make a SELECT query to fetch the unique object in question from the database |
| protected java.sql.PreparedStatement | [getStatement](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#getStatement-java.lang.String-)(java.lang.String text)  Prepares a statement from a string using the database connection |
| boolean | [insert](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#insert-T-)([T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) object)  Make an INSERT query to insert the object in question into the database |

*Field Detail*

* + - ps

protected java.sql.PreparedStatement ps

*Constructor Detail*

* + - DatabaseRepository

public DatabaseRepository()

*Method Detail*

* + - delete
    - public boolean delete([T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) object)

throws java.sql.SQLException

Make a DELETE query to delete the object in question from the database

Parameters:

object - the object in question with the unique field (but not necessarily others) filled out

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException - when the statement fails

* + - get
    - public [T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) get([T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) object)

throws java.sql.SQLException

Make a SELECT query to fetch the unique object in question from the database

Parameters:

object - an instance of the object in question with the unique field (but not necessarily others) filled out

Returns:

An instance of the object

Throws:

java.sql.SQLException - if the statement fails or connection cannot be established

* + - getStatement
    - protected java.sql.PreparedStatement getStatement(java.lang.String text)

throws java.sql.SQLException

Prepares a statement from a string using the database connection

Parameters:

text - the text of the statement

Returns:

a PreparedStatement instance

Throws:

java.sql.SQLException - when the statement fails

* + - insert
    - public boolean insert([T](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html) object)

throws java.sql.SQLException

Make an INSERT query to insert the object in question into the database

Parameters:

object - the object in question

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException

* 1. com.dod.db.repositories.IPlayerRepository
* All Known Implementing Classes:

[PlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\PlayerRepository.html)

public interface IPlayerRepository

Follows the Repository pattern.

Intended for selecting/inserting/deleting "Player" entries from the database.

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [delete](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html#delete-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Make an INSERT query to insert the Player in question into the database |
| [Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) | [get](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html#get-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Make a SELECT query to fetch the unique Player in question from the database |
| boolean | [insert](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html#insert-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Make a DELETE query to delete the Player in question from the database |

*Method Detail*

* + - delete
    - boolean delete([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Make an INSERT query to insert the Player in question into the database

Parameters:

object - the Player in question

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException - when the statement fails

* + - get
    - [Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) get([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Make a SELECT query to fetch the unique Player in question from the database

Parameters:

object - an instance of the Player in question with the unique field (but not necessarily others) filled out

Returns:

Player object fetched from the database

Throws:

java.sql.SQLException - if the statement fails or connection cannot be established

* + - insert
    - boolean insert([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Make a DELETE query to delete the Player in question from the database

Parameters:

object - the Player in question with the unique field (but not necessarily others) filled out

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException - when the statement fails

* 1. com.dod.db.repositories.IScoreRepository
* All Known Implementing Classes:

[ScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html)

public interface IScoreRepository

Follows the Repository pattern.

Intended for selecting/inserting/deleting "Score" entries from the database.

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [delete](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#delete-com.dod.models.Score-)([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)  Make a DELETE query to delete the Score in question from the database |
| [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) | [get](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#get-com.dod.models.Score-)([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)  Make a SELECT query to fetch the unique Score in question from the database |
| [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] | [getHighestScores](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#getHighestScores--)()  Get the 10 highest scores from database |
| [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] | [getPlayerScores](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#getPlayerScores-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Get the 10 highest scores of the player |
| boolean | [insert](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#insert-com.dod.models.Score-)([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)  Make an INSERT query to insert the Score in question into the database |

*Method Detail*

* + - delete
    - boolean delete([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)

throws java.sql.SQLException

Make a DELETE query to delete the Score in question from the database

Parameters:

object - the Score in question with the unique field (but not necessarily others) filled out

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException

* + - get
    - [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) get([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)

throws java.sql.SQLException

Make a SELECT query to fetch the unique Score in question from the database

Parameters:

object - an instance of the Score in question with the unique field (but not necessarily others) filled out

Returns:

Score fetched from the database

Throws:

java.sql.SQLException - if the statement fails or connection cannot be established

* + - getHighestScores
    - [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] getHighestScores()

throws java.sql.SQLException

Get the 10 highest scores from database

Returns:

Score[] array of 10 Score objects

Throws:

java.sql.SQLException - when the statement fails

* + - getPlayerScores
    - [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] getPlayerScores([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Get the 10 highest scores of the player

Parameters:

object - Player object

Returns:

Score[] array of 10 Score objects

Throws:

java.sql.SQLException - when the statement fails

* + - insert
    - boolean insert([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)

throws java.sql.SQLException

Make an INSERT query to insert the Score in question into the database

Parameters:

object - the Score in question

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException

* 1. com.dod.db.repositories.ScoreRepository
* All Implemented Interfaces:

[IScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html)

public class ScoreRepository

extends [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)>

implements [IScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html)

Implements IPlayerRepository.

Follows the Repository pattern.

Intended for selecting/inserting/deleting "Score" entries from the database.

*Field Summary*

* + - Fields inherited from class com.dod.db.repositories.[DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)

[ps](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#ps)

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [ScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html#ScoreRepository--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [delete](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html#delete-com.dod.models.Score-)([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)  Delete a score row from database !! We should not use that. |
| [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) | [get](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html#get-com.dod.models.Score-)([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)  returns a Score based on id from the database |
| [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] | [getHighestScores](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html#getHighestScores--)()  Get the 10 highest scores from database |
| [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] | [getPlayerScores](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html#getPlayerScores-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Get the 10 highest scores of the player |
| boolean | [insert](file:///C:\Users\Fortnox\com\dod\db\repositories\ScoreRepository.html#insert-com.dod.models.Score-)([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) scoreObject)  Inserts a score value to score table of database based on player's username. |

* + - Methods inherited from class com.dod.db.repositories.[DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)

[getStatement](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#getStatement-java.lang.String-)

*Constructor Detail*

* + - ScoreRepository

public ScoreRepository()

*Method Detail*

* + - delete
    - public boolean delete([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)

throws java.sql.SQLException

Delete a score row from database !! We should not use that.

Specified by:

[delete](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#delete-com.dod.models.Score-) in interface [IScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html)

Overrides:

[delete](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#delete-T-) in class [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)>

Parameters:

object - score object to delete

Returns:

true if the deletion was successful else false

Throws:

java.sql.SQLException - when the statement fails

* + - get
    - public [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) get([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) object)

throws java.sql.SQLException

returns a Score based on id from the database

Specified by:

[get](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#get-com.dod.models.Score-) in interface [IScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html)

Overrides:

[get](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#get-T-) in class [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)>

Parameters:

Score - to be fetched must have unique identifier populated

Returns:

Score object

Throws:

java.sql.SQLException - when the statement fails

* + - getHighestScores
    - public [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] getHighestScores()

throws java.sql.SQLException

Get the 10 highest scores from database

Specified by:

[getHighestScores](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#getHighestScores--) in interface [IScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html)

Returns:

Score[] array of 10 Score objects

Throws:

java.sql.SQLException - when the statement fails

* + - getPlayerScores
    - public [Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)[] getPlayerScores([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Get the 10 highest scores of the player

Specified by:

[getPlayerScores](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#getPlayerScores-com.dod.models.Player-) in interface [IScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html)

Parameters:

object - Player object

Returns:

Score[] array of 10 Score objects

Throws:

java.sql.SQLException - when the statement fails

* + - insert
    - public boolean insert([Score](file:///C:\Users\Fortnox\com\dod\models\Score.html) scoreObject)

throws java.sql.SQLException

Inserts a score value to score table of database based on player's username.

Specified by:

[insert](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html#insert-com.dod.models.Score-) in interface [IScoreRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IScoreRepository.html)

Overrides:

[insert](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#insert-T-) in class [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Score](file:///C:\Users\Fortnox\com\dod\models\Score.html)>

Parameters:

scoreObject - current score that we need to score

Returns:

true if insertion was successful else false

Throws:

java.sql.SQLException - when the statement fails

* 1. com.dod.db.repositories.PlayerRepository
* All Implemented Interfaces:

[IPlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html)

public class PlayerRepository

extends [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Player](file:///C:\Users\Fortnox\com\dod\models\Player.html)>

implements [IPlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html)

Implements IPlayerRepository.

Follows the Repository pattern.

Intended for selecting/inserting/deleting "Player" entries from the database.

*Field Summary*

* + - Fields inherited from class com.dod.db.repositories.[DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)

[ps](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#ps)

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [PlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\PlayerRepository.html#PlayerRepository--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [delete](file:///C:\Users\Fortnox\com\dod\db\repositories\PlayerRepository.html#delete-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Make an INSERT query to insert the Player in question into the database |
| [Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) | [get](file:///C:\Users\Fortnox\com\dod\db\repositories\PlayerRepository.html#get-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Make a SELECT query to fetch the unique Player in question from the database |
| boolean | [insert](file:///C:\Users\Fortnox\com\dod\db\repositories\PlayerRepository.html#insert-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)  Make a DELETE query to delete the Player in question from the database |

Methods *inherited* from class com.dod.db.repositories.[DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)

[getStatement](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#getStatement-java.lang.String-)

*Constructor Detail*

* + - PlayerRepository

public PlayerRepository()

*Method Detail*

* + - delete
    - public boolean delete([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Make an INSERT query to insert the Player in question into the database

Specified by:

[delete](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html#delete-com.dod.models.Player-) in interface [IPlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html)

Overrides:

[delete](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#delete-T-) in class [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Player](file:///C:\Users\Fortnox\com\dod\models\Player.html)>

Parameters:

object - the Player in question

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException - when the statement fails

* + - get
    - public [Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) get([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Make a SELECT query to fetch the unique Player in question from the database

Specified by:

[get](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html#get-com.dod.models.Player-) in interface [IPlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html)

Overrides:

[get](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#get-T-) in class [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Player](file:///C:\Users\Fortnox\com\dod\models\Player.html)>

Parameters:

object - an instance of the Player in question with the unique field (but not necessarily others) filled out

Returns:

Player object fetched from the database

Throws:

java.sql.SQLException - if the statement fails or connection cannot be established

* + - insert
    - public boolean insert([Player](file:///C:\Users\Fortnox\com\dod\models\Player.html) object)

throws java.sql.SQLException

Make a DELETE query to delete the Player in question from the database

Specified by:

[insert](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html#insert-com.dod.models.Player-) in interface [IPlayerRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\IPlayerRepository.html)

Overrides:

[insert](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html#insert-T-) in class [DatabaseRepository](file:///C:\Users\Fortnox\com\dod\db\repositories\DatabaseRepository.html)<[Player](file:///C:\Users\Fortnox\com\dod\models\Player.html)>

Parameters:

object - the Player in question with the unique field (but not necessarily others) filled out

Returns:

true if successful, false otherwise

Throws:

java.sql.SQLException - when the statement fails

* 1. com.dod.game.IMatchList
* All Known Implementing Classes:

[MatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html)

public interface IMatchList

Stores ongoing matches in memory and provides functions to access these matches.

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [addMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#addMatch-com.dod.models.Match-)([Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) match)  Returns a singleton instance of MatchList, creating it if it hasn't been initialised yet. |
| java.util.List<[Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html)> | [getLobbyingMatches](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#getLobbyingMatches--)()  Gets all matches that are in the Lobbying state |
| [Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) | [getMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#getMatch-java.util.UUID-)(java.util.UUID id)  Gets a Match by a particular ID. |
| [Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) | [getMatchForPlayer](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#getMatchForPlayer-java.lang.String-)(java.lang.String username)  Gets a match by player name. |
| boolean | [playerHasMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#playerHasMatch-java.lang.String-)(java.lang.String username)  Returns true if the player has a match in the list |
| void | [removeMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#removeMatch-java.util.UUID-)(java.util.UUID id)  Removes the match fitting the specified ID from the list |

*Method Detail*

* + - addMatch

void addMatch([Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) match)

Returns a singleton instance of MatchList, creating it if it hasn't been initialised yet.

* + - getLobbyingMatches

java.util.List<[Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html)> getLobbyingMatches()

Gets all matches that are in the Lobbying state

Returns:

List of Match objects

* + - getMatch

[Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) getMatch(java.util.UUID id)

Gets a Match by a particular ID. Returns null if the match is missing.

Parameters:

id - the UUID that corresponds to the match to be fetched

Returns:

Match

* + - getMatchForPlayer

[Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) getMatchForPlayer(java.lang.String username)

Gets a match by player name. Each player should only have one match. Returns null if player has no match.

Parameters:

username - the username of the player

Returns:

Match

* + - playerHasMatch

boolean playerHasMatch(java.lang.String username)

Returns true if the player has a match in the list

Parameters:

username - the player's username

Returns:

true if the player has a match in the list otherwise false

* + - removeMatch

void removeMatch(java.util.UUID id)

Removes the match fitting the specified ID from the list

Parameters:

id - the UUID that corresponds to the particular Match to be removed

* 1. com.dod.game.MatchList
* All Implemented Interfaces:

[IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

public class MatchList

extends java.lang.Object

implements [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

Implementation of IMatchList

Stores ongoing matches in memory and provides functions to access these matches.

Uses a singleton so that we can fetch the same object between requests

(And because this is much easier to test than making all methods static)

*Constructor Summary*

|  |
| --- |
| Constructors |
| [MatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#MatchList--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [addMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#addMatch-com.dod.models.Match-)([Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) match)  Adds a match to the list |
| java.util.List<[Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html)> | [getLobbyingMatches](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#getLobbyingMatches--)()  Gets all matches that are in the Lobbying state |
| [Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) | [getMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#getMatch-java.util.UUID-)(java.util.UUID id)  Gets a Match by a particular ID. |
| [Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) | [getMatchForPlayer](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#getMatchForPlayer-java.lang.String-)(java.lang.String username)  Gets a match by player name. |
| static [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html) | [instance](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#instance--)()  Returns a singleton instance of MatchList, creating it if it hasn't been initialised yet. |
| boolean | [playerHasMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#playerHasMatch-java.lang.String-)(java.lang.String username)  Returns true if the player has a match in the list |
| void | [removeMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\MatchList.html#removeMatch-java.util.UUID-)(java.util.UUID id)  Removes the match fitting the specified ID from the list |

*Constructor Detail*

* + - MatchList

public MatchList()

*Method Detail*

* + - addMatch

public void addMatch([Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) match)

Adds a match to the list

Specified by:

[addMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#addMatch-com.dod.models.Match-) in interface [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

Parameters:

match - the match to add

* + - getLobbyingMatches

public java.util.List<[Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html)> getLobbyingMatches()

Gets all matches that are in the Lobbying state

Specified by:

[getLobbyingMatches](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#getLobbyingMatches--) in interface [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

Returns:

List of Match objects

* + - getMatch

public [Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) getMatch(java.util.UUID id)

Gets a Match by a particular ID. Returns null if the match is missing.

Specified by:

[getMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#getMatch-java.util.UUID-) in interface [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

Parameters:

id - the UUID that corresponds to the match to be fetched

Returns:

Match

* + - getMatchForPlayer

public [Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html) getMatchForPlayer(java.lang.String username)

Gets a match by player name. Each player should only have one match. Returns null if player has no match.

Specified by:

[getMatchForPlayer](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#getMatchForPlayer-java.lang.String-) in interface [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

Parameters:

username - the username of the player

Returns:

Match

* + - instance

public static [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html) instance()

Returns a singleton instance of MatchList, creating it if it hasn't been initialised yet.

Returns:

MatchList

* + - playerHasMatch

public boolean playerHasMatch(java.lang.String username)

Returns true if the player has a match in the list

Specified by:

[playerHasMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#playerHasMatch-java.lang.String-) in interface [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

Parameters:

username - the player's username

Returns:

true if the player has a match in the list otherwise false

* + - removeMatch

public void removeMatch(java.util.UUID id)

Removes the match fitting the specified ID from the list

Specified by:

[removeMatch](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html#removeMatch-java.util.UUID-) in interface [IMatchList](file:///C:\Users\Fortnox\AppData\com\dod\game\IMatchList.html)

Parameters:

id - the UUID that corresponds to the particular Match to be removed

* 1. com.dod.models.TileType
* All Implemented Interfaces:

java.io.Serializable, java.lang.Comparable<[TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html)>

public enum TileType

extends java.lang.Enum<[TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html)>

The type of a tile, i.e is this tile a wall, floor or something else.

*Enum Constant Summary*

|  |
| --- |
| Enum Constants |
| Enum Constant and Description |
| [Coin](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html#Coin) |
| [Empty](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html#Empty) |
| [Exit](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html#Exit) |
| [Wall](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html#Wall) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| int | [getValue](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html#getValue--)() |
| static [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html) | [valueOf](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html#valueOf-java.lang.String-)(java.lang.String name)  Returns the enum constant of this type with the specified name. |
| static [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html)[] | [values](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html#values--)()  Returns an array containing the constants of this enum type, in the order they are declared. |

*Enum Constant Detail*

* + - Coin

public static final [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html) Coin

* + - Empty

public static final [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html) Empty

* + - Exit

public static final [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html) Exit

* + - Wall

public static final [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html) Wall

*Method Detail*

* + - getValue

public int getValue()

* + - valueOf

public static [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html) valueOf(java.lang.String name)

Returns the enum constant of this type with the specified name. The string must match *exactly* an identifier used to declare an enum constant in this type. (Extraneous whitespace characters are not permitted.)

Parameters:

name - the name of the enum constant to be returned.

Returns:

the enum constant with the specified name

Throws:

java.lang.IllegalArgumentException - if this enum type has no constant with the specified name

java.lang.NullPointerException - if the argument is null

* + - values

public static [TileType](file:///C:\Users\Fortnox\AppData\com\dod\models\TileType.html)[] values()

Returns an array containing the constants of this enum type, in the order they are declared. This method may be used to iterate over the constants as follows:

for (TileType c : TileType.values())

  System.out.println(c);

Returns:

an array containing the constants of this enum type, in the order they are declared

* 1. com.dod.models.Tile

public class Tile

extends java.lang.Object

A Tile represents single tile on the grid that is the Map

A Tile has a Type that indicates whether it is eg a wall, floor, coin or exit tile.

A Tile may or may not be visible

*Field Summary*

|  |  |
| --- | --- |
| Fields | |
| Modifier and Type | Field and Description |
| protected int | [type](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#type) |
| protected boolean | [visibility](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#visibility) |

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#Tile-int-)(int type) |
| [Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#Tile-int-boolean-)(int type, boolean visibility) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| int | [getType](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#getType--)() |
| boolean | [isVisible](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#isVisible--)() |
| void | [setType](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#setType-int-)(int type) |
| void | [setVisibility](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#setVisibility-boolean-)(boolean visibility) |
| java.lang.String | [toString](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html#toString--)() |

*Field Detail*

* + - type

protected int type

* + - visibility

protected boolean visibility

*Constructor Detail*

* + - Tile

public Tile(int type)

* + - Tile
    - public Tile(int type,

boolean visibility)

*Method Detail*

* + - getType

public int getType()

* + - isVisible

public boolean isVisible()

* + - setType

public void setType(int type)

* + - setVisibility

public void setVisibility(boolean visibility)

* + - toString

public java.lang.String toString()

Overrides:

toString in class java.lang.Object

* 1. com.dod.models.Score

public class Score

extends java.lang.Object

A Score stores the points a Player achieved when they completed a Match.

A Score as an ID in order to store the Score as a unique databaes record

A Score also has a value and the username of the player that the score is related to.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Score](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#Score-int-java.lang.String-int-)(int id, java.lang.String username, int value) |
| [Score](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#Score-java.lang.String-int-)(java.lang.String username, int value) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| int | [getId](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#getId--)() |
| java.lang.String | [getUsername](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#getUsername--)() |
| int | [getValue](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#getValue--)() |
| void | [setId](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#setId-int-)(int id) |
| void | [setUsername](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#setUsername-java.lang.String-)(java.lang.String username) |
| void | [setValue](file:///C:\Users\Fortnox\AppData\com\dod\models\Score.html#setValue-int-)(int value) |

*Constructor Detail*

* + - Score
    - public Score(int id,
    - java.lang.String username,

int value)

* + - Score
    - public Score(java.lang.String username,

int value)

*Method Detail*

* + - getId

public int getId()

* + - getUsername

public java.lang.String getUsername()

* + - getValue

public int getValue()

* + - setId

public void setId(int id)

* + - setUsername

public void setUsername(java.lang.String username)

* + - setValue

public void setValue(int value)

* 1. com.dod.models.Point

public class Point

extends java.lang.Object

Bean class for storing a point (or vertex) in the map.

*Field Summary*

|  |  |
| --- | --- |
| Fields | |
| Modifier and Type | Field and Description |
| int | [x](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html#x) |
| int | [y](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html#y) |

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html#Point--)() |
| [Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html#Point-int-int-)(int x, int y) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [equals](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html#equals-java.lang.Object-)(java.lang.Object obj) |

*Field Detail*

* + - x

public int x

* + - y

public int y

*Constructor Detail*

* + - Point

public Point()

* + - Point
    - public Point(int x,

int y)

*Method Detail*

* + - equals

public boolean equals(java.lang.Object obj)

Overrides:

equals in class java.lang.Object

* 1. com.dod.models.Player

public class Player

extends java.lang.Object

A Player represents the user that is in control of the game client

A Player can sign in with a username or password

A Player has a level and a password salt

A Player's password is always hashed

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#Player-java.lang.String-)(java.lang.String name) |
| [Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#Player-java.lang.String-java.lang.String-byte:A-)(java.lang.String name, java.lang.String hashedPassword, byte[] salt) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| java.lang.String | [getHashedPassword](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#getHashedPassword--)() |
| int | [getLevel](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#getLevel--)() |
| byte[] | [getSalt](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#getSalt--)() |
| java.lang.String | [getUsername](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#getUsername--)() |
| void | [setHashedPassword](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#setHashedPassword-java.lang.String-)(java.lang.String hashedPassword) |
| void | [setLevel](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#setLevel-int-)(int level) |
| void | [setSalt](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#setSalt-byte:A-)(byte[] salt) |
| void | [setUsername](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html#setUsername-java.lang.String-)(java.lang.String value) |

* + - Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

*Constructor Detail*

* + - Player

public Player(java.lang.String name)

* + - Player
    - public Player(java.lang.String name,
    - java.lang.String hashedPassword,

byte[] salt)

*Method Detail*

* + - getHashedPassword

public java.lang.String getHashedPassword()

* + - getLevel

public int getLevel()

* + - getSalt

public byte[] getSalt()

* + - getUsername

public java.lang.String getUsername()

* + - setHashedPassword

public void setHashedPassword(java.lang.String hashedPassword)

* + - setLevel

public void setLevel(int level)

* + - setSalt

public void setSalt(byte[] salt)

* + - setUsername

public void setUsername(java.lang.String value)

* 1. com.dod.models.MatchState
* All Implemented Interfaces:

java.io.Serializable, java.lang.Comparable<[MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html)>

public enum MatchState

extends java.lang.Enum<[MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html)>

The state of a Match.

*Enum Constant Summary*

|  |
| --- |
| Enum Constants |
| Enum Constant and Description |
| [Ingame](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html#Ingame) |
| [Lobbying](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html#Lobbying) |
| [Over](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html#Over) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| static [MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html) | [valueOf](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html#valueOf-java.lang.String-)(java.lang.String name)  Returns the enum constant of this type with the specified name. |
| static [MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html)[] | [values](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html#values--)()  Returns an array containing the constants of this enum type, in the order they are declared. |

*Enum Constant Detail*

* + - Ingame

public static final [MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html) Ingame

* + - Lobbying

public static final [MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html) Lobbying

* + - Over

public static final [MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html) Over

*Method Detail*

* + - valueOf

public static [MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html) valueOf(java.lang.String name)

Returns the enum constant of this type with the specified name. The string must match *exactly* an identifier used to declare an enum constant in this type. (Extraneous whitespace characters are not permitted.)

Parameters:

name - the name of the enum constant to be returned.

Returns:

the enum constant with the specified name

Throws:

java.lang.IllegalArgumentException - if this enum type has no constant with the specified name

java.lang.NullPointerException - if the argument is null

*values*

public static [MatchState](file:///C:\Users\Fortnox\AppData\com\dod\models\MatchState.html)[] values()

Returns an array containing the constants of this enum type, in the order they are declared. This method may be used to iterate over the constants as follows:

for (MatchState c : MatchState.values())

  System.out.println(c);

Returns:

an array containing the constants of this enum type, in the order they are declared

* 1. com.dod.models.Match

public class Match

extends java.lang.Object

A Match represents a particular collection of Players that are playing on a particular Map stored in memory

A Match has a Map

A Match has a unique ID

A Match

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Match](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#Match-com.dod.models.Map-)(com.dod.models.Map map) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [addCharacter](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#addCharacter-com.dod.models.Player-com.dod.models.Point-)(com.dod.models.Player player, com.dod.models.Point position)  Adds a Player to this Match with a new Character |
| com.dod.models.Character | [getCharacter](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getCharacter-java.lang.String-)(java.lang.String username) |
| java.util.List<com.dod.models.Character> | [getCharactersOnTile](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getCharactersOnTile-com.dod.models.Point-)(com.dod.models.Point point)  Returns all Characters on a particular Tile |
| com.dod.models.Character | [getCharacterWithHighestCoins](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getCharacterWithHighestCoins--)()  Gets the Caracter with the highest score |
| java.util.UUID | [getId](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getId--)() |
| com.dod.models.Map | [getMap](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getMap--)() |
| java.lang.String[] | [getPlayerNames](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getPlayerNames--)()  Gets a list of names of each Player currently in this Match |
| int | [getScore](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getScore--)() |
| com.dod.models.MatchState | [getState](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getState--)() |
| long | [getTimer](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#getTimer--)() |
| boolean | [hasCharacter](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#hasCharacter-java.lang.String-)(java.lang.String userName)  Returns where or not a character is in this Match |
| void | [removeCharacter](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#removeCharacter-com.dod.models.Player-)(com.dod.models.Player player) |
| void | [setScore](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#setScore-int-)(int score) |
| void | [setState](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#setState-com.dod.models.MatchState-)(com.dod.models.MatchState state) |
| void | [setTimer](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#setTimer-long-)(long timer) |
| void | [startGame](file:///C:\Users\Fortnox\AppData\com\dod\models\Match.html#startGame--)() |

*Constructor Detail*

* + - Match

public Match(com.dod.models.Map map)

*Method Detail*

* + - addCharacter
    - public void addCharacter(com.dod.models.Player player,

com.dod.models.Point position)

Adds a Player to this Match with a new Character

Parameters:

player - Player the Player who will join this Match as a Character

position - Point the position the new Character will occupy

* + - getCharacter

public com.dod.models.Character getCharacter(java.lang.String username)

* + - getCharactersOnTile

public java.util.List<com.dod.models.Character> getCharactersOnTile(com.dod.models.Point point)

Returns all Characters on a particular Tile

Parameters:

point - Point the location of the Tile to check

Returns:

List\ a list of Characters that are presently standing on that tile

* + - getCharacterWithHighestCoins

public com.dod.models.Character getCharacterWithHighestCoins()

Gets the Caracter with the highest score

Returns:

Character with the highest score

* + - getId

public java.util.UUID getId()

* + - getMap

public com.dod.models.Map getMap()

* + - getPlayerNames

public java.lang.String[] getPlayerNames()

Gets a list of names of each Player currently in this Match

Returns:

String[] array of players names

* + - getScore

public int getScore()

* + - getState

public com.dod.models.MatchState getState()

* + - getTimer

public long getTimer()

* + - hasCharacter

public boolean hasCharacter(java.lang.String userName)

Returns where or not a character is in this Match

Parameters:

userName - String the name of the Player to check

Returns:

boolean true if the Player is in this Match otherwise false

* + - removeCharacter

public void removeCharacter(com.dod.models.Player player)

* + - setScore

public void setScore(int score)

* + - setState

public void setState(com.dod.models.MatchState state)

* + - setTimer

public void setTimer(long timer)

* + - startGame

public void startGame()

* 1. com.dod.models.Map

public class Map

extends java.lang.Object

A Map stores a 2-dimensional grid of Tiles.

A Map has a name, width, height and numbe rof coins total and required to win.

*Field Summary*

|  |  |
| --- | --- |
| Fields | |
| Modifier and Type | Field and Description |
| protected int | [height](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#height) |
| protected java.lang.String | [name](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#name) |
| protected int | [numberOfCoinsNeededToWin](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#numberOfCoinsNeededToWin) |
| protected [Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html)[][] | [tiles](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#tiles) |
| protected int | [totalNumberOfCoins](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#totalNumberOfCoins) |
| protected int | [width](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#width) |

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Map](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#Map-int-int-)(int width, int height) |
| [Map](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#Map-java.lang.String-int-int-int-int-com.dod.models.Point-)(java.lang.String name, int totalNumberOfCoins, int numberOfCoinsNeededToWin, int width, int height, [Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) mapSize) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| int | [getCoinNo](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#getCoinNo--)()  The total number of coins that should be created in the map. |
| int | [getCoinWin](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#getCoinWin--)()  The total number of coins needed to win on this map |
| int | [getHeight](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#getHeight--)() |
| java.lang.String | [getName](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#getName--)() |
| [Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) | [getRandomFreeTilePoint](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#getRandomFreeTilePoint--)()  Gets a random position of a tile that is not a wall, coin or exit. |
| [Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html) | [getTile](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#getTile-com.dod.models.Point-)([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) point) |
| int | [getWidth](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#getWidth--)() |
| void | [setCoinNo](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#setCoinNo-int-)(int coin\_no)  The total number of coins that should be created in the map. |
| void | [setCoinWin](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#setCoinWin-int-)(int coin\_win)  The total number of coins needed to win on this map |
| void | [setName](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#setName-java.lang.String-)(java.lang.String name) |
| void | [setTile](file:///C:\Users\Fortnox\AppData\com\dod\models\Map.html#setTile-com.dod.models.Point-com.dod.models.Tile-)([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) position, [Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html) tile) |

*Field Detail*

* + - height

protected int height

* + - name

protected java.lang.String name

* + - numberOfCoinsNeededToWin

protected int numberOfCoinsNeededToWin

* + - tiles

protected [Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html)[][] tiles

* + - totalNumberOfCoins

protected int totalNumberOfCoins

* + - width

protected int width

*Constructor Detail*

* + - Map
    - public Map(int width,

int height)

* + - Map
    - public Map(java.lang.String name,
    - int totalNumberOfCoins,
    - int numberOfCoinsNeededToWin,
    - int width,
    - int height,

[Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) mapSize)

*Method Detail*

* + - getCoinNo

public int getCoinNo()

The total number of coins that should be created in the map.

Returns:

int

* + - getCoinWin

public int getCoinWin()

The total number of coins needed to win on this map

Returns:

int

* + - getHeight

public int getHeight()

* + - getName

public java.lang.String getName()

* + - getRandomFreeTilePoint

public [Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) getRandomFreeTilePoint()

Gets a random position of a tile that is not a wall, coin or exit.

Returns:

Point

* + - getTile

public [Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html) getTile([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) point)

* + - getWidth

public int getWidth()

* + - setCoinNo

public void setCoinNo(int coin\_no)

The total number of coins that should be created in the map.

Parameters:

coin\_no - int

* + - setCoinWin

public void setCoinWin(int coin\_win)

The total number of coins needed to win on this map

Parameters:

coin\_win - int

* + - setName

public void setName(java.lang.String name)

* + - setTile
    - public void setTile([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) position,

[Tile](file:///C:\Users\Fortnox\AppData\com\dod\models\Tile.html) tile)

* 1. com.dod.models.Character

public class Character

extends java.lang.Object

A Character is a fictional entity that moves around the game world.

A Character belongs to a Player.

A Character has a position and can interact with coins and the exit.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Character](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#Character-com.dod.models.Point-com.dod.models.Player-)([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) position, [Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html) player) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [addCollectedCoinsPos](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#addCollectedCoinsPos-com.dod.models.Point-)([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) newPoint)  Keeps track of which coins on the map this Character has collected. |
| int | [getCollectedCoins](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#getCollectedCoins--)() |
| java.util.List<[Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html)> | [getCollectedCoinsPos](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#getCollectedCoinsPos--)()  Keeps track of which coins on the map this Character has collected. |
| [Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html) | [getPlayer](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#getPlayer--)()  The Player that this Character belongs to |
| [Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) | [getPosition](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#getPosition--)()  The player's position in the game world |
| void | [setCollectedCoins](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#setCollectedCoins-int-)(int collectedCoins) |
| void | [setPlayer](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#setPlayer-com.dod.models.Player-)([Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html) player)  The Player that this Character belongs to |
| void | [setPosition](file:///C:\Users\Fortnox\AppData\com\dod\models\Character.html#setPosition-com.dod.models.Point-)([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) position)  The player's position in the game world |

*Constructor Detail*

* + - Character
    - public Character([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) position,

[Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html) player)

*Method Detail*

* + - addCollectedCoinsPos

public void addCollectedCoinsPos([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) newPoint)

Keeps track of which coins on the map this Character has collected. This enables us to leave the coin on the Map once it has been picked up, thereby allowing other players to pick it up, and yet not send the same coin to the same player's client again.

Parameters:

newPoint - the Point to add to the collection

* + - getCollectedCoins

public int getCollectedCoins()

* + - getCollectedCoinsPos

public java.util.List<[Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html)> getCollectedCoinsPos()

Keeps track of which coins on the map this Character has collected. This enables us to leave the coin on the Map once it has been picked up, thereby allowing other players to pick it up, and yet not send the same coin to the same player's client again.

Returns:

a list of Point objects that represent the points on the map where the Character has collected a coin

* + - getPlayer

public [Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html) getPlayer()

The Player that this Character belongs to

Returns:

Player

* + - getPosition

public [Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) getPosition()

The player's position in the game world

Returns:

Point

* + - setCollectedCoins

public void setCollectedCoins(int collectedCoins)

* + - setPlayer

public void setPlayer([Player](file:///C:\Users\Fortnox\AppData\com\dod\models\Player.html) player)

The Player that this Character belongs to

Parameters:

player - Player

* + - setPosition

public void setPosition([Point](file:///C:\Users\Fortnox\AppData\com\dod\models\Point.html) position)

The player's position in the game world

Parameters:

position - Point

* 1. com.dod.service.controller.ScoreController

@Path(value="score")

public class ScoreController

extends java.lang.Object

Fetches and returns the top scores

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [ScoreController](file:///C:\Users\Fortnox\com\dod\service\controller\ScoreController.html#ScoreController--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| javax.ws.rs.core.Response | [top](file:///C:\Users\Fortnox\com\dod\service\controller\ScoreController.html#top--)()  Fetches the top 10 scores across all players. |

*Constructor Detail*

* + - ScoreController

public ScoreController()

*Method Detail*

* + - top
    - @GET
    - @Produces(value="application/json")
    - @Path(value="top")

public javax.ws.rs.core.Response top()

Fetches the top 10 scores across all players.

Returns:

Response 200 OK with a JSON encoded ScoreboardModel or 500 if an error occurred

* 1. com.dod.service.controller.PlayerController

@Path(value="player")

public class PlayerController

extends java.lang.Object

Manages registering and logging in a player

Creates the session that other controllers can use to fetch user details

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [PlayerController](file:///C:\Users\Fortnox\com\dod\service\controller\PlayerController.html#PlayerController--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| javax.ws.rs.core.Response | [login](file:///C:\Users\Fortnox\com\dod\service\controller\PlayerController.html#login-java.lang.String-java.lang.String-)(java.lang.String username, java.lang.String password)  Authorises a user and starts a session with them |
| javax.ws.rs.core.Response | [register](file:///C:\Users\Fortnox\com\dod\service\controller\PlayerController.html#register-java.lang.String-java.lang.String-)(java.lang.String username, java.lang.String password)  Registers a user for the service. |

*Constructor Detail*

* + - PlayerController

public PlayerController()

*Method Detail*

* + - login
    - @POST
    - @Produces(value="text/plain")
    - @Path(value="login")
    - public javax.ws.rs.core.Response login(@NotNull @Length(min=1,max=255) @FormParam(value="username")
    - java.lang.String username,
    - @NotNull @Length(min=1,max=255) @FormParam(value="password")

java.lang.String password)

Authorises a user and starts a session with them

Parameters:

username - must be unique, not empty and less than 256 characters

password - must not be empty and less than 256 characters

Returns:

Response with blank body, 200 if successful otherwise 400 or 500

* + - register
    - @POST
    - @Produces(value="text/plain")
    - @Path(value="register")
    - public javax.ws.rs.core.Response register(@NotNull @Length(min=1,max=255) @FormParam(value="username")
    - java.lang.String username,
    - @NotNull @Length(min=1,max=255) @FormParam(value="password")

java.lang.String password)

Registers a user for the service. Username must be unique.

Parameters:

username - must be unique, not empty and less than 256 characters

password - must not be empty and less than 256 characters

Returns:

Response with blank body, 200 if successful otherwise 400 or 500

* 1. com.dod.service.controller.MatchController

@Path(value="match")

public class MatchController

extends java.lang.Object

A controller to manage Matches- joining, listing, starting a new one etc.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [MatchController](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#MatchController--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| javax.ws.rs.core.Response | [join](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#join-java.util.UUID-)(java.util.UUID matchId)  Joins the Player in an ongoing Match |
| javax.ws.rs.core.Response | [leave](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#leave--)()  Removes the Player from their current Match |
| javax.ws.rs.core.Response | [list](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#list--)()  Lists all currently lobbying matches in a JSON array |
| javax.ws.rs.core.Response | [newMatch](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#newMatch-int-)(int level)  Starts a new Match in a particular level and responds with that Match's status |
| javax.ws.rs.core.Response | [result](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#result--)()  Fetches the result of a Match from memory |
| javax.ws.rs.core.Response | [start](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#start--)()  Changes a Match's status to Ingame (marking the start of the Match for all players) |
| javax.ws.rs.core.Response | [status](file:///C:\Users\Fortnox\com\dod\service\controller\MatchController.html#status--)()  Responds with the status of the player's current Match. |

*Constructor Detail*

* + - MatchController

public MatchController()

*Method Detail*

* + - join
    - @POST
    - @Produces(value="application/json")
    - @Path(value="join")
    - public javax.ws.rs.core.Response join(@NotNull @FormParam(value="matchId")

java.util.UUID matchId)

Joins the Player in an ongoing Match

Parameters:

matchId - the UUID ID of the Match, must not be null

Returns:

Response 200 OK with the latest MatchStatus encoded in JSON

* + - leave
    - @POST
    - @Produces(value="text/plain")
    - @Path(value="leave")

public javax.ws.rs.core.Response leave()

Removes the Player from their current Match

Returns:

Response 200 OK with a blank body

* + - list
    - @GET
    - @Produces(value="application/json")
    - @Path(value="list")

public javax.ws.rs.core.Response list()

Lists all currently lobbying matches in a JSON array

Returns:

Response 200 OK JSON array with encoded MatchStatus for each lobbying Match

* + - newMatch
    - @POST
    - @Produces(value="application/json")
    - @Path(value="new")
    - public javax.ws.rs.core.Response newMatch(@NotNull @FormParam(value="level")

int level)

Starts a new Match in a particular level and responds with that Match's status

Parameters:

level - int the level to load for this Match, must not be null

Returns:

Response 200 OK with MatchStatus encoded in JSON or null if a Match cannot be crated

* + - result
    - @GET
    - @Produces(value="application/json")
    - @Path(value="result")

public javax.ws.rs.core.Response result()

Fetches the result of a Match from memory

Returns:

Resepons 200 OK with JSON encoded MatchResultModel

* + - start
    - @POST
    - @Produces(value="text/plain")
    - @Path(value="start")

public javax.ws.rs.core.Response start()

Changes a Match's status to Ingame (marking the start of the Match for all players)

Returns:

MatchStatus encoded in JSON

* + - status
    - @GET
    - @Produces(value="application/json")
    - @Path(value="status")

public javax.ws.rs.core.Response status()

Responds with the status of the player's current Match. If Player has no current Match returns a 500 error.

Returns:

Response 200 OK with MatchStatus encoded in JSON

* 1. com.dod.service.controller.GameController

@Path(value="game")

public class GameController

extends java.lang.Object

A controller to manage in-game game-related functionality ie getting the current state of the world or moving.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [GameController](file:///C:\Users\Fortnox\com\dod\service\controller\GameController.html#GameController--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| javax.ws.rs.core.Response | [move](file:///C:\Users\Fortnox\com\dod\service\controller\GameController.html#move-java.lang.String-)(java.lang.String direction)  An endpoint to request the Player's Character move once in a particular direction. |
| javax.ws.rs.core.Response | [status](file:///C:\Users\Fortnox\com\dod\service\controller\GameController.html#status--)()  Responds with the current gamestate from the Player's Character's perspective, i.e. |

*Constructor Detail*

* + - GameController

public GameController()

*Method Detail*

* + - move
    - @POST
    - @Produces(value="application/json")
    - @Path(value="move")
    - public javax.ws.rs.core.Response move(@NotNull @FormParam(value="key")

java.lang.String direction)

An endpoint to request the Player's Character move once in a particular direction. Responds with game status after move. If Player has no current ongoing Match returns 500 error.

Parameters:

direction - a char from {W,S,A,D} pertaining to a particular direction in the WASD layout, must not be null

Returns:

Response 200 OK with GameStateModel as a JSON object

* + - status
    - @GET
    - @Produces(value="application/json")
    - @Path(value="status")

public javax.ws.rs.core.Response status()

Responds with the current gamestate from the Player's Character's perspective, i.e. only returning visible tiles If Player has no current ongoing Match returns 500 error.

Returns:

Response 200 OK with GameStateModel as a JSON object

* 1. com.dod.service.filters.corsFilter

@Provider

public class corsFilter

extends java.lang.Object

implements javax.ws.rs.container.ContainerResponseFilte

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [corsFilter](file:///C:\Users\Fortnox\com\dod\service\filters\corsFilter.html#corsFilter--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [filter](file:///C:\Users\Fortnox\com\dod\service\filters\corsFilter.html#filter-javax.ws.rs.container.ContainerRequestContext-javax.ws.rs.container.ContainerResponseContext-)(javax.ws.rs.container.ContainerRequestContext request, javax.ws.rs.container.ContainerResponseContext response)  Adds CORS headers to the Response before sending it |

*Constructor Detail*

* + - corsFilter

public corsFilter()

*Method Detail*

* + - filter
    - public void filter(javax.ws.rs.container.ContainerRequestContext request,

javax.ws.rs.container.ContainerResponseContext response)

Adds CORS headers to the Response before sending it

Specified by:

filter in interface javax.ws.rs.container.ContainerResponseFilter

Parameters:

request - ContainerRequestContext

response - ContainerResponseContext

* 1. com.dod.service.model.TileModel

public class TileModel

extends java.lang.Object

A simpler Tile model just for JSON encoding

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html#TileModel--)() |
| [TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html#TileModel-int-com.dod.models.Point-)(int type, com.dod.models.Point position) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Point | [getPosition](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html#getPosition--)() |
| int | [getType](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html#getType--)() |
| void | [setPosition](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html#setPosition-com.dod.models.Point-)(com.dod.models.Point position) |
| void | [setType](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html#setType-int-)(int type) |

*Constructor Detail*

* + - TileModel

public TileModel()

* + - TileModel
    - public TileModel(int type,

com.dod.models.Point position)

*Method Detail*

* + - getPosition

public com.dod.models.Point getPosition()

* + - getType

public int getType()

* + - setPosition

public void setPosition(com.dod.models.Point position)

* + - setType

public void setType(int type)

* 1. com.dod.service.model.MatchStatus

public class MatchStatus

extends java.lang.Object

Models the current state of a lobbying match.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#MatchStatus--)() |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#MatchStatus-com.dod.models.Match-)(com.dod.models.Match match) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| java.util.UUID | [getId](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#getId--)() |
| java.lang.String[] | [getPlayerNames](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#getPlayerNames--)() |
| java.lang.String | [getState](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#getState--)() |
| void | [setId](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#setId-java.util.UUID-)(java.util.UUID id) |
| void | [setPlayerNames](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#setPlayerNames-java.lang.String:A-)(java.lang.String[] playerNames) |
| void | [setState](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html#setState-java.lang.String-)(java.lang.String state) |

*Constructor Detail*

* + - MatchStatus

public MatchStatus()

* + - MatchStatus

public MatchStatus(com.dod.models.Match match)

*Method Detail*

* + - getId

public java.util.UUID getId()

* + - getPlayerNames

public java.lang.String[] getPlayerNames()

* + - getState

public java.lang.String getState()

* + - setId

public void setId(java.util.UUID id)

* + - setPlayerNames

public void setPlayerNames(java.lang.String[] playerNames)

* + - setState

public void setState(java.lang.String state)

* 1. com.dod.service.model.MatchResultModel

public class MatchResultModel

extends java.lang.Object

Models the information the client needs to display the end-game screen when the game ends.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [MatchResultModel](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#MatchResultModel--)() |
| [MatchResultModel](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#MatchResultModel-java.lang.String-int-int-)(java.lang.String winner, int winnerCoins, int score) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| int | [getScore](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#getScore--)() |
| java.lang.String | [getWinner](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#getWinner--)() |
| int | [getWinnerCoins](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#getWinnerCoins--)() |
| void | [setScore](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#setScore-int-)(int score) |
| void | [setWinner](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#setWinner-java.lang.String-)(java.lang.String winner) |
| void | [setWinnerCoins](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html#setWinnerCoins-int-)(int winnerCoins) |

*Constructor Detail*

* + - MatchResultModel

public MatchResultModel()

* + - MatchResultModel
    - public MatchResultModel(java.lang.String winner,
    - int winnerCoins,

int score)

*Method Detail*

* + - getScore

public int getScore()

* + - getWinner

public java.lang.String getWinner()

* + - getWinnerCoins

public int getWinnerCoins()

* + - setScore

public void setScore(int score)

* + - setWinner

public void setWinner(java.lang.String winner)

* + - setWinnerCoins

public void setWinnerCoins(int winnerCoins)

* 1. com.dod.service.model.LoginModel

public class LoginModel

extends java.lang.Object

Simple model/bean used to pass information to/from the AuthorisationService

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html#LoginModel-java.lang.String-java.lang.String-)(java.lang.String userName, java.lang.String password) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Player | [asPlayer](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html#asPlayer--)()  Convenience method to return the LoginModel's username in the Player model |
| java.lang.String | [getPassword](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html#getPassword--)() |
| java.lang.String | [getUserName](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html#getUserName--)() |
| void | [setPassword](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html#setPassword-java.lang.String-)(java.lang.String password) |
| void | [setUserName](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html#setUserName-java.lang.String-)(java.lang.String userName) |

* + - Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

*Constructor Detail*

* + - LoginModel
    - public LoginModel(java.lang.String userName,

java.lang.String password)

*Method Detail*

* + - asPlayer

public com.dod.models.Player asPlayer()

Convenience method to return the LoginModel's username in the Player model

Returns:

Player

* + - getPassword

public java.lang.String getPassword()

* + - getUserName

public java.lang.String getUserName()

* + - setPassword

public void setPassword(java.lang.String password)

* + - setUserName

public void setUserName(java.lang.String userName)

* 1. com.dod.service.model.GameStateModel

public class GameStateModel

extends java.lang.Object

Represents the current GameState. Intended to be communicated to the client via JSON encoding.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [GameStateModel](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#GameStateModel--)() |
| [GameStateModel](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#GameStateModel-com.dod.service.model.TileModel:A-com.dod.service.model.CharacterModel:A-com.dod.service.model.CharacterModel-boolean-int-)([TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html)[] tiles, [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html)[] characters, [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html) playerCharacter, boolean hasEnded, int minNumOfCoins) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html)[] | [getCharacters](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#getCharacters--)() |
| int | [getMinNumOfCoins](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#getMinNumOfCoins--)()  The minimum number of coins needed to win the Match |
| [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html) | [getPlayerCharacter](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#getPlayerCharacter--)()  The Character belonging to the Player that made the request |
| [TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html)[] | [getTiles](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#getTiles--)() |
| boolean | [isHasEnded](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#isHasEnded--)()  Whether the match is ongoing- triggers the client's endgame if true |
| void | [setCharacters](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#setCharacters-com.dod.service.model.CharacterModel:A-)([CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html)[] characters) |
| void | [setHasEnded](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#setHasEnded-boolean-)(boolean hasEnded)  Whether the match is ongoing- triggers the client's endgame if true |
| void | [setMinNumOfCoins](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#setMinNumOfCoins-int-)(int minNumOfCoins)  \* The minimum number of coins needed to win the Match |
| void | [setPlayerCharacter](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#setPlayerCharacter-com.dod.service.model.CharacterModel-)([CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html) playerCharacter)  The Character belonging to the Player that made the request |
| void | [setTiles](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html#setTiles-com.dod.service.model.TileModel:A-)([TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html)[] tiles) |

*Constructor Detail*

* + - GameStateModel

public GameStateModel()

* + - GameStateModel
    - public GameStateModel([TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html)[] tiles,
    - [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html)[] characters,
    - [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html) playerCharacter,
    - boolean hasEnded,

int minNumOfCoins)

*Method Detail*

* + - getCharacters

public [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html)[] getCharacters()

* + - getMinNumOfCoins

public int getMinNumOfCoins()

The minimum number of coins needed to win the Match

Returns:

int

* + - getPlayerCharacter

public [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html) getPlayerCharacter()

The Character belonging to the Player that made the request

Returns:

Character

* + - getTiles

public [TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html)[] getTiles()

* + - isHasEnded

public boolean isHasEnded()

Whether the match is ongoing- triggers the client's endgame if true

Returns:

boolean

* + - setCharacters

public void setCharacters([CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html)[] characters)

* + - setHasEnded

public void setHasEnded(boolean hasEnded)

Whether the match is ongoing- triggers the client's endgame if true

Parameters:

hasEnded - boolean

* + - setMinNumOfCoins

public void setMinNumOfCoins(int minNumOfCoins)

\* The minimum number of coins needed to win the Match

Parameters:

minNumOfCoins - int

* + - setPlayerCharacter

public void setPlayerCharacter([CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html) playerCharacter)

The Character belonging to the Player that made the request

Parameters:

playerCharacter - Character

* + - setTiles

public void setTiles([TileModel](file:///C:\Users\Fortnox\com\dod\service\model\TileModel.html)[] tiles)

* 1. com.dod.service.model.CharacterModel

public class CharacterModel

extends java.lang.Object

A simpler model of Character for JSON encoding

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#CharacterModel--)() |
| [CharacterModel](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#CharacterModel-java.lang.String-int-com.dod.models.Point-)(java.lang.String playerName, int noCoins, com.dod.models.Point position) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| int | [getNoCoins](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#getNoCoins--)() |
| java.lang.String | [getPlayerName](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#getPlayerName--)() |
| com.dod.models.Point | [getPosition](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#getPosition--)() |
| void | [setNoCoins](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#setNoCoins-int-)(int noCoins) |
| void | [setPlayerName](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#setPlayerName-java.lang.String-)(java.lang.String playerName) |
| void | [setPosition](file:///C:\Users\Fortnox\com\dod\service\model\CharacterModel.html#setPosition-com.dod.models.Point-)(com.dod.models.Point position) |

*Constructor Detail*

* + - CharacterModel

public CharacterModel()

* + - CharacterModel
    - public CharacterModel(java.lang.String playerName,
    - int noCoins,

com.dod.models.Point position)

*Method Detail*

* + - getNoCoins

public int getNoCoins()

* + - getPlayerName

public java.lang.String getPlayerName()

* + - getPosition

public com.dod.models.Point getPosition()

* + - setNoCoins

public void setNoCoins(int noCoins)

* + - setPlayerName

public void setPlayerName(java.lang.String playerName)

* + - setPosition

public void setPosition(com.dod.models.Point position)

* 1. com.dod.service.service.VisibilityService

public class VisibilityService

extends java.lang.Object

implements [IVisibilityService](file:///C:\Users\Fortnox\com\dod\service\service\IVisibilityService.html)

Calculates the visible tiles from the perspective of a particular Character

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [VisibilityService](file:///C:\Users\Fortnox\com\dod\service\service\VisibilityService.html#VisibilityService--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Map | [createVisibleMap](file:///C:\Users\Fortnox\com\dod\service\service\VisibilityService.html#createVisibleMap-com.dod.models.Map-com.dod.models.Character-)(com.dod.models.Map dungeonMap, com.dod.models.Character pchar)  Generates a copy of a Map with the correct isVisible flags set for the perspective of a particular Character |

*Constructor Detail*

* + - VisibilityService

public VisibilityService()

*Method Detail*

* + - createVisibleMap
    - public com.dod.models.Map createVisibleMap(com.dod.models.Map dungeonMap,

com.dod.models.Character pchar)

Generates a copy of a Map with the correct isVisible flags set for the perspective of a particular Character

Specified by:

[createVisibleMap](file:///C:\Users\Fortnox\com\dod\service\service\IVisibilityService.html#createVisibleMap-com.dod.models.Map-com.dod.models.Character-) in interface [IVisibilityService](file:///C:\Users\Fortnox\com\dod\service\service\IVisibilityService.html)

Parameters:

deungeonMap - the Map pchar resides in

pchar - the Character the perspective of which we're generating visibility with

Returns:

a copy of dungeonMap with correct isVisible flags set for the perspective of pchar

* 1. com.dod.service.service.StateService

public class StateService

extends java.lang.Object

implements [IStateService](file:///C:\Users\Fortnox\com\dod\service\service\IStateService.html)

Generates a representation of the current game state form the perspective of a particular character

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [StateService](file:///C:\Users\Fortnox\com\dod\service\service\StateService.html#StateService-com.dod.service.service.IVisibilityService-com.dod.game.IMatchList-)([IVisibilityService](file:///C:\Users\Fortnox\com\dod\service\service\IVisibilityService.html) visibilityService, com.dod.game.IMatchList matchList) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| [GameStateModel](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html) | [GetState](file:///C:\Users\Fortnox\com\dod\service\service\StateService.html#GetState-com.dod.models.Player-)(com.dod.models.Player player)  Generates and returns a representation of the current game state form the perspective of a particular character |

* + - Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

*Constructor Detail*

* + - StateService
    - public StateService([IVisibilityService](file:///C:\Users\Fortnox\com\dod\service\service\IVisibilityService.html) visibilityService,

com.dod.game.IMatchList matchList)

*Method Detail*

* + - GetState

public [GameStateModel](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html) GetState(com.dod.models.Player player)

Generates and returns a representation of the current game state form the perspective of a particular character

Specified by:

[GetState](file:///C:\Users\Fortnox\com\dod\service\service\IStateService.html#GetState-com.dod.models.Player-) in interface [IStateService](file:///C:\Users\Fortnox\com\dod\service\service\IStateService.html)

Parameters:

player - Player the Player a GameStateModel will be generated for

Returns:

GameStateModel a model of the current game state

* 1. com.dod.service.service.ParseService

public class ParseService

extends java.lang.Object

implements [IParseService](file:///C:\Users\Fortnox\com\dod\service\service\IParseService.html)

Implementation of IParseService.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [ParseService](file:///C:\Users\Fortnox\com\dod\service\service\ParseService.html#ParseService--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Map | [parseMap](file:///C:\Users\Fortnox\com\dod\service\service\ParseService.html#parseMap-org.json.simple.JSONObject-)(org.json.simple.JSONObject input)  Parses a Map object from it's JSON encoding |

*Constructor Detail*

* + - ParseService

public ParseService()

*Method Detail*

* + - parseMap
    - public com.dod.models.Map parseMap(org.json.simple.JSONObject input)

throws java.lang.NullPointerException

Parses a Map object from it's JSON encoding

Specified by:

[parseMap](file:///C:\Users\Fortnox\com\dod\service\service\IParseService.html#parseMap-org.json.simple.JSONObject-) in interface [IParseService](file:///C:\Users\Fortnox\com\dod\service\service\IParseService.html)

Parameters:

input - JSONObject a JSON encoding of the Map

Returns:

Map an initialised Map parsed from JSON

Throws:

java.lang.NullPointerException - may be thrown by SimpleJson while parsing

* 1. com.dod.service.service.MovementService

public class MovementService

extends java.lang.Object

implements [IMovementService](file:///C:\Users\Fortnox\com\dod\service\service\IMovementService.html)

Implementation of IMovementService

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [MovementService](file:///C:\Users\Fortnox\com\dod\service\service\MovementService.html#MovementService--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Point | [Move](file:///C:\Users\Fortnox\com\dod\service\service\MovementService.html#Move-java.lang.String-com.dod.models.Player-)(java.lang.String direction, com.dod.models.Player player)  Moves the Player in a particular direction. |

* + - Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

*Constructor Detail*

* + - MovementService

public MovementService()

*Method Detail*

* + - Move
    - public com.dod.models.Point Move(java.lang.String direction,
    - com.dod.models.Player player)

throws java.sql.SQLException

Moves the Player in a particular direction. Will increment player's gold if interacting with gold coins, can trigger end of the Match when player interacts with Exit.

Specified by:

[Move](file:///C:\Users\Fortnox\com\dod\service\service\IMovementService.html#Move-java.lang.String-com.dod.models.Player-) in interface [IMovementService](file:///C:\Users\Fortnox\com\dod\service\service\IMovementService.html)

Parameters:

direction - String a char from {W,S,A,D} pertaining to a particular direction in the WASD layout

player - Player whom's Character will be moved

Returns:

Point that the Player has moved to

Throws:

java.sql.SQLException - if the database cannot be reached or statement fails while inserting new score

* 1. com.dod.service.service.MatchService
* All Implemented Interfaces:

[IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

public class MatchService

extends java.lang.Object

implements [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Manages joining/starting/ending matches.

Makes heavy use of MatchList to store matches in memory.

Uses PlayerRepository to fetch Player data.

Uses IOService and ParseService to load levels when starting a new Match.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [MatchService](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#MatchService-com.dod.service.service.IIOService-com.dod.service.service.IParseService-com.dod.db.repositories.IPlayerRepository-com.dod.game.IMatchList-)([IIOService](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html) ioService, [IParseService](file:///C:\Users\Fortnox\com\dod\service\service\IParseService.html) parseService, com.dod.db.repositories.IPlayerRepository playerRepository, com.dod.game.IMatchList matchList) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) | [createMatch](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#createMatch-java.lang.String-int-)(java.lang.String userName, int level)  Creates a new Match |
| void | [endMatch](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#endMatch-com.dod.models.Player-)(com.dod.models.Player player)  Changes a Match's state to Over |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html)[] | [getLobbyingMatches](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#getLobbyingMatches--)()  Get all Matches currently in the Lobbying state |
| [MatchResultModel](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html) | [getMatchResult](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#getMatchResult-com.dod.models.Player-)(com.dod.models.Player player)  Gets the MatchResultModel for a finished Match todo why not remove the Player from the Match at this point rather than send another request? |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) | [getStatus](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#getStatus-com.dod.models.Player-)(com.dod.models.Player player)  Returns the MatchStatus for a particular Player's Match |
| void | [joinMatch](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#joinMatch-com.dod.models.Player-java.util.UUID-)(com.dod.models.Player player, java.util.UUID matchId)  Adds the Player to a particular Match |
| void | [leaveMatch](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#leaveMatch-com.dod.models.Player-)(com.dod.models.Player player)  Removes a Player from their current ongoing Match |
| void | [startMatch](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html#startMatch-com.dod.models.Player-)(com.dod.models.Player player)  Changes a Match's state to InGame |

*Constructor Detail*

* + - MatchService
    - public MatchService([IIOService](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html) ioService,
    - [IParseService](file:///C:\Users\Fortnox\com\dod\service\service\IParseService.html) parseService,
    - com.dod.db.repositories.IPlayerRepository playerRepository,

com.dod.game.IMatchList matchList)

*Method Detail*

* + - createMatch
    - public [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) createMatch(java.lang.String userName,

int level)

Creates a new Match

Specified by:

[createMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#createMatch-java.lang.String-int-) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Parameters:

userName - String username of the Player who is starting the Match

level - int the number of the level to load for this Match

Returns:

MatchStatus of the newly created Match

* + - endMatch

public void endMatch(com.dod.models.Player player)

Changes a Match's state to Over

Specified by:

[endMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#endMatch-com.dod.models.Player-) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Parameters:

player - Player whose ongoing Match will be modified

* + - getLobbyingMatches

public [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html)[] getLobbyingMatches()

Get all Matches currently in the Lobbying state

Specified by:

[getLobbyingMatches](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#getLobbyingMatches--) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Returns:

MatchStatus[] array of all Matches in the Lobbying state

* + - getMatchResult

public [MatchResultModel](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html) getMatchResult(com.dod.models.Player player)

Gets the MatchResultModel for a finished Match todo why not remove the Player from the Match at this point rather than send another request?

Specified by:

[getMatchResult](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#getMatchResult-com.dod.models.Player-) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Parameters:

player - Player the Player that has a finished Match

Returns:

MatchResultModel pertaining to the player's Match

* + - getStatus

public [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) getStatus(com.dod.models.Player player)

Returns the MatchStatus for a particular Player's Match

Specified by:

[getStatus](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#getStatus-com.dod.models.Player-) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Parameters:

player - Player whose ongoing Match will be fetched

Returns:

* + - joinMatch
    - public void joinMatch(com.dod.models.Player player,
    - java.util.UUID matchId)

throws java.sql.SQLException

Adds the Player to a particular Match

Specified by:

[joinMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#joinMatch-com.dod.models.Player-java.util.UUID-) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Parameters:

player - Player whom will be added

matchID - UUID of the Match that player will be addd to

Throws:

java.sql.SQLException - thrown if Player doesn't exist or a SQL connectivity issue occurs

* + - leaveMatch

public void leaveMatch(com.dod.models.Player player)

Removes a Player from their current ongoing Match

Specified by:

[leaveMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#leaveMatch-com.dod.models.Player-) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Parameters:

player - Player the Player whom will be removed from their ongoing Match

* + - startMatch

public void startMatch(com.dod.models.Player player)

Changes a Match's state to InGame

Specified by:

[startMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#startMatch-com.dod.models.Player-) in interface [IMatchService](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html)

Parameters:

player - Player whose ongoing Match will be modified

* 1. com.dod.service.service.IVisibilityService
* All Known Implementing Classes:

[VisibilityService](file:///C:\Users\Fortnox\com\dod\service\service\VisibilityService.html)

public interface IVisibilityService

Calculates the visible tiles from the perspective of a particular Character

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Map | [createVisibleMap](file:///C:\Users\Fortnox\com\dod\service\service\IVisibilityService.html#createVisibleMap-com.dod.models.Map-com.dod.models.Character-)(com.dod.models.Map deungeonMap, com.dod.models.Character pchar)  Generates a copy of a Map with the correct isVisible flags set for the perspective of a particular Character |

*Method Detail*

* + - createVisibleMap
    - com.dod.models.Map createVisibleMap(com.dod.models.Map deungeonMap,

com.dod.models.Character pchar)

Generates a copy of a Map with the correct isVisible flags set for the perspective of a particular Character

Parameters:

deungeonMap - the Map pchar resides in

pchar - the Character the perspective of which we're generating visibility with

Returns:

a copy of dungeonMap with correct isVisible flags set for the perspective of pchar

* 1. com.dod.service.service.IStateService
* All Known Implementing Classes:

[StateService](file:///C:\Users\Fortnox\com\dod\service\service\StateService.html)

public interface IStateService

Generates a representation of the current game state form the perspective of a particular character

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| [GameStateModel](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html) | [GetState](file:///C:\Users\Fortnox\com\dod\service\service\IStateService.html#GetState-com.dod.models.Player-)(com.dod.models.Player player)  Generates and returns a representation of the current game state form the perspective of a particular character |

*Method Detail*

* + - GetState

[GameStateModel](file:///C:\Users\Fortnox\com\dod\service\model\GameStateModel.html) GetState(com.dod.models.Player player)

Generates and returns a representation of the current game state form the perspective of a particular character

Parameters:

player - Player the Player a GameStateModel will be generated for

Returns:

GameStateModel a model of the current game state

* 1. com.dod.service.service.IParseService
* All Known Implementing Classes:

[ParseService](file:///C:\Users\Fortnox\com\dod\service\service\ParseService.html)

public interface IParseService

Parses JSON objects- namely the Map

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Map | [parseMap](file:///C:\Users\Fortnox\com\dod\service\service\IParseService.html#parseMap-org.json.simple.JSONObject-)(org.json.simple.JSONObject input)  Parses a Map object from it's JSON encoding |

*Method Detail*

* + - parseMap
    - com.dod.models.Map parseMap(org.json.simple.JSONObject input)

throws java.lang.NullPointerException

Parses a Map object from it's JSON encoding

Parameters:

input - JSONObject a JSON encoding of the Map

Returns:

Map an initialised Map parsed from JSON

Throws:

java.lang.NullPointerException - may be thrown by SimpleJson while parsing

* 1. com.dod.service.service.IOService
* All Implemented Interfaces:

[IIOService](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html)

public class IOService

extends java.lang.Object

implements [IIOService](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html)

Handles IO within the Service

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [IOService](file:///C:\Users\Fortnox\com\dod\service\service\IOService.html#IOService--)() |
| [IOService](file:///C:\Users\Fortnox\com\dod\service\service\IOService.html#IOService-java.lang.String-)(java.lang.String pathToAssets) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| org.json.simple.JSONObject | [getJsonObject](file:///C:\Users\Fortnox\com\dod\service\service\IOService.html#getJsonObject-java.lang.String-)(java.lang.String path)  Fetches an asset as parsed JSON |
| java.lang.String | [getString](file:///C:\Users\Fortnox\com\dod\service\service\IOService.html#getString-java.lang.String-)(java.lang.String path)  Fetches an asset as a String |

*Constructor Detail*

* + - IOService

public IOService()

* + - IOService

public IOService(java.lang.String pathToAssets)

*Method Detail*

* + - getJsonObject
    - public org.json.simple.JSONObject getJsonObject(java.lang.String path)
    - throws java.io.IOException,

org.json.simple.parser.ParseException

Fetches an asset as parsed JSON

Specified by:

[getJsonObject](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html#getJsonObject-java.lang.String-) in interface [IIOService](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html)

Parameters:

path - String the path to the asset we are to fetch

Returns:

JSONObject the parsed content of the asset

Throws:

java.io.IOException - if the file is missing

org.json.simple.parser.ParseException - if the file isn't encoded in valid JSON

* + - getString
    - public java.lang.String getString(java.lang.String path)

throws java.io.IOException

Fetches an asset as a String

Specified by:

[getString](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html#getString-java.lang.String-) in interface [IIOService](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html)

Parameters:

path - String the path to the asset we are to fetch

Returns:

String the contents of the asset

Throws:

java.io.IOException - if the file is missing

* 1. com.dod.service.service.IMovementService
* All Known Implementing Classes:

[MovementService](file:///C:\Users\Fortnox\com\dod\service\service\MovementService.html)

public interface IMovementService

Interface for MovementService. Handles game logic to move a character from one point to another.

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.models.Point | [Move](file:///C:\Users\Fortnox\com\dod\service\service\IMovementService.html#Move-java.lang.String-com.dod.models.Player-)(java.lang.String direction, com.dod.models.Player player)  Moves the Player in a particular direction. |

*Method Detail*

* + - Move
    - com.dod.models.Point Move(java.lang.String direction,
    - com.dod.models.Player player)

throws java.sql.SQLException

Moves the Player in a particular direction. Will increment player's gold if interacting with gold coins, can trigger end of the Match when player interacts with Exit.

Parameters:

direction - String a char from {W,S,A,D} pertaining to a particular direction in the WASD layout

player - Player whom's Character will be moved

Returns:

Point that the Player has moved to

Throws:

java.sql.SQLException - if the database cannot be reached or statement fails while inserting new score

* 1. com.dod.service.service.IMatchService
* All Known Implementing Classes:

[MatchService](file:///C:\Users\Fortnox\com\dod\service\service\MatchService.html)

public interface IMatchService

Manages joining/starting/ending matches.

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) | [createMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#createMatch-java.lang.String-int-)(java.lang.String userName, int level)  Creates a new Match |
| void | [endMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#endMatch-com.dod.models.Player-)(com.dod.models.Player player)  Changes a Match's state to Over |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html)[] | [getLobbyingMatches](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#getLobbyingMatches--)()  Get all Matches currently in the Lobbying state |
| [MatchResultModel](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html) | [getMatchResult](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#getMatchResult-com.dod.models.Player-)(com.dod.models.Player player)  Gets the MatchResultModel for a finished Match todo why not remove the Player from the Match at this point rather than send another request? |
| [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) | [getStatus](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#getStatus-com.dod.models.Player-)(com.dod.models.Player player)  Returns the MatchStatus for a particular Player's Match |
| void | [joinMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#joinMatch-com.dod.models.Player-java.util.UUID-)(com.dod.models.Player player, java.util.UUID matchID)  Adds the Player to a particular Match |
| void | [leaveMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#leaveMatch-com.dod.models.Player-)(com.dod.models.Player player)  Removes a Player from their current ongoing Match |
| void | [startMatch](file:///C:\Users\Fortnox\com\dod\service\service\IMatchService.html#startMatch-com.dod.models.Player-)(com.dod.models.Player player)  Changes a Match's state to InGame |

*Method Detail*

* + - createMatch
    - [MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) createMatch(java.lang.String userName,

int level)

Creates a new Match

Parameters:

userName - String username of the Player who is starting the Match

level - int the number of the level to load for this Match

Returns:

MatchStatus of the newly created Match

* + - endMatch

void endMatch(com.dod.models.Player player)

Changes a Match's state to Over

Parameters:

player - Player whose ongoing Match will be modified

* + - getLobbyingMatches

[MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html)[] getLobbyingMatches()

Get all Matches currently in the Lobbying state

Returns:

MatchStatus[] array of all Matches in the Lobbying state

* + - getMatchResult

[MatchResultModel](file:///C:\Users\Fortnox\com\dod\service\model\MatchResultModel.html) getMatchResult(com.dod.models.Player player)

Gets the MatchResultModel for a finished Match todo why not remove the Player from the Match at this point rather than send another request?

Parameters:

player - Player the Player that has a finished Match

Returns:

MatchResultModel pertaining to the player's Match

* + - getStatus

[MatchStatus](file:///C:\Users\Fortnox\com\dod\service\model\MatchStatus.html) getStatus(com.dod.models.Player player)

Returns the MatchStatus for a particular Player's Match

Parameters:

player - Player whose ongoing Match will be fetched

Returns:

* + - joinMatch
    - void joinMatch(com.dod.models.Player player,
    - java.util.UUID matchID)

throws java.sql.SQLException

Adds the Player to a particular Match

Parameters:

player - Player whom will be added

matchID - UUID of the Match that player will be addd to

Throws:

java.sql.SQLException - thrown if Player doesn't exist or a SQL connectivity issue occurs

* + - leaveMatch

void leaveMatch(com.dod.models.Player player)

Removes a Player from their current ongoing Match

Parameters:

player - Player the Player whom will be removed from their ongoing Match

* + - startMatch

void startMatch(com.dod.models.Player player)

Changes a Match's state to InGame

Parameters:

player - Player whose ongoing Match will be modified

* 1. com.dod.service.service.IIOService
* All Known Implementing Classes:

[IOService](file:///C:\Users\Fortnox\com\dod\service\service\IOService.html)

public interface IIOService

Handles IO within the Service

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| org.json.simple.JSONObject | [getJsonObject](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html#getJsonObject-java.lang.String-)(java.lang.String path)  Fetches an asset as parsed JSON |
| java.lang.String | [getString](file:///C:\Users\Fortnox\com\dod\service\service\IIOService.html#getString-java.lang.String-)(java.lang.String path)  Fetches an asset as a String |

*Method Detail*

* + - getJsonObject
    - org.json.simple.JSONObject getJsonObject(java.lang.String path)
    - throws java.io.IOException,

org.json.simple.parser.ParseException

Fetches an asset as parsed JSON

Parameters:

path - String the path to the asset we are to fetch

Returns:

JSONObject the parsed content of the asset

Throws:

java.io.IOException - if the file is missing

org.json.simple.parser.ParseException - if the file isn't encoded in valid JSON

* + - getString
    - java.lang.String getString(java.lang.String path)

throws java.io.IOException

Fetches an asset as a String

Parameters:

path - String the path to the asset we are to fetch

Returns:

String the contents of the asset

Throws:

java.io.IOException - if the file is missing

* 1. com.dod.service.service.IAuthenticationService
* All Known Implementing Classes:

[AuthenticationService](file:///C:\Users\Fortnox\com\dod\service\service\AuthenticationService.html)

public interface IAuthenticationService

Handles authenticating a user against their user/pass combo

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [Login](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html#Login-com.dod.service.model.LoginModel-)([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)  Registers a new user |
| boolean | [Register](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html#Register-com.dod.service.model.LoginModel-)([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)  Registers a new user |

*Method Detail*

* + - Login

boolean Login([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)

Registers a new user

Parameters:

model - LoginModel containing the user/pass to be authorised

Returns:

boolean true if the user is authorised, otherwise false

* + - Register

boolean Register([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)

Registers a new user

Parameters:

model - LoginModel containing the user/pass to be registered

Returns:

boolean true if successful otherwise false

* 1. com.dod.service.service.AuthenticationService
* All Implemented Interfaces:

[IAuthenticationService](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html)

public class AuthenticationService

extends java.lang.Object

implements [IAuthenticationService](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html)

Handles authenticating a user against their user/pass combo

Uses a salt, generated using a secure RNG

Uses PlayerRepository to fetch Player database details

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [AuthenticationService](file:///C:\Users\Fortnox\com\dod\service\service\AuthenticationService.html#AuthenticationService-com.dod.db.repositories.IPlayerRepository-)(com.dod.db.repositories.IPlayerRepository repository) |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| boolean | [Login](file:///C:\Users\Fortnox\com\dod\service\service\AuthenticationService.html#Login-com.dod.service.model.LoginModel-)([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)  Registers a new user |
| boolean | [Register](file:///C:\Users\Fortnox\com\dod\service\service\AuthenticationService.html#Register-com.dod.service.model.LoginModel-)([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)  Registers a new user |

*Constructor Detail*

* + - AuthenticationService

public AuthenticationService(com.dod.db.repositories.IPlayerRepository repository)

*Method Detail*

* + - Login

public boolean Login([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)

Registers a new user

Specified by:

[Login](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html#Login-com.dod.service.model.LoginModel-) in interface [IAuthenticationService](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html)

Parameters:

model - LoginModel containing the user/pass to be authorised

Returns:

boolean true if the user is authorised, otherwise false

* + - Register

public boolean Register([LoginModel](file:///C:\Users\Fortnox\com\dod\service\model\LoginModel.html) model)

Registers a new user

Specified by:

[Register](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html#Register-com.dod.service.model.LoginModel-) in interface [IAuthenticationService](file:///C:\Users\Fortnox\com\dod\service\service\IAuthenticationService.html)

Parameters:

model - LoginModel containing the user/pass to be registered

Returns:

boolean true if successful otherwise false

* 1. com.dod.service.Main

public class Main

extends java.lang.Object

Main class.

*Field Summary*

|  |  |
| --- | --- |
| Fields | |
| Modifier and Type | Field and Description |
| static java.lang.String | [BASE\_URI](file:///C:\Users\Fortnox\AppData\com\dod\service\Main.html#BASE_URI) |

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Main](file:///C:\Users\Fortnox\AppData\com\dod\service\Main.html#Main--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| static void | [main](file:///C:\Users\Fortnox\AppData\com\dod\service\Main.html#main-java.lang.String:A-)(java.lang.String[] args)  Main method. |
| static org.glassfish.grizzly.http.server.HttpServer | [startServer](file:///C:\Users\Fortnox\AppData\com\dod\service\Main.html#startServer--)()  Starts Grizzly HTTP server exposing JAX-RS resources defined in this application. |

*Field Detail*

* + - BASE\_URI

public static final java.lang.String BASE\_URI

See Also:

[Constant Field Values](file:///C:\Users\Fortnox\AppData\constant-values.html#com.dod.service.Main.BASE_URI)

*Constructor Detail*

* + - Main

public Main()

*Method Detail*

* + - main
    - public static void main(java.lang.String[] args)

throws java.io.IOException

Main method.

Parameters:

args -

Throws:

java.io.IOException

* + - startServer

public static org.glassfish.grizzly.http.server.HttpServer startServer()

Starts Grizzly HTTP server exposing JAX-RS resources defined in this application.

Returns:

Grizzly HTTP server.

* 1. com.dod.bot.communicators.CommunicatorBase
* Direct Known Subclasses:

[MatchCommunicator](file:///C:\Users\Fortnox\com\dod\bot\communicators\MatchCommunicator.html), [MoveCommunicator](file:///C:\Users\Fortnox\com\dod\bot\communicators\MoveCommunicator.html), [stateCommunicator](file:///C:\Users\Fortnox\com\dod\bot\communicators\stateCommunicator.html)

public class CommunicatorBase

extends java.lang.Object

A base class that handles generic communication to/from the server.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [CommunicatorBase](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#CommunicatorBase--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| protected javax.ws.rs.core.Response | [get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-javax.ws.rs.client.Invocation.Builder-)(javax.ws.rs.client.Invocation.Builder request)  Invokes the specified Request as a GET request |
| protected javax.ws.rs.core.Response | [get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-java.lang.String-)(java.lang.String path)  Sends a GET request to a particular path on the web service |
| protected static javax.ws.rs.client.WebTarget | [getTarget](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#getTarget--)() |
| protected javax.ws.rs.core.Response | [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-javax.ws.rs.client.Invocation.Builder-javax.ws.rs.core.MultivaluedMap-)(javax.ws.rs.client.Invocation.Builder request, javax.ws.rs.core.MultivaluedMap<java.lang.String,java.lang.String> params)  Invokes the request as a POST request with the specified parameters as form parameters. |
| protected javax.ws.rs.core.Response | [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-java.lang.String-javax.ws.rs.core.MultivaluedMap-)(java.lang.String path, javax.ws.rs.core.MultivaluedMap<java.lang.String,java.lang.String> params)  Posts a web request to the specified path with the specified parameters as form parameters. |
| protected javax.ws.rs.client.Invocation.Builder | [request](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#request-java.lang.String-)(java.lang.String path)  Generates a request to the specified path |

* + - Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

* + *Constructor Detail*
    - CommunicatorBase

public CommunicatorBase()

* + *Method Detail*
    - get

protected javax.ws.rs.core.Response get(javax.ws.rs.client.Invocation.Builder request)

Invokes the specified Request as a GET request

Parameters:

request - Invocation.Builder a Builder that generates an Invocation of a particular web resource.

Returns:

* + - get

protected javax.ws.rs.core.Response get(java.lang.String path)

Sends a GET request to a particular path on the web service

Parameters:

path - String the path to send the GET request to

Returns:

Response the response from the server

* + - getTarget

protected static javax.ws.rs.client.WebTarget getTarget()

* + - post
    - protected javax.ws.rs.core.Response post(javax.ws.rs.client.Invocation.Builder request,

javax.ws.rs.core.MultivaluedMap<java.lang.String,java.lang.String> params)

Invokes the request as a POST request with the specified parameters as form parameters.

Parameters:

request - Invocation.Builder a Builder that generates an Invocation of a particular web resource.

params - MultiValuedHashMap the parameters to send with the POST request

Returns:

Response the response from the service

* + - post
    - protected javax.ws.rs.core.Response post(java.lang.String path,

javax.ws.rs.core.MultivaluedMap<java.lang.String,java.lang.String> params)

Posts a web request to the specified path with the specified parameters as form parameters.

Parameters:

path - String the path to send the POST request to

params - MultiValuedHashMap the parameters to send with the POST request

Returns:

Response the response from the service

* + - request

protected javax.ws.rs.client.Invocation.Builder request(java.lang.String path)

Generates a request to the specified path

Parameters:

path - String the path to request

Returns:

Invocation.Builder a Builder that generates an Invocation of the specified web resource.

* 1. com.dod.bot.communicators.stateCommunicator

public class stateCommunicator

extends [CommunicatorBase](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html)

Communicates status requests to the server

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [stateCommunicator](file:///C:\Users\Fortnox\com\dod\bot\communicators\stateCommunicator.html#stateCommunicator--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| com.dod.service.model.GameStateModel | [getState](file:///C:\Users\Fortnox\com\dod\bot\communicators\stateCommunicator.html#getState--)()  Gets the current state from the web service. |

* + - Methods inherited from class com.dod.bot.communicators.[CommunicatorBase](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html)

[get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-javax.ws.rs.client.Invocation.Builder-), [get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-java.lang.String-), [getTarget](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#getTarget--), [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-javax.ws.rs.client.Invocation.Builder-javax.ws.rs.core.MultivaluedMap-), [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-java.lang.String-javax.ws.rs.core.MultivaluedMap-), [request](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#request-java.lang.String-)

*Constructor Detail*

* + - stateCommunicator

public stateCommunicator()

*Method Detail*

* + - getState

public com.dod.service.model.GameStateModel getState()

Gets the current state from the web service.

Returns:

GameStateModel a model representing the game's current state.

* 1. com.dod.bot.communicators.MoveCommunicator

public class MoveCommunicator

extends [CommunicatorBase](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html)

Communicates move requests to the server

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [MoveCommunicator](file:///C:\Users\Fortnox\com\dod\bot\communicators\MoveCommunicator.html#MoveCommunicator--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [moveDirection](file:///C:\Users\Fortnox\com\dod\bot\communicators\MoveCommunicator.html#moveDirection-java.lang.String-)(java.lang.String direction)  Sends a request to the web service to move in a particular direction |

* + - Methods inherited from class com.dod.bot.communicators.[CommunicatorBase](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html)

[get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-javax.ws.rs.client.Invocation.Builder-), [get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-java.lang.String-), [getTarget](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#getTarget--), [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-javax.ws.rs.client.Invocation.Builder-javax.ws.rs.core.MultivaluedMap-), [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-java.lang.String-javax.ws.rs.core.MultivaluedMap-), [request](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#request-java.lang.String-)

*Constructor Detail*

* + - MoveCommunicator

public MoveCommunicator()

*Method Detail*

* + - moveDirection

public void moveDirection(java.lang.String direction)

Sends a request to the web service to move in a particular direction

Parameters:

direction - String the direction to move in, a char from the set {W,A,S,D} corresponding to WASD directions.

* 1. com.dod.bot.communicators.MatchCommunicator

public class MatchCommunicator

extends [CommunicatorBase](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html)

Handles match requests to the server

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [MatchCommunicator](file:///C:\Users\Fortnox\com\dod\bot\communicators\MatchCommunicator.html#MatchCommunicator--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [joinMatch](file:///C:\Users\Fortnox\com\dod\bot\communicators\MatchCommunicator.html#joinMatch-java.util.UUID-)(java.util.UUID matchId)  Sends a request to the web service to join the specified Match. |

* + - Methods inherited from class com.dod.bot.communicators.[CommunicatorBase](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html)

[get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-javax.ws.rs.client.Invocation.Builder-), [get](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#get-java.lang.String-), [getTarget](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#getTarget--), [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-javax.ws.rs.client.Invocation.Builder-javax.ws.rs.core.MultivaluedMap-), [post](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#post-java.lang.String-javax.ws.rs.core.MultivaluedMap-), [request](file:///C:\Users\Fortnox\com\dod\bot\communicators\CommunicatorBase.html#request-java.lang.String-)

* + - Methods inherited from class java.lang.Object

clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait

*Constructor Detail*

* + - MatchCommunicator

public MatchCommunicator()

*Method Detail*

* + - joinMatch

public void joinMatch(java.util.UUID matchId)

Sends a request to the web service to join the specified Match.

Parameters:

matchId - UUID the ID of the Match to join

* 1. com.dod.bot.Map

public class Map

extends java.lang.Object

Map for the bot modeled on the responses from the server.

Should work in theory but not tested as we ran out of time.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Map](file:///C:\Users\Fortnox\AppData\com\dod\bot\Map.html#Map--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [addTile](file:///C:\Users\Fortnox\AppData\com\dod\bot\Map.html#addTile-com.dod.service.model.TileModel:A-)(com.dod.service.model.TileModel[] tiles)  Add a tile to the map. |

*Constructor Detail*

* + - Map

public Map()

*Method Detail*

* + - addTile

public void addTile(com.dod.service.model.TileModel[] tiles)

Add a tile to the map. Expands the map to the correct size of necessary.

Parameters:

tiles - TileModel[] a collection of Tiles to add to the Map.

* 1. com.dod.bot.Main

public class Main

extends java.lang.Object

Gets command parameters and intitialises bot

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Main](file:///C:\Users\Fortnox\AppData\com\dod\bot\Main.html#Main--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| static void | [main](file:///C:\Users\Fortnox\AppData\com\dod\bot\Main.html#main-java.lang.String:A-)(java.lang.String[] args)  Parses the input and starts the Bot |

*Constructor Detail*

* + - Main

public Main()

*Method Detail*

* + - main

public static void main(java.lang.String[] args)

Parses the input and starts the Bot

Parameters:

args - expects 1 argument of ID for match to join

* 1. com.dod.bot.Bot

public class Bot

extends java.lang.Object

The main bot object. Makes basic decisions and uses the Communicators to enact these decisions.

Has no real intelligence at the moment. In the future we could make it much more intelligent using the Map class

to store beliefs about the world and use path-finding to hunt out gold to get the most score.

*Constructor Summary*

|  |
| --- |
| Constructors |
| Constructor and Description |
| [Bot](file:///C:\Users\Fortnox\AppData\com\dod\bot\Bot.html#Bot--)() |

*Method Summary*

|  |  |
| --- | --- |
| All Methods | |
| Modifier and Type | Method and Description |
| void | [play](file:///C:\Users\Fortnox\AppData\com\dod\bot\Bot.html#play-java.util.UUID-)(java.util.UUID matchId)  Joins a match and then randomly picks a direction to move in every 5th of a second. |

*Constructor Detail*

* + - Bot

public Bot()

*Method Detail*

* + - play

public void play(java.util.UUID matchId)

Joins a match and then randomly picks a direction to move in every 5th of a second. Stops when the Match is over.

Parameters:

matchId - UUID The ID of the match to join

* 1. Javascript

Proprietary Javascript is generally written in a single file because of the additional overhead of having multiple HTTP request to fetch various Javascript files, and also because having many separate Javascript files can introduce race conditions as different files load and execute in unpredictable times. Our proprietary Javascript file is *main.js*.

This makes it difficult to arrange Javascript in a readable manner but we’ve accounted for this by using Javascript namespacing (Croll, 2010). We created the root namespace “game” and from there have the following namespaces:

* game.menu- functionality surrounding menu buttons and switching between menu pages
* game.auth- functionality surrounding sending authorisation requests to and from the web service
* game.constants- a central location for storing constant values
* game.func- generic functionalities used across various namespaces
* game.match- functionality regarding joining, leaving, listing etc matches.
* game.match.var- variables pertaining to matches, for keeping track of a match status or list of matches.
* game.var- variables pertaining to the game, particularly involving graphics and timesteps.
* game.var.colours- the colours of various tiles in the first game display we wrote. Deprecated since we started using bitmap graphics.

Each function is, as much as possible, named in the most literal way to describe exactly what it does- such as “setAllTilesNotVisible” or “displayMatchMenu”.

The structure of our Javascript is to firstly declare each individual function and then when the document loads assigns functions to buttons, prepares the login screen and initialises a key press event listener for game interactivity.

What follows is a documentation of some but not all of the Javascript functions:

* game.func.get
  + Generic method to make a GET request. Uses xhr fields to ensure cookies are sent across domain.
  + Param “url”: {string} to send the request to
  + Param “data”: {string}to send with the request
  + Param “success”: function to execute on success
  + Param “error”: function to execute on failure
* game.func.post
* Generic method to make a POST request. Uses xhr fields to ensure cookies are sent across domain.
  + Param “url”: {string}to send the request to
  + Param “data”: {string}to send with the request
  + Param “success”: function to execute on success
  + Param “error”: function to execute on failure
* game.func.getApiPath
  + Constructs an url of an endpoint given the endpoint's controller and action names.
  + Param “controller”: {string} the controller to contact
  + Param “action”: {string} the action to contact
  + Returns: (string) the constructed path
* game.menu.displayScoreboard
  + Renders the scoreboard in the #score-table table.
  + Param “scoreboard”: the JSON object returned from a query to the score/top endpoint
* game.match.new
  + Starts a new Match by sending a request to the web service
* game.match.start
  + Starts the player's current Match by sending a request to the web service
* game.match.initGameScreen
  + Initialises the game screen. Resets game variables and creates a new HTML5 canvas. Begins the game loop.
* game.render
  + Renders the current game state to the canvas.
* game.updateStatus
  + Updates the current game status based on the result from a status request.
  + Will end the gam eif the status response indicates that the game is over.
* game.var.addTile
  + Adds a tile if it doesn't already exist in memory, or updates the tile if it does.
  + Will expand the size of game.var.tiles if it isn't large enough.
* game.updateGame
  + Makes a game status request if game.var.timestep has passed since the last request.
  + Loops while game.var.isRunning
* game.match.updateMatchList
  + Makes a match list request if game.match.var.timeStep has passed since the last request
* game.match.updateStatus
  + Makes a Match Status request if game.match.var.timeStep has passed since the last request.
  + Loops while game.match.var.isWaitingToStart
* game.match.displayMatchMenu
  + Generates the Match Status details on the Match screen.
  + Param “data”: Match Status as a JSON object
* game.menu.showEndGameScreen
  + Builds the end-game screen and switches to it
  + Param “result”: a MatchResultModel object

1. Implementation

Source code:

* 1. DungeonOfDooom-master\Sourcecode\project\assets\maps
     1. level1.json

{

"lev":

{

"name":"level1",

"coin\_num":30,

"coin\_win":20,

"Width" : 26,

"Height" : 18,

"tiles":

[

{"type":0,"visibility":true},

{"type":1,"visibility":true},

{"type":1,"visibility":true}

],

"map":

[

[{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0}],

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]

}

}

* + 1. level2.json

{

"lev":

{

"name":"level2",

"coin\_num":25,

"coin\_win":15,

"Width" : 26,

"Height" : 18,

"map":

[

[{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0}],

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]

}

}

* + 1. level3.json

{

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{

"name":"level3",

"coin\_num":25,

"coin\_win":20,

"Width" : 26,

"Height" : 18,

"map":

[

[{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0},{"type":0}],

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]

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\assets\test
     1. test.json

{

"id": 1

}

* + 1. test.asset

testasset :)

* 1. DungeonOfDooom-master\Sourcecode\project\src\bot\main\java\com\dod\bot\communicators
     1. CommunicatorBase.java

package com.dod.bot.communicators;

import javax.ws.rs.client.\*;

import javax.ws.rs.core.MultivaluedHashMap;

import javax.ws.rs.core.MultivaluedMap;

import javax.ws.rs.core.Response;

import javax.ws.rs.ext.ContextResolver;

import org.glassfish.jersey.moxy.json.MoxyJsonConfig;

import org.glassfish.jersey.moxy.json.MoxyJsonFeature;

import java.util.HashMap;

import java.util.Map;

import java.util.UUID;

/\*\*

\* Handles communication to/from the server

\*/

public class CommunicatorBase {

private static WebTarget target;

private static String sessionId;

private static String username;

private static String password;

private static final String apiAddress = "http://localhost:8080";

protected static WebTarget getTarget() {

if(target == null)

init();

return target;

}

private static void init() {

Map<String, String> namespacePrefixMapper = new HashMap<String, String>();

namespacePrefixMapper.put("http://www.w3.org/2001/XMLSchema-instance", "xsi");

MoxyJsonConfig moxyJsonConfig = new MoxyJsonConfig()

.setNamespacePrefixMapper(namespacePrefixMapper)

.setNamespaceSeparator(':');

final ContextResolver<MoxyJsonConfig> jsonConfigResolver = moxyJsonConfig.resolver();

Client c = ClientBuilder.newBuilder()

.register(MoxyJsonFeature.class)

.register(jsonConfigResolver)

.build();

//Generate random user/pass

username = UUID.randomUUID().toString();

password = UUID.randomUUID().toString();

target = c.target(apiAddress);

sessionId = registerUserAndGetSessionId(username, password);

}

private static String registerUserAndGetSessionId(String username, String password) {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", username);

formData.add("password", password);

Response registerResponse = getTarget().path("player/register").request().post(Entity.form(formData));

//get the sessionId so we can send authorised session cookies with requests

return registerResponse.getCookies().get("JSESSIONID").getValue();

}

protected Invocation.Builder request(String path) {

Invocation.Builder request = getTarget().path(path).request();

request.cookie("JSESSIONID",sessionId);

return request;

}

protected Response post(String path, MultivaluedMap<String, String> params) {

return post(request(path), params);

}

protected Response post(Invocation.Builder request, MultivaluedMap<String, String> params) {

return request.post(Entity.form(params));

}

protected Response get(String path) {

return get(request(path));

}

protected Response get(Invocation.Builder request) {

return request.get();

}

}

* + 1. MatchCommunicator.java

package com.dod.bot.communicators;

import javax.ws.rs.core.MultivaluedHashMap;

import javax.ws.rs.core.MultivaluedMap;

import java.util.UUID;

/\*\*

\* Handles match requests to the server

\*/

public class MatchCommunicator extends CommunicatorBase {

public void joinMatch(UUID matchId) {

MultivaluedMap<String, String> params = new MultivaluedHashMap<String, String>();

params.add("matchId", matchId.toString());

post("match/join", params);

}

}

* + 1. MoveCommunicator.java

package com.dod.bot.communicators;

import javax.ws.rs.core.MultivaluedHashMap;

import javax.ws.rs.core.MultivaluedMap;

/\*\*

\* Communicates move requests to the server

\*/

public class MoveCommunicator extends CommunicatorBase {

public void moveDirection(String direction) {

MultivaluedMap<String, String> params = new MultivaluedHashMap<String, String>();

params.add("key", direction);

post("game/move", params);

}

}

* + 1. stateCommunicator.java

package com.dod.bot.communicators;

import com.dod.service.model.GameStateModel;

/\*\*

\* Communicates status requests to the server

\*/

public class stateCommunicator extends CommunicatorBase {

public GameStateModel getState() {

return get("game/status").readEntity(GameStateModel.class);

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\bot\main\java\com\dod\bot
     1. Bot.java

package com.dod.bot;

import com.dod.service.model.GameStateModel;

import com.dod.bot.communicators.MatchCommunicator;

import com.dod.bot.communicators.MoveCommunicator;

import com.dod.bot.communicators.stateCommunicator;

import com.dod.service.model.TileModel;

import java.util.List;

import java.util.Random;

import java.util.UUID;

/\*\*

\* The bot

\*/

public class Bot {

private MatchCommunicator matchCommunicator;

private MoveCommunicator moveCommunicator;

private com.dod.bot.communicators.stateCommunicator stateCommunicator;

private double delta;

private double timestep = 200 \* 1000000;

private long previousTime;

private boolean isPlaying = false;

private GameStateModel state;

private Random random;

public Bot() {

this.matchCommunicator = new MatchCommunicator();

this.moveCommunicator = new MoveCommunicator();

this.stateCommunicator = new stateCommunicator();

random = new Random();

}

public void play(UUID matchId) {

isPlaying = true;

matchCommunicator.joinMatch(matchId);

state = stateCommunicator.getState();

delta = 0;

previousTime = System.nanoTime();

while(isPlaying) {

long currentTime = System.nanoTime();

delta += currentTime - previousTime;

previousTime = currentTime;

if(delta > timestep) {

delta -= timestep;

state = stateCommunicator.getState();

if (random.nextBoolean()) {

moveCommunicator.moveDirection(random.nextBoolean() ? "A" : "D");

} else {

moveCommunicator.moveDirection(random.nextBoolean() ? "W" : "S");

}

if (state.isHasEnded()) {

isPlaying = false;

}

}

}

}

}

* + 1. Map.java

package com.dod.bot;

import com.dod.models.Point;

import com.dod.service.model.TileModel;

import java.util.ArrayList;

import java.util.List;

/\*\*

\* Map for the bot modeled on the responses from the server

\*/

public class Map {

private ArrayList<List<TileModel>> map;

public Map() {

map = new ArrayList<List<TileModel>>();

}

public void addTile(TileModel[] tiles) {

int xMax = 0;

int yMax = 0;

for(TileModel tile : tiles) {

if(tile.getPosition().x > xMax) xMax = tile.getPosition().x;

if(tile.getPosition().y > yMax) yMax = tile.getPosition().y;

}

for(int x = 0; x < xMax; x++) {

List<TileModel> row = map.get(x);

if(row == null) {

row = new ArrayList<TileModel>();

map.add(row);

}

for(int y =0; y < yMax; y++) {

TileModel tile = null;

for(TileModel tileInput : tiles) {

if(tileInput.getPosition().equals(new Point(x,y))) {

tile = tileInput;

break;

}

}

//row.set(y, tile);

}

}

}

}

* + 1. Main.java

package com.dod.bot;

import java.util.UUID;

/\*\*

\* Gets command parameters and intitialises bot

\*/

public class Main {

/\*\*

\* Start the bot

\* @param args expects 1 argument of ID for match to join

\*/

public static void main(String args[]) {

UUID matchId = null;

try {

matchId = UUID.fromString(args[0]);

}

catch(Exception e) {

e.printStackTrace();

return;

}

Bot bot = new Bot();

bot.play(matchId);

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\bot
     1. pom.xml

<?xml version="1.0" encoding="UTF-8"?>

<project xmlns="http://maven.apache.org/POM/4.0.0"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>dungeon-of-doom</groupId>

<artifactId>dungeon-of-doom-bot</artifactId>

<version>1.0-SNAPSHOT</version>

<dependencies>

<dependency>

<groupId>org.glassfish.jersey.media</groupId>

<artifactId>jersey-media-moxy</artifactId>

<version>2.24.1</version>

</dependency>

<dependency>

<groupId>dungeon-of-doom</groupId>

<artifactId>dungeon-of-doom-service</artifactId>

<version>1.0</version>

</dependency>

</dependencies>

<build>

<plugins>

<plugin>

<!-- Mark JAR as executable -->

<groupId>org.apache.maven.plugins</groupId>

<artifactId>maven-jar-plugin</artifactId>

<version>3.0.2</version>

<configuration>

<archive>

<manifest>

<addClasspath>true</addClasspath>

<classpathPrefix>lib/</classpathPrefix>

<mainClass>com.dod.bot.Main</mainClass>

</manifest>

</archive>

</configuration>

</plugin>

</plugins>

</build>

</project>

* 1. DungeonOfDooom-master\Sourcecode\project\src\Client\assets
     1. style.css

/\* Dungon of Doom CSS stylesheet 2016 University of Bath \*/

ul {

list-style-type: none;

margin: 0;

padding: 0;

overflow: hidden;

background-color: #333;

}

ul#logged-in-header {

display: none;

}

ul#logged-in-header li {

cursor: pointer;

}

li {

float: left;

}

li a {

display: block;

color: #EEE;

text-align: center;

padding: 14px 16px;

text-decoration: none;

}

li a:hover:not(.active) {

background-color: #000000;

}

.join-link {

color:#11D;

cursor: pointer;

}

.active {

background-color: #af222a;

}

body {

background-image: url('header.jpg');

background-color: #cccccc;

background-size: cover;

font-family: 'VT323', monospace;

color: #EEE;

}

section {

position: fixed;

border: #333333;

background-color: rgba(52, 7, 5, 0.55);

margin-right: 7%;

margin-left: 7%;

margin-top: 3%;

width: 87%;

height: 80%;

text-align: center;

display:none; !important

}

.center {

position :relative;

margin-left: 30%;

width: 45%;

padding: 20px;

}

h1 {

text-decoration: underline;

color: #EEE;

font-size: 40px;

}

#score-table {

border-collapse: collapse;

width: 100%;

}

#score-table td, #score-table th {

border: 1px solid #ddd;

font-size: 20px;

text-align: center;

padding: 8px;

color: #EEE;

}

#score-table tr:hover {

background-color: #333;

}

#score-table th {

padding-top: 12px;

padding-bottom: 12px;

text-align: center;

font-size: 30px;

color: #EEE;

}

footer {

background-color: rgba(0, 0, 0, 0.77);

width: 100%;

bottom: 0;

position: fixed;

}

.container {

margin-left: 30%;

padding: 40px;

position: relative;

margin-top: 9%;

width: 72%;

font-size: large;

}

input[type=text], input[type=password] {

width: 40%;

padding: 12px 20px;

margin: 8px 0;

display: inline-block;

border: 1px solid #ccc;

box-sizing: border-box;

font-size: medium;

}

input {

color:#000;

}

button {

background-color: rgba(0, 0, 0, 0.69);

color: #EEE;

padding: 14px 20px;

margin: 10px;

border: none;

cursor: pointer;

width: 40%;

margin-left: 8%;

}

ul#guest-header {

list-style-type: none;

margin: 0;

padding: 0;

overflow: hidden;

background-color: #333;

}

ul#guest-header li {

text-align: center;

color:white;

font-size: 32px;

}

h3 {

text-decoration: underline;

}

.validation {

color:red;

font-weight:bold;

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\Client\scripts
     1. main.js

/\*\*

\* 2016 Dungeon of Dooom University of Bath.

\* "Part of the graphic tiles used in this program is the Public domain roguelike tileset "RLTiles".

\* Some of the tiles have been modified by our Team. You can find the original tileset at: http://rltiles.sf.net

\* You can find Dungeon Crawl Stone Soup modified tilesets at: http://code.google.com/p/crawl-tiles/downloads/list"

\* Tileset was downloaded from opengameart.org/content/dungeon-crawl-32x32-tiles

\*/

game = [];

game.menu = [];

game.auth = [];

game.constants = [];

game.func = [];

game.match = [];

game.var = [];

game.match.var = [];

game.camera = {};

game.var.init = function() {

game.var.xSize = 900;

game.var.ySize = 600;

game.var.playerCharacter = {};

game.var.scale = 50;

game.var.tiles = [];

game.var.characters = [];

game.var.minCoins = {};

game.var.winText = [];

game.var.renderer = {};

game.var.stage = {};

game.var.graphics = {};

game.var.playerTitles = [];

game.var.isRunning = false;

game.var.delta = 0;

game.var.timeStep = 1000 / 20;

game.var.lastFrameTimestamp = 0;

game.var.opacityVis = 1.0;

game.var.opacityInvis = 0.3;

};

game.var.init();

game.var.colours = [];

game.var.colours.background = 0x000000;

game.var.colours.wall = 0x8c8c8c;

game.var.colours.floor = 0xbf8040;

game.var.colours.gold = 0xffff66;

game.var.colours.player = 0xff2222;

game.var.colours.exit = 0x2222ff;

game.var.colours.shaded = [];

game.var.colours.shaded.wall = 0x565656;

game.var.colours.shaded.floor = 0x8c5010;

game.var.colours.shaded.gold = 0xcccc33;

game.var.colours.shaded.player = 0xcc0000;

game.var.colours.shaded.exit = 0x0000cc;

game.match.var.isLobbying = false;

game.match.var.isWaitingTostart = false;

game.match.var.delta = 0;

game.match.var.timeStep = 1000 / 5;

game.match.var.lastFrameTimestamp = 0;

game.constants.api = "http://localhost:8080/";

game.constants.loginFailed = "Oops, that didn't work. Make sure your username/password are correct.";

game.constants.registrationFailed = "Oops, that didn't work. Fields cannot be empty or more than 255 characters.";

/\*\*

\* Generic method to make a GET request. Uses xhr fields to ensure cookies are sent across domain.

\* @param url {string}to send the request to

\* @param data {string}to send with the request

\* @param success function to execute on success

\* @param error function to execute on failure

\*/

game.func.get = function(url, data, success, error) {

$.ajax({

type: "GET",

url: url,

data: data,

success: success,

error: error,

xhrFields: {

withCredentials: true

}

});

};

/\*\*

\* Generic method to make a POST request. Uses xhr fields to ensure cookies are sent across domain.

\* @param url {string}to send the request to

\* @param data {string}to send with the request

\* @param success function to execute on success

\* @param error function to execute on failure

\*/

game.func.post = function(url, data, success, error) {

$.ajax({

type: "POST",

url: url,

data: data,

success: success,

error: error,

xhrFields: {

withCredentials: true

}

});

};

/\*\*

\* Constructs an url of an endpoint given the endpoint's controller and action names.

\* @param controller {string}the controller to contact

\* @param action {string}the action to contact

\* @returns {string} the constructed path

\*/

game.func.getApiPath = function(controller, action) {

return game.constants.api + controller + "/" + action;

};

game.func.error = function( data, reason, exception ) {

alert(' an error occurred :(');

console.log(reason);

console.log(exception);

};

game.auth.hook = function( data ) {

game.menu.clearValidation();

$('#guest-header').css('display', 'none');

$('#logged-in-header').css('display','block');

game.menu.openMatchLobby();

};

game.menu.loginFormValidation = function(message ) {

$('#login-validation').html(message);

};

game.menu.clearValidation = function() {

var validatorElements = $('.validation');

validatorElements.html('');

validatorElements.css('display', 'none');

};

game.auth.register = function() {

var endpoint = game.func.getApiPath("player","register");

var username = $("#username").val();

var password = $("#password").val();

game.func.post(endpoint,

{ "username" : username, "password" : password },

game.auth.hook,

function() { game.menu.loginFormValidation(game.constants.registrationFailed)});

};

game.auth.login = function() {

var endpoint = game.func.getApiPath("player","login");

var username = $("#username").val();

var password = $("#password").val();

game.func.post(endpoint,

{ "username" : username, "password" : password },

game.auth.hook,

function() { game.menu.loginFormValidation(game.constants.loginFailed)});

};

game.menu.openMatchLobby = function() {

game.menu.allSections.css('display','none');

game.menu.lobby.css('display','block');

game.match.var.isLobbying = true;

requestAnimationFrame(game.match.updateMatchList);

};

game.menu.openTutorial = function() {

game.match.var.isLobbying = false;

game.menu.allSections.css('display','none');

game.menu.tutorial.css('display','block');

};

game.menu.openScoreboard = function() {

game.match.var.isLobbying = false;

var endpoint = game.func.getApiPath("score","top");

game.func.get(endpoint, { }, game.menu.displayScoreboard, game.func.error);

};

/\*\*

\* Renders the scoreboard in the #score-table table.

\* @param scoreBoard the JSON object returned from a query to the score/top endpoint

\*/

game.menu.displayScoreboard = function( scoreBoard ) {

$('#score-table tbody td').remove();

$.each(scoreBoard.scores, function(i, score) {

if(score != null) {

$('#score-table tbody').append($(String.format("<tr><td>{0}</td><td>{1}</td></tr>", score.username, score.value)))

}

});

game.menu.allSections.css('display','none');

game.menu.scoreboard.css('display','block');

};

game.match.list = function() {

//todo what if the webservice thinks you're already in a match?

var endpoint = game.func.getApiPath("match","list");

game.func.get(endpoint, {}, game.menu.displayMatchList, game.menu.error);

};

game.menu.displayMatchList = function( data ) {

var matchList = $('#match-list');

matchList.empty();

$.each( data, function( i, match ) {

var entry = $( String.format("<p><a data-id='{2}' class='join-link'>Join</a> {0}'s game with {1} players</p>", match.playerNames[0], match.playerNames.length, match.id) );

matchList.append(entry);

});

$(".join-link").click(game.match.join);

};

game.match.join = function( data ) {

var id = $(data.currentTarget).data("id");

game.match.var.isLobbying = false;

game.match.var.isWaitingTostart = true;

var endpoint = game.func.getApiPath("match","join");

game.func.post(endpoint, { "matchId" : id }, game.menu.displayMatchMenu, game.menu.error);

requestAnimationFrame(game.match.updateStatus);

};

/\*\*

\* Starts a new Match by sending a request to the web service

\*/

game.match.new = function() {

var endpoint = game.func.getApiPath("match","new");

game.match.var.isLobbying = false;

game.match.var.isWaitingTostart = true;

var level = game.menu.levelChooser.val();

game.func.post(endpoint, { "level" : level }, game.menu.displayMatchMenu);

requestAnimationFrame(game.match.updateStatus);

};

/\*\*

\* Starts the player's current Match by sending a request to the web service

\*/

game.match.start = function() {

game.match.var.isWaitingTostart = false;

var endpoint = game.func.getApiPath("match","start");

requestAnimationFrame(function() {game.func.post(endpoint, null, game.menu.initGameScreen, game.func.error) });

};

/\*\*

\* Initialises the game screen. Resets game variables and creates a new HTML5 canvas. Begins the game loop.

\*/

game.menu.initGameScreen = function() {

game.var.init();

game.menu.gameContainer.empty();

game.var.renderer = PIXI.autoDetectRenderer(game.var.xSize, game.var.ySize);

game.var.renderer.backgroundColor = game.var.colours.background;

game.var.renderer.transparent = true;

game.menu.gameContainer.append(game.var.renderer.view);

game.var.stage = new PIXI.Container();

// game.var.graphics = new PIXI.Graphics();

// game.var.stage.addChild(game.var.graphics);

game.menu.match.css('display', 'none');

game.menu.game.css('display', 'block');

game.var.isRunning = true;

requestAnimationFrame(game.updateGame);

};

game.initTextWinCondition = function( character ) {

var style = {

fontFamily : 'Arial',

fontSize : '18px',

fontStyle : 'italic',

fontWeight : 'bold',

fill : '#F7EDCA',

stroke : '#4a1850',

strokeThickness : 5,

dropShadow : true,

dropShadowColor : '#000000',

dropShadowAngle : Math.PI / 6,

dropShadowDistance : 4

};

game.var.winText[character.playerName] = new PIXI.Text('Collect '+ game.var.minCoins +' coins minimum to win! You collected ' + game.var.playerCharacter.noCoins + ' coins!', style);

}

game.initPlayerTitle = function( character ) {

var style = {

fontFamily : 'Arial',

fontSize : '18px',

fontStyle : 'italic',

fontWeight : 'bold',

fill : '#F7EDCA',

stroke : '#4a1850',

strokeThickness : 5,

dropShadow : true,

dropShadowColor : '#000000',

dropShadowAngle : Math.PI / 6,

dropShadowDistance : 4

};

game.var.playerTitles[character.playerName] = new PIXI.Text(character.playerName, style);

};

/\*\*

\* Renders the current game state to the canvas.

\*/

game.render = function() {

//game.var.graphics.clear();

game.var.stage = new PIXI.Container();

for(x = 0; x < game.var.tiles.length; x++) {

var row = game.var.tiles[x];

if(typeof row !== 'undefined') {

for (y = 0; y < game.var.tiles[x].length; y++) {

var tile = game.var.tiles[x][y];

if(typeof tile !== 'undefined') {

var tilePositionX = (x \* game.var.scale) - game.camera.x;

var tilePositionY = (y \* game.var.scale) - game.camera.y;

if (tile.type == 0) {

var wall = PIXI.Sprite.fromImage('assets/wall.png');

wall.x = tilePositionX;

wall.y = tilePositionY;

wall.alpha = tile.visible ? game.var.opacityVis : game.var.opacityInvis;

game.var.stage.addChild(wall);

}

else if (tile.type == 1) {

var floor = PIXI.Sprite.fromImage('assets/floor.png');

floor.x = tilePositionX;

floor.y = tilePositionY;

floor.alpha = tile.visible ? game.var.opacityVis : game.var.opacityInvis;

game.var.stage.addChild(floor);

}

else if (tile.type == 2) {

var coin = PIXI.Sprite.fromImage('assets/coin.png');

coin.x = tilePositionX;

coin.y = tilePositionY;

coin.alpha = tile.visible ? game.var.opacityVis : game.var.opacityInvis;

game.var.stage.addChild(coin);

}

else if(tile.type == 3) {

var exit = PIXI.Sprite.fromImage('assets/exit.png');

exit.x = tilePositionX;

exit.y = tilePositionY;

exit.alpha = tile.visible ? game.var.opacityVis : game.var.opacityInvis;

game.var.stage.addChild(exit);

}

if (tile.visible && tile.character !== null) {

var positionX = tilePositionX + game.var.scale / 2;

var positionY = tilePositionY + game.var.scale / 2;

var char = PIXI.Sprite.fromImage('assets/char.png');

char.x = positionX - game.var.scale / 2;

char.y = positionY - game.var.scale / 2;

game.var.stage.addChild(char);

var character = game.var.tiles[x][y].character;

var playerTitle = game.var.playerTitles[character.playerName];

if(typeof playerTitle === 'undefined') {

game.initPlayerTitle(character);

}

else {

playerTitle.x = positionX - game.var.scale;

playerTitle.y = positionY - game.var.scale;

}

game.var.stage.addChild(game.var.playerTitles[character.playerName]);

game.initTextWinCondition(game.var.tiles[x][y].character);

game.var.stage.addChild(game.var.winText[character.playerName]);

}

}

}

}

}

game.var.isRunning = true;

game.var.renderer.render(game.var.stage);

};

game.setAllTilesNotVisible = function() {

$.each(game.var.tiles, function(x, row) {

if(typeof row != 'undefined') {

$.each(row, function(y, tile) {

if(typeof tile != 'undefined')

tile.visible = false;

});

}

});

};

/\*\*

\* Updates the current game status based on the result from a status request.

\* Will end the gam eif the status response indicates that the game is over.

\* @param status

\*/

game.updateStatus = function( status ) {

game.var.characters = status.characters;

game.var.playerCharacter = status.playerCharacter;

game.var.minCoins = status.minNumOfCoins;

game.camera.x = (game.var.playerCharacter.position.x \* game.var.scale) - (game.var.xSize / 2);

game.camera.y = (game.var.playerCharacter.position.y \* game.var.scale) - (game.var.ySize / 2);

game.setAllTilesNotVisible();

$.each( status.tiles, function ( i, tile ) {

tile.character = null;

game.var.addTile(tile);

});

$.each( status.characters, function( i, character) {

game.var.tiles[character.position.x][character.position.y].character = character;

});

if(status.hasEnded) {

game.var.isRunning = false;

game.end();

}

else {

game.render();

}

};

/\*\*

\* Adds a tile if it doesn't already exist in memory, or updates the tile if it does.

\* Will expand the size of game.var.tiles if it isn't large enough.

\* @param tile

\*/

game.var.addTile = function( tile ) {

var pos = tile.position;

if(typeof game.var.tiles[pos.x] === 'undefined') {

game.var.tiles[pos.x] = [];

}

tile.visible = true;

game.var.tiles[pos.x][pos.y] = tile;

};

game.fetchStatus = function() {

var endpoint = game.func.getApiPath("game","status");

game.func.get(endpoint, {}, game.updateStatus, game.func.error);

};

/\*\*

\* Makes a game status request if game.var.timestep has passed since the last request.

\* Loops while game.var.isRunning

\* @param timestamp

\*/

game.updateGame = function( timestamp ) {

if(game.var.lastFrameTimestamp == 0) {

game.var.lastFrameTimestamp = timestamp + game.var.timeStep;

}

game.var.delta += timestamp - game.var.lastFrameTimestamp;

game.var.lastFrameTimestamp = timestamp;

if(game.var.delta > game.var.timeStep) {

game.fetchStatus();

game.var.delta -= game.var.timeStep;

}

if(game.var.isRunning) {

requestAnimationFrame(game.updateGame);

}

};

/\*\*

\* Makes a match list request if game.match.var.timeStep has passed since the last request

\* Loops while game.match.var.isLobbying

\* @param timestamp

\*/

game.match.updateMatchList = function( timestamp ) {

if(game.match.var.lastFrameTimestamp == 0) {

game.match.var.lastFrameTimestamp = timestamp + game.match.var.timeStep;

}

game.match.var.delta += timestamp - game.match.var.lastFrameTimestamp;

game.match.var.lastFrameTimestamp = timestamp;

if(game.match.var.delta >= game.match.var.timeStep) {

game.match.list();

game.match.var.delta -= game.match.var.timeStep;

}

if(game.match.var.isLobbying) {

requestAnimationFrame(game.match.updateMatchList);

}

};

/\*\*

\* Makes a Match Status request if game.match.var.timeStep has passed since the last request.

\* Loops while game.match.var.isWaitingToStart

\* @param timestamp

\*/

game.match.updateStatus = function( timestamp ) {

if(game.match.var.lastFrameTimestamp == 0) {

game.match.var.lastFrameTimestamp = timestamp + game.match.var.timeStep;

}

game.match.var.delta += timestamp - game.match.var.lastFrameTimestamp;

game.match.var.lastFrameTimestamp = timestamp;

if(game.match.var.delta >= game.match.var.timeStep) {

game.match.fetchStatus();

game.match.var.delta -= game.match.var.timeStep;

}

if(game.match.var.isWaitingTostart) {

requestAnimationFrame(game.match.updateStatus);

}

};

game.match.fetchStatus = function() {

var endpoint = game.func.getApiPath("match","status");

game.func.get(endpoint, {}, game.menu.displayMatchMenu, game.func.error);

};

/\*\*

\* Generates the Match Status details on the Match screen.

\* @param data Match Status as a JSON object

\*/

game.menu.displayMatchMenu = function( data ) {

game.menu.lobby.css('display','none');

game.menu.match.css('display','block');

var matchDeatils = $("#match-details");

matchDeatils.empty();

matchDeatils.append($("<h2>Waiting to start.</h2>"));

matchDeatils.append($(String.format("<p>To add a bot use the following ID: {0}</p>", data.id)));

matchDeatils.append($("<h3>Players:</h3>"));

$.each( data.playerNames, function( i, name ) {

var entry = $( String.format("<p>{0}</p>", name) );

matchDeatils.append(entry);

});

if(data.state == 'Ingame') {

game.match.var.isWaitingTostart = false;

game.menu.initGameScreen();

}

};

game.match.leave = function() {

game.var.isRunning = false;

var endpoint = game.func.getApiPath("match","leave");

requestAnimationFrame(function() {game.func.post(endpoint, { }, game.menu.openMatchLobby, game.func.error)});

};

game.menu.move = function( key ) {

var endpoint = game.func.getApiPath("game","move");

game.var.status = game.func.post(endpoint, {"key" : key}, game.updateStatus, game.func.error);

};

/\*\*

\* Builds the end-game screen and switches to it

\* @param result a MatchResultModel object

\*/

game.menu.showEndGameScreen = function( result ) {

if(result.winner == game.var.playerCharacter.playerName) {

$('#end-game-title').html("YOU WIN!")

}

else {

$('#end-game-title').html("YOU LOOSE!")

}

$('#end-game-detail').html(String.format("{0} wins with {1} coins! Your score is {2} ", result.winner, result.winnerCoins, result.score));

game.menu.gameContainer.empty();

game.menu.game.css('display','none');

game.menu.end.css('display','block');

};

game.end = function() {

game.var.isRunning = false;

var endpoint = game.func.getApiPath("match","result");

game.func.get(endpoint, { }, game.menu.showEndGameScreen, game.func.error);

};

$( document ).ready(function() {

game.menu.login = $('#login');

game.menu.lobby = $('#lobby');

game.menu.levelChooser = $('#level');

game.menu.match = $('#match');

game.menu.tutorial = $('#tutorial');

game.menu.end = $('#end-game');

game.menu.scoreboard = $('#score');

game.menu.game = $('#game');

game.menu.gameContainer = $('#game-container');

game.menu.allSections = $('section');

game.menu.login.css('display', 'block');

$('#register-btn').click(game.auth.register);

$('#login-btn').click(game.auth.login);

$('#new-match-btn').click(game.match.new);

$('#start-match-btn').click(game.match.start);

$('#match-leave-btn').click(game.match.leave);

$('#return-btn').click(game.match.leave);

$('#lobby-link').click(game.menu.openMatchLobby);

$('#tutorial-link').click(game.menu.openTutorial);

$('#score-link').click(game.menu.openScoreboard);

window.addEventListener('keydown', function(event) {

if (game.var.isRunning) {

switch (event.keyCode) {

case 65:

case 37: // Left

game.menu.move('A');

break;

case 87:

case 38: // Up

game.menu.move('W');

break;

case 68:

case 39: // Right

game.menu.move('D');

break;

case 83:

case 40: // Down

game.menu.move('S');

break;

}

}

}, false);

});

* 1. DungeonOfDooom-master\Sourcecode\project\src\Client
     1. index.html

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<title>Dungeon of Dooom</title>

<link href="https://fonts.googleapis.com/css?family=Ubuntu" rel="stylesheet">

<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">

<link href="assets/style.css" rel="stylesheet">

</head>

<body>

<ul id="logged-in-header">

<li><a id="lobby-link">Lobby</a></li>

<li><a id="tutorial-link">How to play</a></li>

<li><a id="score-link">Score Table</a></li>

<li style="float:right"><a class="active">Dungeon of Doom</a></li>

</ul>

<ul id="guest-header">

<li >Dungeon of Doom</li>

</ul>

<section id="login">

<div class="col-md-5 col-md-offset-3">

<div class="row">

<label for="username"><b>Username</b></label>

<input type="text" placeholder="Enter Username" id="username" name="username" required>

</div>

<div class="row">

<label for="password"><b>Password</b></label>

<input type="password" placeholder="Enter Password" id="password" name="password" required>

</div>

<div class="row">

<p id="login-validation" class="validation"></p>

</div>

<div class="row">

<button id="login-btn" class="btn btn-danger btn-lg">Login</button>

</div>

<div class="row">

<button id="register-btn" class="btn btn-danger btn-lg">Register</button>

</div>

</div>

</section>

<section id="lobby">

<h1>Matches</h1>

<p id="match-list"></p>

<div class="row">

<button id="new-match-btn" class="btn btn-danger btn-lg">New Match</button>

<label for="level">Level</label>

<input type="number" id="level" name="level" min="1" max="3" value="1">

</div>

</section>

<section id="match">

<h1>Match</h1>

<p id="match-details"></p>

<button id="start-match-btn" class="btn btn-danger btn-lg">Start</button>

</section>

<section id="game">

<div id="game-container"></div>

<div clas="row">

<button id="match-leave-btn" class="btn btn-danger btn-lg">Leave</button>

</div>

</section>

<section id="end-game">

<h1 id="end-game-title"></h1>

<p id="end-game-detail"></p>

<button id="return-btn" class="btn btn-danger btn-lg">Return</button>

</section>

<section id="tutorial">

<aside class="left">

<h1> Instructions </h1><br>

The dungeon of doom is an online multiplayer game, which starts with registration of player.

The game icludes the functionality to choose either single player or multi-player as well as an option to view top score achivied by player.

<br><br>

The objective of the game is to collect the specified amount of gold in the dungeon and get to the exit before other player.

</aside>

<div class="right">

<img src="assets/layout.jpeg"/>

</div>

</section>

<section id="score">

<h1 id="homeHeading">Score Table</h1>

<table id= "score-table">

<thead>

<tr>

  <th>Username</th>

  <th>Score</th>

</tr>

</thead>

<tbody>

</tbody>

</table>

</section>

<footer>

<p>Dungeon of Dooom coursework entry for University of Bath Software Engineering unit</p>

</footer>

<script type="text/javascript" src="scripts/lib/stringformat.js"></script>

<script type="text/javascript" src="scripts/lib/jquery.min.js"></script>

<script type="text/javascript" src="scripts/lib/pixi.js"></script>

<script type="text/javascript" src="scripts/main.js"></script>

</body>

</html>

* 1. DungeonOfDooom-master\Sourcecode\project\src\domain\com\dod\db\repositories
     1. DatabaseRepository.java

package com.dod.db.repositories;

import com.dod.db.DatabaseConnection;

import java.sql.Connection;

import java.sql.PreparedStatement;

import java.sql.SQLException;

/\*\*

\* <pre>

\* A base class of the Repository pattern

\* Introduces the generic getStatement() method to reuse that code across the different repositories

\* </pre>

\*/

public class DatabaseRepository<T> {

/\*\*

\* Make a SELECT query to fetch the unique object in question from the database

\* @param object an instance of the object in question with the unique field (but not necessarily others) filled out

\* @return An instance of the object

\* @throws SQLException if the statement fails or connection cannot be established

\*/

public T get(T object) throws SQLException { return null; }

/\*\*

\* Make an INSERT query to insert the object in question into the database

\* @param object the object in question

\* @return true if successful, false otherwise

\* @throws SQLException

\*/

public boolean insert(T object) throws SQLException { return false; }

/\*\*

\* Make a DELETE query to delete the object in question from the database

\* @param object the object in question with the unique field (but not necessarily others) filled out

\* @return true if successful, false otherwise

\* @throws SQLException when the statement fails

\*/

public boolean delete(T object) throws SQLException { return false; }

protected PreparedStatement ps;

/\*\*

\* Prepares a statement from a string using the database connection

\* @param text the text of the statement

\* @return a PreparedStatement instance

\* @throws SQLException when the statement fails

\*/

protected PreparedStatement getStatement(String text) throws SQLException

{

Connection con = DatabaseConnection.getConnection();

PreparedStatement ps = con.prepareStatement(text);

return ps;

}

}

* + 1. IPlayerRepository.java

package com.dod.db.repositories;

import com.dod.models.Player;

import java.sql.SQLException;

/\*\*

\* <pre>

\* Follows the Repository pattern.

\* Intended for selecting/inserting/deleting "Player" entries from the database.

\* </pre>

\*/

public interface IPlayerRepository {

/\*\*

\* Make a SELECT query to fetch the unique Player in question from the database

\* @param object an instance of the Player in question with the unique field (but not necessarily others) filled out

\* @return Player object fetched from the database

\* @throws SQLException if the statement fails or connection cannot be established

\*/

Player get(Player object) throws SQLException;

/\*\*

\* Make an INSERT query to insert the Player in question into the database

\* @param object the Player in question

\* @return true if successful, false otherwise

\* @throws SQLException when the statement fails

\*/

boolean delete(Player object) throws SQLException;

/\*\*

\* Make a DELETE query to delete the Player in question from the database

\* @param object the Player in question with the unique field (but not necessarily others) filled out

\* @return true if successful, false otherwise

\* @throws SQLException when the statement fails

\*/

boolean insert(Player object) throws SQLException;

}

* + 1. IScoreRepository.java

package com.dod.db.repositories;

import com.dod.models.Player;

import com.dod.models.Score;

import java.sql.SQLException;

/\*\*

\* <pre>

\* Follows the Repository pattern.

\* Intended for selecting/inserting/deleting "Score" entries from the database.

\* </pre>

\*/

public interface IScoreRepository {

/\*\*

\* Make a SELECT query to fetch the unique Score in question from the database

\* @param object an instance of the Score in question with the unique field (but not necessarily others) filled out

\* @return Score fetched from the database

\* @throws SQLException if the statement fails or connection cannot be established

\*/

Score get(Score object) throws SQLException;

/\*\*

\* Make an INSERT query to insert the Score in question into the database

\* @param object the Score in question

\* @return true if successful, false otherwise

\* @throws SQLException

\*/

boolean insert(Score object) throws SQLException;

/\*\*

\* Make a DELETE query to delete the Score in question from the database

\* @param object the Score in question with the unique field (but not necessarily others) filled out

\* @return true if successful, false otherwise

\* @throws SQLException

\*/

boolean delete(Score object) throws SQLException;

/\*\*

\* Get the 10 highest scores from database

\* @return Score[] array of 10 Score objects

\* @throws SQLException when the statement fails

\*/

Score[] getHighestScores() throws SQLException;

/\*\*

\* Get the 10 highest scores of the player

\* @param object Player object

\* @return Score[] array of 10 Score objects

\* @throws SQLException when the statement fails

\*/

Score[] getPlayerScores(Player object) throws SQLException;

}

* + 1. PlayerRepository.java

package com.dod.db.repositories;

import com.dod.models.Player;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.sql.SQLException;

/\*\*

\* <pre>

\* Implements IPlayerRepository.

\* Follows the Repository pattern.

\* Intended for selecting/inserting/deleting "Player" entries from the database.

\* </pre>

\*/

public class PlayerRepository extends DatabaseRepository<Player> implements IPlayerRepository {

private final String deleteQuery = "DELETE FROM player WHERE username = ?";

private final String getQuery = "SELECT username, password, salt FROM player WHERE username = ?";

private final String insertQuery = "INSERT INTO player (username, password, level, salt) VALUES (?, ?, 0, ?)";

/\*\*

\* Make a SELECT query to fetch the unique Player in question from the database

\* @param object an instance of the Player in question with the unique field (but not necessarily others) filled out

\* @return Player object fetched from the database

\* @throws SQLException if the statement fails or connection cannot be established

\*/

@Override

public Player get(Player object) throws SQLException {

PreparedStatement statement = getStatement(getQuery);

statement.setString(1, object.getUsername());

ResultSet rs = statement.executeQuery();

if (rs.next())

return new Player(rs.getString("username"), rs.getString("password"), rs.getBytes("salt"));

else

return null;

}

/\*\*

\* Make an INSERT query to insert the Player in question into the database

\* @param object the Player in question

\* @return true if successful, false otherwise

\* @throws SQLException when the statement fails

\*/

@Override

public boolean delete(Player object) throws SQLException {

PreparedStatement statement = getStatement(deleteQuery);

statement.setString(1, object.getUsername());

if (statement.executeUpdate() == 0) {

return false;

} else {

return true;

}

}

/\*\*

\* Make a DELETE query to delete the Player in question from the database

\* @param object the Player in question with the unique field (but not necessarily others) filled out

\* @return true if successful, false otherwise

\* @throws SQLException when the statement fails

\*/

@Override

public boolean insert(Player object) throws SQLException{

PreparedStatement statement = getStatement(insertQuery);

statement.setString(1, object.getUsername());

statement.setString(2, object.getHashedPassword());

statement.setBytes(3, object.getSalt());

try {

statement.executeUpdate();

}

catch (SQLException e) {

return false;

}

statement.close();

return true;

}

}

* + 1. ScoreRepository.java

package com.dod.db.repositories;

import com.dod.models.Player;

import com.dod.models.Score;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.sql.SQLException;

/\*\*

\* <pre>

\* Implements IPlayerRepository.

\* Follows the Repository pattern.

\* Intended for selecting/inserting/deleting "Score" entries from the database.

\* </pre>

\*/

public class ScoreRepository extends DatabaseRepository<Score> implements IScoreRepository {

private final String getPlayerQuery = "SELECT \* FROM score WHERE username='?' ORDER BY value DESC LIMIT 10";

private final String deleteQuery = "DELETE FROM score WHERE id = ?";

private final String getScoreQuery = "SELECT \* FROM score WHERE id = ?";

private final String getQuery = "SELECT \* FROM score ORDER BY value DESC LIMIT 10";

private final String insertQuery = "INSERT INTO score (username, value) VALUES (?, ?)";

/\*\*

\* Inserts a score value to score table of database based on player's

\* username.

\* @param scoreObject current score that we need to score

\* @return true if insertion was successful else false

\* @throws SQLException when the statement fails

\*/

@Override

public boolean insert(Score scoreObject) throws SQLException {

PreparedStatement statement = getStatement(insertQuery);

statement.setString(1, scoreObject.getUsername());

statement.setInt(2, scoreObject.getValue());

try {

statement.executeUpdate();

} catch (SQLException e) {

return false;

}

statement.close();

return true;

}

/\*\*

\* Delete a score row from database

\* !! We should not use that.

\* @param object score object to delete

\* @return true if the deletion was successful else false

\* @throws SQLException when the statement fails

\*/

@Override

public boolean delete(Score object) throws SQLException {

PreparedStatement statement = getStatement(deleteQuery);

statement.setInt(1, object.getId());

if (statement.executeUpdate() == 0) {

return false;

} else {

return true;

}

}

/\*\*

\* Get the 10 highest scores from database

\* @return Score[] array of 10 Score objects

\* @throws SQLException when the statement fails

\*/

public Score[] getHighestScores() throws SQLException {

PreparedStatement statement = getStatement(getQuery);

//statement.setString(1, object.getUsername());

ResultSet rs = statement.executeQuery();

Score[] result = new Score[10];

int i = 0;

while (rs.next()) {

Score temp = new Score(rs.getInt("id"), rs.getString("username"), rs.getInt("value"));

result[i] = temp;

i++;

}

return result;

}

/\*\*

\* Get the 10 highest scores of the player

\* @param object Player object

\* @return Score[] array of 10 Score objects

\* @throws SQLException when the statement fails

\*/

public Score[] getPlayerScores(Player object) throws SQLException {

PreparedStatement statement = getStatement(getPlayerQuery);

statement.setString(1, object.getUsername());

ResultSet rs = statement.executeQuery();

Score[] result = new Score[10];

int i = 0;

while (rs.next()) {

Score temp = new Score(rs.getInt("id"), rs.getString("username"), rs.getInt("value"));

result[i] = temp;

i++;

}

return result;

}

/\*\*

\* returns a Score based on id from the database

\* @param Score to be fetched must have unique identifier populated

\* @return Score object

\* @throws SQLException when the statement fails

\*/

@Override

public Score get(Score object) throws SQLException {

PreparedStatement statement = getStatement(getScoreQuery);

statement.setInt(1, object.getId());

ResultSet rs = statement.executeQuery();

if (rs.next()) {

return new Score(rs.getInt(1), rs.getString(2), rs.getInt(3));

} else {

return null;

}

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\domain\com\dod\db
     1. DatabaseConnection.java

package com.dod.db;

import com.mysql.jdbc.jdbc2.optional.MysqlDataSource;

import java.sql.Connection;

import java.sql.SQLException;

/\*\*

\* Stores a connection to the database using the singleton pattern

\*/

public class DatabaseConnection {

private static Connection connection;

/\*\*

\* A static connection to ensure that all sessions use the same MySql connection

\* Could be done more intelligently with connection pooling

\* @return Connection instance

\* @throws SQLException when the database connection cannot be established

\*/

public static Connection getConnection() throws SQLException {

if(connection != null) {

return connection;

}

else {

MysqlDataSource dataSource = new MysqlDataSource();

dataSource.setUser("dungeonofdoom");

dataSource.setPassword("Delicate.Sunshine.Twist.Myth32");

dataSource.setServerName("localhost");

dataSource.setDatabaseName("dungeonofdoom");

connection = dataSource.getConnection();

return connection;

}

}

/\*\*

\* Closes the connection

\*/

public static void Close() {

try {

connection.close();

}

catch(SQLException e) {

System.console().printf(e.getMessage());

}

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\domain\com\dod\game
     1. IMatchList.java

package com.dod.game;

import com.dod.models.Match;

import java.util.List;

import java.util.UUID;

/\*\*

\* Stores ongoing matches in memory and provides functions to access these matches.

\*/

public interface IMatchList {

/\*\*

\* Returns a singleton instance of MatchList, creating it if it hasn't been initialised yet.

\* @return MatchList

\*/

void addMatch(Match match);

/\*\*

\* Gets all matches that are in the Lobbying state

\* @return List of Match objects

\*/

List<Match> getLobbyingMatches();

/\*\*

\* Gets a Match by a particular ID. Returns null if the match is missing.

\* @param id the UUID that corresponds to the match to be fetched

\* @return Match

\*/

Match getMatch(UUID id);

/\*\*

\* Gets a match by player name. Each player should only have one match. Returns null if player has no match.

\* @param username the username of the player

\* @return Match

\*/

Match getMatchForPlayer(String username);

/\*\*

\* Returns true if the player has a match in the list

\* @param username the player's username

\* @return true if the player has a match in the list otherwise false

\*/

boolean playerHasMatch(String username);

/\*\*

\* Removes the match fitting the specified ID from the list

\* @param id the UUID that corresponds to the particular Match to be removed

\*/

void removeMatch(UUID id);

}

* + 1. MatchList.java

package com.dod.game;

import com.dod.models.Match;

import com.dod.models.MatchState;

import java.util.ArrayList;

import java.util.Date;

import java.util.List;

import java.util.UUID;

/\*\*

\* <pre>

\* Implementation of IMatchList

\* Stores ongoing matches in memory and provides functions to access these matches.

\* Uses a singleton so that we can fetch the same object between requests

\* (And because this is much easier to test than making all methods static)

\* </pre>

\*/

public class MatchList implements IMatchList {

private static IMatchList instance;

/\*\*

\* Returns a singleton instance of MatchList, creating it if it hasn't been initialised yet.

\* @return MatchList

\*/

public static IMatchList instance() {

if(instance == null) {

instance = new MatchList();

}

return instance;

}

private List<Match> ongoingMatches = new ArrayList();

/\*\*

\* Adds a match to the list

\* @param match the match to add

\*/

public void addMatch(Match match) {

ongoingMatches.add(match);

}

/\*\*

\* Gets all matches that are in the Lobbying state

\* @return List of Match objects

\*/

public List<Match> getLobbyingMatches() {

List<Match> result = new ArrayList();

for(Match match : ongoingMatches) {

if(match.getState() == MatchState.Lobbying) {

result.add(match);

}

}

return result;

}

/\*\*

\* Gets a Match by a particular ID. Returns null if the match is missing.

\* @param id the UUID that corresponds to the match to be fetched

\* @return Match

\*/

public Match getMatch(UUID id) {

Match result = null;

for(Match match : ongoingMatches) {

if(match.getId().equals(id)) {

result = match;

break;

}

}

return result;

}

/\*\*

\* Gets a match by player name. Each player should only have one match. Returns null if player has no match.

\* @param username the username of the player

\* @return Match

\*/

public Match getMatchForPlayer(String username) {

Match result = null;

for(Match match: ongoingMatches) {

if(match.hasCharacter(username)) {

result = match;

break;

}

}

return result;

}

/\*\*

\* Returns true if the player has a match in the list

\* @param username the player's username

\* @return true if the player has a match in the list otherwise false

\*/

public boolean playerHasMatch(String username) {

return getMatchForPlayer(username) != null;

}

/\*\*

\* Removes the match fitting the specified ID from the list

\* @param id the UUID that corresponds to the particular Match to be removed

\*/

public void removeMatch(UUID id) {

for(Match match: ongoingMatches) {

if(match.getId().equals(id)) {

ongoingMatches.remove(match);

break;

}

}

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\domain\com\dod\models
     1. Character.java

package com.dod.models;

import java.util.ArrayList;

import java.util.List;

/\*\*

\* <pre>

\* A Character is a fictional entity that moves around the game world.

\* A Character belongs to a Player.

\* A Character has a position and can interact with coins and the exit.

\* </pre>

\*/

public class Character {

private Point position;

private Player player;

private int collectedCoins;

private List<Point> collectedCoinsPos;

public Character(Point position, Player player) {

this.position = position;

this.player = player;

this.collectedCoinsPos = new ArrayList<>();

collectedCoins = 0;

}

/\*\*

\* The player's position in the game world

\* @return Point

\*/

public Point getPosition() {

return position;

}

/\*\*

\* The player's position in the game world

\* @param position Point

\*/

public void setPosition(Point position) {

this.position = position;

}

/\*\*

\* The Player that this Character belongs to

\* @return Player

\*/

public Player getPlayer() {

return player;

}

/\*\*

\* The Player that this Character belongs to

\* @param player Player

\*/

public void setPlayer(Player player) {

this.player = player;

}

public int getCollectedCoins() {

return collectedCoins;

}

public void setCollectedCoins(int collectedCoins) {

this.collectedCoins = collectedCoins;

}

/\*\*

\* Keeps track of which coins on the map this Character has collected.

\* This enables us to leave the coin on the Map once it has been picked up, thereby allowing other players

\* to pick it up, and yet not send the same coin to the same player's client again.

\* @return a list of Point objects that represent the points on the map where the Character has collected a coin

\*/

public List<Point> getCollectedCoinsPos() {

return collectedCoinsPos;

}

/\*\*

\* Keeps track of which coins on the map this Character has collected.

\* This enables us to leave the coin on the Map once it has been picked up, thereby allowing other players

\* to pick it up, and yet not send the same coin to the same player's client again.

\* @param newPoint the Point to add to the collection

\*/

public void addCollectedCoinsPos(Point newPoint) {

this.collectedCoinsPos.add(newPoint);

}

}

* + 1. Map.java

package com.dod.models;

import java.io.Serializable;

import java.util.Random;

/\*\*

\* <pre>

A Map stores a 2-dimensional grid of Tiles.

A Map has a name, width, height and numbe rof coins total and required to win.

\* </pre>

\*/

public class Map {

protected int width;

protected int height;

protected String name;

protected int totalNumberOfCoins;

protected int numberOfCoinsNeededToWin;

protected Tile[][] tiles;

public Map(int width, int height) {

tiles = new Tile[width][height];

}

public Map(String name, int totalNumberOfCoins, int numberOfCoinsNeededToWin, int width, int height, Point mapSize) {

this.name = name;

this.totalNumberOfCoins = totalNumberOfCoins;

this.numberOfCoinsNeededToWin = numberOfCoinsNeededToWin;

this.width = width;

this.height = height;

tiles = new Tile[mapSize.x][mapSize.y];

}

public void setTile(Point position, Tile tile) {

tiles[position.x][position.y] = tile;

}

public String getName(){

return name;

}

public void setName(String name){

this.name = name;

}

/\*\*

\* The total number of coins that should be created in the map.

\* @return int

\*/

public int getCoinNo(){

return totalNumberOfCoins;

}

/\*\*

\* The total number of coins that should be created in the map.

\* @param coin\_no int

\*/

public void setCoinNo(int coin\_no){

this.totalNumberOfCoins = coin\_no;

}

/\*\*

\* The total number of coins needed to win on this map

\* @return int

\*/

public int getCoinWin(){

return numberOfCoinsNeededToWin;

}

/\*\*

\* The total number of coins needed to win on this map

\* @param coin\_win int

\*/

public void setCoinWin(int coin\_win){

this.numberOfCoinsNeededToWin = coin\_win;

}

public Tile getTile(Point point) {

return tiles[point.x][point.y];

}

public int getWidth() {

return width;

}

public int getHeight() {

return height;

}

/\*\*

\* Gets a random position of a tile that is not a wall, coin or exit.

\* @return Point

\*/

public Point getRandomFreeTilePoint() {

Random random = new Random();

Point point = null;

while(point == null) {

int x = random.nextInt(width-1);

int y = random.nextInt(height-1);

if(tiles[x][y].getType() == TileType.Empty.getValue()) {

point = new Point(x,y);

}

}

return point;

}

}

* + 1. Match.java

package com.dod.models;

import java.util.ArrayList;

import java.util.Date;

import java.util.List;

import java.util.UUID;

/\*\*

\* Represents a match

\*/

public class Match {

private UUID id;

private Map map;

private List<Character> characters;

private MatchState state;

private long timer;

private int score;

public Match(Map map) {

this.id = UUID.randomUUID();

this.map = map;

this.characters = new ArrayList();

state = MatchState.Lobbying;

timer = 0;

score = 0;

}

public Map getMap() {

return map;

}

public void addCharacter(Player player, Point position) {

characters.add(new Character(position, player));

}

public void removeCharacter(Player player) {

for(Character character : characters) {

if(character.getPlayer().getUsername().equals(player.getUsername())) {

characters.remove(character);

break;

}

}

}

public Character getCharacter(String username) {

Character result = null;

for(Character character : characters) {

if(character.getPlayer().getUsername().equals(username)) {

result = character;

break;

}

}

return result;

}

public String[] getPlayerNames() {

String[] names = new String[characters.size()];

for(int i = 0; i < characters.size(); i++) {

names[i] = characters.get(i).getPlayer().getUsername();

}

return names;

}

public boolean hasCharacter(String userName) {

return getCharacter(userName) != null;

}

public UUID getId() {

return id;

}

public void startGame() {

state = MatchState.Ingame;

}

public MatchState getState() {

return state;

}

public void setState(MatchState state) {

this.state = state;

}

public List<Character> getCharactersOnTile(Point point) {

List<Character> charactersOnTile = new ArrayList();

for(Character character :characters) {

if(character.getPosition().equals(point)) {

charactersOnTile.add(character);

}

}

return charactersOnTile;

}

public Character getCharacterWithHighestCoins() {

Character character = null;

for(Character c : characters) {

if(character == null || c.getCollectedCoins() > character.getCollectedCoins()) {

character = c;

}

}

return character;

}

public long getTimer() {

return timer;

}

public void setTimer(long timer) {

this.timer = timer;

}

public int getScore() { return this.score; }

public void setScore(int score) { this.score = score; }

}

* + 1. MatchState.java

package com.dod.models;

/\*\*

\* The state of a Match.

\*/

public enum MatchState {

Lobbying,

Ingame,

Over

}

* + 1. Player.java

package com.dod.models;

/\*\*

\* <pre>

\* A Player represents the user that is in control of the game client

\* A Player can sign in with a username or password

\* A Player has a level and a password salt

\* A Player's password is always hashed

\* </pre>

\*/

public class Player {

private String username;

private String hashedPassword;

private int level;

private byte[] salt;

public Player(String name) {

this.username = name;

}

public Player(String name, String hashedPassword, byte[] salt) {

this.username = name;

this.hashedPassword = hashedPassword;

this.salt = salt;

}

public String getUsername() {

return username;

}

public void setUsername(String value) {

username = value;

}

public String getHashedPassword() {

return hashedPassword;

}

public void setHashedPassword(String hashedPassword) {

this.hashedPassword = hashedPassword;

}

public int getLevel() {

return level;

}

public void setLevel(int level) {

this.level = level;

}

public byte[] getSalt() {

return salt;

}

public void setSalt(byte[] salt) {

this.salt = salt;

}

}

* + 1. Point.java

package com.dod.models;

import javax.xml.bind.annotation.XmlRootElement;

/\*\*

\* Bean class for storing a point (or vertex) in the map.

\*/

@XmlRootElement

public class Point {

public int x;

public int y;

public Point() {}

public Point(int x, int y) {

this.x = x;

this.y = y;

}

@Override

public boolean equals(Object obj) {

boolean result = false;

if (obj instanceof Point) {

Point point = (Point) obj;

if (point.x == x && point.y == y) {

result = true;

}

}

return result;

}

}

* + 1. Score.java

package com.dod.models;

import javax.xml.bind.annotation.XmlRootElement;

/\*\*

\* <pre>

\* A Score stores the points a Player achieved when they completed a Match.

\* A Score as an ID in order to store the Score as a unique databaes record

\* A Score also has a value and the username of the player that the score is related to.

\* </pre>

\*/

@XmlRootElement

public class Score {

private int id;

private String username;

private int value;

public Score(int id, String username, int value) {

this.id = id;

this.username = username;

this.value = value;

}

public Score(String username, int value) {

this.id = -1;

this.username = username;

this.value = value;

}

public int getId() {

return id;

}

public void setId(int id) {

this.id = id;

}

public int getValue() {

return value;

}

public void setValue(int value) {

this.value = value;

}

public String getUsername() {

return username;

}

public void setUsername(String username) {

this.username = username;

}

}

* + 1. Tile.java

package com.dod.models;

import java.io.Serializable;

/\*\*

\* <pre>

\* A Tile represents single tile on the grid that is the Map

\* A Tile has a Type that indicates whether it is eg a wall, floor, coin or exit tile.

\* A Tile may or may not be visible

\* </pre>

\*/

public class Tile {

protected int type;

protected boolean visibility;

public Tile(int type, boolean visibility){

this.setType(type);

this.setVisibility(visibility);

}

public Tile(int type) {

this.type = type;

}

public int getType() {

return type;

}

public void setType(int type) {

this.type = type;

}

public boolean isVisible() {

return visibility;

}

public void setVisibility(boolean visibility) {

this.visibility = visibility;

}

public String toString(){

return "Type: "+this.type+"\nVisibility: "+this.visibility;

}

}

* + 2. TileType.java

package com.dod.models;

/\*\*

\* The type of a tile, i.e is this tile a wall, floor or something else.

\*/

public enum TileType {

Wall(0),

Empty(1),

Coin(2),

Exit(3);

private final int value;

TileType(int value) {

this.value = value;

}

public int getValue() {

return value;

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\service\src\main\java\com\dod\service\constant
     1. Assets.java

package com.dod.service.constant;

/\*\*

\* A set of static constant strings that define the paths to our assets.

\* Must always start with a slash.

\*/

public class Assets {

public static final String MapLevelOne = "/maps/level1.json";

public static final String MapLevelFormat = "/maps/level%s.json";

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\service\src\main\java\com\dod\service\controller
     1. GameController.java

package com.dod.service.controller;

import com.dod.game.MatchList;

import com.dod.models.Map;

import com.dod.models.Player;

import com.dod.service.model.GameStateModel;

import com.dod.service.service.MovementService;

import com.dod.service.service.StateService;

import com.dod.service.service.VisibilityService;

import org.glassfish.grizzly.http.server.Request;

import javax.validation.constraints.NotNull;

import javax.ws.rs.\*;

import javax.ws.rs.core.Context;

import javax.ws.rs.core.MediaType;

import javax.ws.rs.core.Response;

import java.sql.SQLException;

/\*\*

\* A controller to manage in-game game-related functionality ie getting the current state of the world or moving.

\*/

@Path("game")

public class GameController {

@Context

private Request request;

StateService stateService;

MovementService movementService;

public GameController() {

stateService = new StateService(new VisibilityService(), MatchList.instance());

movementService = new MovementService();

}

/\*\*

\* Responds with the current gamestate from the Player's Character's perspective, i.e. only returning visible tiles

\* If Player has no current ongoing Match returns 500 error.

\* @return Response 200 OK with GameStateModel as a JSON object

\*/

@GET

@Produces(MediaType.APPLICATION\_JSON)

@Path("status")

public Response status() {

String username = (String)request.getSession().getAttribute("player");

GameStateModel state = stateService.GetState(new Player(username));

return Response

.ok()

.entity(state)

.build();

}

/\*\*

\* An endpoint to request the Player's Character move once in a particular direction.

\* Responds with game status after move.

\* If Player has no current ongoing Match returns 500 error.

\* @param direction a char from {W,S,A,D} pertaining to a particular direction in the WASD layout, must not be null

\* @return Response 200 OK with GameStateModel as a JSON object

\*/

@POST

@Produces(MediaType.APPLICATION\_JSON)

@Path("move")

public Response move(@NotNull @FormParam("key") String direction) {

String username = (String)request.getSession().getAttribute("player");

try {

movementService.Move(direction, new Player(username));

}

catch(SQLException e) {

e.printStackTrace();

return Response.serverError().build();

}

GameStateModel state = stateService.GetState(new Player(username));

return Response

.ok()

.entity(state)

.build();

}

}

* + 1. MatchController.java

package com.dod.service.controller;

import com.dod.db.repositories.PlayerRepository;

import com.dod.game.MatchList;

import com.dod.models.Match;

import com.dod.models.Player;

import com.dod.service.model.MatchStatus;

import com.dod.service.service.IOService;

import com.dod.service.service.MatchService;

import com.dod.service.service.ParseService;

import org.glassfish.grizzly.http.server.Request;

import javax.validation.constraints.NotNull;

import javax.ws.rs.\*;

import javax.ws.rs.core.Context;

import javax.ws.rs.core.MediaType;

import javax.ws.rs.core.Response;

import java.sql.SQLException;

import java.util.UUID;

/\*\*

\* A controller to manage Matches- joining, listing, starting a new one etc.

\*/

@Path("match")

public class MatchController {

@Context

private Request request;

private MatchService matchService;

public MatchController() {

this.matchService = new MatchService(

new IOService(),

new ParseService(),

new PlayerRepository(),

MatchList.instance());

}

/\*\*

\* Responds with the status of the player's current Match.

\* If Player has no current Match returns a 500 error.

\* @return Response 200 OK with MatchStatus encoded in JSON

\*/

@GET

@Produces(MediaType.APPLICATION\_JSON)

@Path("status")

public Response status() {

String username = (String)request.getSession().getAttribute("player");

return Response

.ok()

.entity(matchService.getStatus(new Player(username)))

.build();

}

/\*\*

\* Starts a new Match in a particular level and responds with that Match's status

\* @param level int the level to load for this Match, must not be null

\* @return Response 200 OK with MatchStatus encoded in JSON or null if a Match cannot be crated

\*/

@POST

@Produces(MediaType.APPLICATION\_JSON)

@Path("new")

public Response newMatch(

@NotNull @FormParam("level") int level

) {

String userName = (String)request.getSession().getAttribute("player");

MatchStatus newMatch = matchService.createMatch(userName, level);

if(newMatch != null) {

return Response

.ok()

.entity(newMatch)

.build();

}

else {

return Response.serverError().build();

}

}

/\*\*

\* Changes a Match's status to Ingame (marking the start of the Match for all players)

\* @return MatchStatus encoded in JSON

\*/

@POST

@Produces(MediaType.TEXT\_PLAIN)

@Path("start")

public Response start() {

String username = (String)request.getSession().getAttribute("player");

matchService.startMatch(new Player(username));

return Response

.ok()

.build();

}

/\*\*

\* Lists all currently lobbying matches in a JSON array

\* @return Response 200 OK JSON array with encoded MatchStatus for each lobbying Match

\*/

@GET

@Produces(MediaType.APPLICATION\_JSON)

@Path("list")

public Response list() {

MatchStatus[] matches = matchService.getLobbyingMatches();

return Response

.ok()

.entity(matches)

.build();

}

/\*\*

\* Joins the Player in an ongoing Match

\* @param matchId the UUID ID of the Match, must not be null

\* @return Response 200 OK with the latest MatchStatus encoded in JSON

\*/

@POST

@Produces(MediaType.APPLICATION\_JSON)

@Path("join")

public Response join(

@NotNull @FormParam("matchId") UUID matchId

) {

String username = (String)request.getSession(false).getAttribute("player");

try {

matchService.joinMatch(new Player(username), matchId);

return Response

.ok()

.entity(matchService.getStatus(new Player(username)))

.build();

}

catch(SQLException e) {

e.printStackTrace();

return Response

.serverError()

.build();

}

}

/\*\*

\* Removes the Player from their current Match

\* @return Response 200 OK with a blank body

\*/

@POST

@Produces(MediaType.TEXT\_PLAIN)

@Path("leave")

public Response leave() {

String username = (String)request.getSession(false).getAttribute("player");

matchService.leaveMatch(new Player(username));

return Response

.ok()

.build();

}

/\*\*

\* Fetches the result of a Match from memory

\* @return Resepons 200 OK with JSON encoded MatchResultModel

\*/

@GET

@Produces(MediaType.APPLICATION\_JSON)

@Path("result")

public Response result() {

String username = (String)request.getSession(false).getAttribute("player");

return Response

.ok()

.entity(matchService.getMatchResult(new Player(username)))

.build();

}

}

* + 1. PlayerController.java

package com.dod.service.controller;

import com.dod.db.repositories.PlayerRepository;

import com.dod.service.model.LoginModel;

import com.dod.service.service.AuthenticationService;

import com.dod.service.service.IAuthenticationService;

import javax.servlet.http.HttpServletRequest;

import javax.validation.constraints.Max;

import javax.validation.constraints.Min;

import javax.validation.constraints.NotNull;

import javax.ws.rs.FormParam;

import javax.ws.rs.POST;

import javax.ws.rs.Path;

import javax.ws.rs.Produces;

import javax.ws.rs.core.Context;

import javax.ws.rs.core.MediaType;

import javax.ws.rs.core.Response;

import java.sql.SQLException;

import org.glassfish.grizzly.http.server.Request;

import org.hibernate.validator.constraints.Length;

/\*\*

\* <pre>

\* Manages registering and logging in a player

\* Creates the session that other controllers can use to fetch user details

\* </pre>

\*/

@Path("player")

public class PlayerController {

@Context

private Request request;

IAuthenticationService service;

public PlayerController() {

service = new AuthenticationService(new PlayerRepository());

}

/\*\*

\* Authorises a user and starts a session with them

\* @param username must be unique, not empty and less than 256 characters

\* @param password must not be empty and less than 256 characters

\* @return Response with blank body, 200 if successful otherwise 400 or 500

\*/

@POST

@Produces(MediaType.TEXT\_PLAIN)

@Path("login")

public Response login(

@NotNull @Length(min = 1, max =255) @FormParam("username") String username,

@NotNull @Length(min = 1, max =255) @FormParam("password") String password

) {

boolean isAuthorised = service.Login(new LoginModel(username, password));

if(isAuthorised) {

request.getSession(true);

request.getSession().setAttribute("player",username);

return Response.ok().build();

}

else {

return Response

.status(403)

.build();

}

}

/\*\*

\* Registers a user for the service. Username must be unique.

\* @param username must be unique, not empty and less than 256 characters

\* @param password must not be empty and less than 256 characters

\* @return Response with blank body, 200 if successful otherwise 400 or 500

\*/

@POST

@Produces(MediaType.TEXT\_PLAIN)

@Path("register")

public Response register(

@NotNull @Length(min = 1, max =255) @FormParam("username") String username,

@NotNull @Length(min = 1, max = 255) @FormParam("password") String password

) {

boolean success = service.Register(new LoginModel(username,password));

if(success) {

request.getSession(true);

request.getSession().setAttribute("player", username);

return Response.ok().build();

}

else {

return Response.status(400).build();

}

}

}

* + 2. ScoreController.java

package com.dod.service.controller;

import com.dod.db.repositories.IScoreRepository;

import com.dod.db.repositories.ScoreRepository;

import com.dod.service.model.ScoreboardModel;

import javax.ws.rs.GET;

import javax.ws.rs.Path;

import javax.ws.rs.Produces;

import javax.ws.rs.core.MediaType;

import javax.ws.rs.core.Response;

import java.sql.SQLException;

/\*\*

\* Fetches and returns the top scores

\*/

@Path("score")

public class ScoreController {

private IScoreRepository repository;

public ScoreController() {

this.repository = new ScoreRepository();

}

/\*\*

\* Fetches the top 10 scores across all players.

\* @return Response 200 OK with a JSON encoded ScoreboardModel or 500 if an error occurred

\*/

@GET

@Produces(MediaType.APPLICATION\_JSON)

@Path("top")

public Response top() {

ScoreboardModel scoreBoard = null;

try {

scoreBoard = new ScoreboardModel(repository.getHighestScores());

}

catch(SQLException e) {

e.printStackTrace();

return Response.serverError().build();

}

return

Response.ok()

.entity(scoreBoard)

.build();

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\service\src\main\java\com\dod\service\filters
     1. corsFilter.java

package com.dod.service.filters;

/\*\*

\* Adds CORS filter to header, enabling cross-origin AJAX requests

\* Based on: https://stackoverflow.com/questions/28065963/how-to-handle-cors-using-jax-rs-with-jersey

\*/

import java.io.IOException;

import javax.ws.rs.container.ContainerRequestContext;

import javax.ws.rs.container.ContainerResponseContext;

import javax.ws.rs.container.ContainerResponseFilter;

import javax.ws.rs.ext.Provider;

@Provider

public class corsFilter implements ContainerResponseFilter {

/\*\*

\* Adds CORS headers to the Response before sending it

\* @param request ContainerRequestContext

\* @param response ContainerResponseContext

\*/

@Override

public void filter(ContainerRequestContext request,

ContainerResponseContext response) {

response.getHeaders().add("Access-Control-Allow-Origin", "http://localhost:63342");

response.getHeaders().add("Access-Control-Allow-Headers",

"origin, content-type, accept, authorization");

response.getHeaders().add("Access-Control-Allow-Credentials", "true");

response.getHeaders().add("Access-Control-Allow-Methods",

"GET, POST, PUT, DELETE, OPTIONS, HEAD");

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\service\src\main\java\com\dod\service\model
     1. CharacterModel.java

package com.dod.service.model;

import com.dod.models.Point;

import javax.xml.bind.annotation.XmlRootElement;

/\*\*

\* A simpler model of Character for JSON encoding

\*/

@XmlRootElement

public class CharacterModel {

private String playerName;

private int noCoins;

private Point position;

public CharacterModel() { }

public CharacterModel(String playerName, int noCoins, Point position) {

this.playerName = playerName;

this.noCoins = noCoins;

this.position = position;

}

public String getPlayerName() {

return playerName;

}

public void setPlayerName(String playerName) {

this.playerName = playerName;

}

public int getNoCoins() {

return noCoins;

}

public void setNoCoins(int noCoins) {

this.noCoins = noCoins;

}

public Point getPosition() {

return position;

}

public void setPosition(Point position) {

this.position = position;

}

}

* + 1. GameStateModel.java

package com.dod.service.model;

import javax.xml.bind.annotation.XmlRootElement;

/\*\*

\* Represents the current GameState. Intended to be communicated to the client via JSON encoding.

\*/

@XmlRootElement

public class GameStateModel {

private TileModel[] tiles;

private CharacterModel[] characters;

private CharacterModel playerCharacter;

private int minNumOfCoins;

private boolean hasEnded;

public GameStateModel() { }

public GameStateModel(TileModel[] tiles, CharacterModel[] characters, CharacterModel playerCharacter, boolean hasEnded, int minNumOfCoins) {

this.tiles = tiles;

this.characters = characters;

this.playerCharacter = playerCharacter;

this.hasEnded = hasEnded;

this.minNumOfCoins = minNumOfCoins;

}

public TileModel[] getTiles() {

return tiles;

}

public void setTiles(TileModel[] tiles) {

this.tiles = tiles;

}

public CharacterModel[] getCharacters() {

return characters;

}

public void setCharacters(CharacterModel[] characters) {

this.characters = characters;

}

/\*\*

\* The Character belonging to the Player that made the request

\* @return Character

\*/

public CharacterModel getPlayerCharacter() {

return playerCharacter;

}

/\*\*

\* The Character belonging to the Player that made the request

\* @param playerCharacter Character

\*/

public void setPlayerCharacter(CharacterModel playerCharacter) {

this.playerCharacter = playerCharacter;

}

/\*\*

\* Whether the match is ongoing- triggers the client's endgame if true

\* @return boolean

\*/

public boolean isHasEnded() {

return hasEnded;

}

/\*\*

\* Whether the match is ongoing- triggers the client's endgame if true

\* @param hasEnded boolean

\*/

public void setHasEnded(boolean hasEnded) {

this.hasEnded = hasEnded;

}

/\*\*

\* The minimum number of coins needed to win the Match

\* @return int

\*/

public int getMinNumOfCoins() { return minNumOfCoins; }

/\*\*

\* \* The minimum number of coins needed to win the Match

\* @param minNumOfCoins int

\*/

public void setMinNumOfCoins(int minNumOfCoins) { this.minNumOfCoins = minNumOfCoins; }

}

* + 1. LoginModel.java

package com.dod.service.model;

import com.dod.models.Player;

/\*\*

\* Simple model/bean used to pass information to/from the AuthorisationService

\*/

public class LoginModel {

private String userName;

private String password;

public LoginModel(String userName, String password) {

this.userName = userName;

this.password = password;

}

public String getUserName() {

return userName;

}

public void setUserName(String userName) {

this.userName = userName;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

/\*\*

\* Convenience method to return the LoginModel's username in the Player model

\* @return Player

\*/

public Player asPlayer() {

return new Player(userName);

}

}

* + 1. MatchResultModel.java

package com.dod.service.model;

import javax.xml.bind.annotation.XmlRootElement;

/\*\*

\* Models the information the client needs to display the end-game screen when the game ends.

\*/

@XmlRootElement

public class MatchResultModel {

private String winner;

private int winnerCoins;

private int score;

public MatchResultModel(String winner, int winnerCoins, int score) {

this.winner = winner;

this.winnerCoins = winnerCoins;

this.score = score;

}

public MatchResultModel() { }

public String getWinner() {

return winner;

}

public void setWinner(String winner) {

this.winner = winner;

}

public int getWinnerCoins() {

return winnerCoins;

}

public void setWinnerCoins(int winnerCoins) {

this.winnerCoins = winnerCoins;

}

public int getScore() { return score; }

public void setScore(int score) { this.score = score; }

}

* + 1. MatchStatus.java

package com.dod.service.model;

import com.dod.models.Match;

import javax.xml.bind.annotation.XmlID;

import javax.xml.bind.annotation.XmlRootElement;

import java.util.UUID;

/\*\*

\* Models the current state of a lobbying match.

\*/

@XmlRootElement

public class MatchStatus

{

private String[] playerNames;

@XmlID

private UUID id;

private String state;

public MatchStatus() {}

public MatchStatus(Match match) {

this.playerNames = match.getPlayerNames();

this.id = match.getId();

this.state = match.getState().toString();

}

public String[] getPlayerNames() {

return playerNames;

}

public UUID getId() {

return id;

}

public void setPlayerNames(String[] playerNames) {

this.playerNames = playerNames;

}

public void setId(UUID id) {

this.id = id;

}

public String getState() {

return state;

}

public void setState(String state) {

this.state = state;

}

}

* + 1. ScoreboardModel.java

package com.dod.service.model;

import com.dod.models.Score;

import javax.xml.bind.annotation.XmlRootElement;

/\*\*

\* Models a collection of scores to be displayed on a score table

\*/

@XmlRootElement

public class ScoreboardModel {

Score[] scores;

public ScoreboardModel(Score[] scores) {

this.scores = scores;

}

public ScoreboardModel() {

}

public Score[] getScores() {

return scores;

}

public void setScores(Score[] scores) {

this.scores = scores;

}

}

* + 1. TileModel.java

package com.dod.service.model;

import com.dod.models.Point;

import javax.xml.bind.annotation.XmlRootElement;

/\*\*

\* A simpler Tile model just for JSON encoding

\*/

@XmlRootElement

public class TileModel {

private int type;

private Point position;

public TileModel() { }

public TileModel(int type, Point position) {

this.type = type;

this.position = position;

}

public int getType() {

return type;

}

public void setType(int type) {

this.type = type;

}

public Point getPosition() {

return position;

}

public void setPosition(Point position) {

this.position = position;

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\service\src\main\java\com\dod\service\service
     1. AuthenticationService.java

package com.dod.service.service;

import com.dod.db.repositories.IPlayerRepository;

import com.dod.models.Player;

import com.dod.service.model.LoginModel;

import org.apache.commons.codec.binary.Base64;

import javax.crypto.SecretKey;

import javax.crypto.SecretKeyFactory;

import javax.crypto.spec.PBEKeySpec;

import java.security.NoSuchAlgorithmException;

import java.security.SecureRandom;

import java.security.spec.InvalidKeySpecException;

import java.sql.SQLException;

/\*\*

\* <pre>

\* Handles authenticating a user against their user/pass combo

\* Uses a salt, generated using a secure RNG

\* Uses PlayerRepository to fetch Player database details

\* </pre>

\*/

public class AuthenticationService implements IAuthenticationService {

IPlayerRepository repository;

public AuthenticationService(IPlayerRepository repository) {

this.repository = repository;

}

/\*\*

\* Registers a new user

\* @param model LoginModel containing the user/pass to be registered

\* @return boolean true if successful otherwise false

\*/

@Override

public boolean Register(LoginModel model) {

boolean result = false;

Player player = player = model.asPlayer();

Player repositoryPlayer = null;

try {

repositoryPlayer = repository.get(player);

}

catch(SQLException e) {

e.printStackTrace();

}

if(repositoryPlayer == null) {

try {

generateSalt(player);

player.setHashedPassword(hashAndSalt(model.getPassword(), player.getSalt()));

repository.insert(player);

result = true;

} catch (Exception e) {

result = false;

}

}

return result;

}

/\*\*

\* Registers a new user

\* @param model LoginModel containing the user/pass to be authorised

\* @return boolean true if the user is authorised, otherwise false

\*/

@Override

public boolean Login(LoginModel model) {

boolean result = false;

try {

Player player = repository.get(model.asPlayer());

if (hashAndSalt(model.getPassword(), player.getSalt()).equals(player.getHashedPassword())) {

result = true;

}

}

catch(Exception e) {

e.printStackTrace();

}

return result;

}

/\*\*

\* Generates a random secure salt

\* @param player Player to set the salt for- gets inserted into the database later

\* @throws NoSuchAlgorithmException could be thrown due to a dependency problem

\*/

private void generateSalt(Player player) throws NoSuchAlgorithmException {

byte[] salt = SecureRandom.getInstance("SHA1PRNG").generateSeed(32);

player.setSalt(salt);

}

/\*\*

\* Hashes and salts a password

\* @param password the password to be hashed/salted

\* @param salt the salt to salt the password with

\* @return String the hashed/salted password

\* @throws NoSuchAlgorithmException could be thrown due to a dependency problem

\* @throws InvalidKeySpecException could be thrown due to a dependency problem

\*/

private String hashAndSalt(String password, byte[] salt) throws NoSuchAlgorithmException, InvalidKeySpecException {

String hashedPassword = hash(password, salt);

return Base64.encodeBase64String(salt) + hashedPassword;

}

/\*\*

\* Hashes a password

\* @param password the password to be hashed

\* @param salt the salt to secure the password with

\* @return String the hashed password

\* @throws NoSuchAlgorithmException could be thrown due to a dependency problem

\* @throws InvalidKeySpecException could be thrown due to a dependency problem

\*/

private String hash(String password, byte[] salt) throws NoSuchAlgorithmException, InvalidKeySpecException {

SecretKeyFactory f = SecretKeyFactory.getInstance("PBKDF2WithHmacSHA1");

SecretKey key = f.generateSecret(new PBEKeySpec(

password.toCharArray(), salt, 20\*1000, 256)

);

return Base64.encodeBase64String(key.getEncoded());

}

}

* + 1. IAuthenticationService.java

package com.dod.service.service;

import com.dod.service.model.LoginModel;

import java.sql.SQLException;

/\*\*

\* <pre>

\* Handles authenticating a user against their user/pass combo

\* </pre>

\*/

public interface IAuthenticationService {

/\*\*

\* Registers a new user

\* @param model LoginModel containing the user/pass to be registered

\* @return boolean true if successful otherwise false

\*/

boolean Register(LoginModel model);

/\*\*

\* Registers a new user

\* @param model LoginModel containing the user/pass to be authorised

\* @return boolean true if the user is authorised, otherwise false

\*/

boolean Login(LoginModel model);

}

* + 1. IIOService.java

package com.dod.service.service;

import org.json.simple.JSONObject;

import org.json.simple.parser.ParseException;

import java.io.IOException;

/\*\*

\* Handles IO within the Service

\*/

public interface IIOService {

/\*\*

\* Fetches an asset as a String

\* @param path String the path to the asset we are to fetch

\* @return String the contents of the asset

\* @throws IOException if the file is missing

\*/

String getString(String path) throws IOException;

/\*\*

\* Fetches an asset as parsed JSON

\* @param path String the path to the asset we are to fetch

\* @return JSONObject the parsed content of the asset

\* @throws IOException if the file is missing

\* @throws ParseException if the file isn't encoded in valid JSON

\*/

JSONObject getJsonObject(String path) throws IOException, ParseException;

}

* + 1. IMatchService.java

package com.dod.service.service;

import com.dod.models.Player;

import com.dod.service.model.MatchResultModel;

import com.dod.service.model.MatchStatus;

import java.sql.SQLException;

import java.util.UUID;

/\*\*

\* Manages joining/starting/ending matches.

\*/

public interface IMatchService {

/\*\*

\* Creates a new Match

\* @param userName String username of the Player who is starting the Match

\* @param level int the number of the level to load for this Match

\* @return MatchStatus of the newly created Match

\*/

MatchStatus createMatch(String userName, int level);

/\*\*

\* Changes a Match's state to InGame

\* @param player Player whose ongoing Match will be modified

\*/

void startMatch(Player player);

/\*\*

\* Returns the MatchStatus for a particular Player's Match

\* @param player Player whose ongoing Match will be fetched

\* @return

\*/

MatchStatus getStatus(Player player);

/\*\*

\* Removes a Player from their current ongoing Match

\* @param player Player the Player whom will be removed from their ongoing Match

\*/

void leaveMatch(Player player);

/\*\*

\* Changes a Match's state to Over

\* @param player Player whose ongoing Match will be modified

\*/

void endMatch(Player player);

/\*\*

\* Adds the Player to a particular Match

\* @param player Player whom will be added

\* @param matchID UUID of the Match that player will be addd to

\* @throws SQLException thrown if Player doesn't exist or a SQL connectivity issue occurs

\*/

void joinMatch(Player player, UUID matchID) throws SQLException;

/\*\*

\* Get all Matches currently in the Lobbying state

\* @return MatchStatus[] array of all Matches in the Lobbying state

\*/

MatchStatus[] getLobbyingMatches();

/\*\*

\* Gets the MatchResultModel for a finished Match

\* todo why not remove the Player from the Match at this point rather than send another request?

\* @param player Player the Player that has a finished Match

\* @return MatchResultModel pertaining to the player's Match

\*/

MatchResultModel getMatchResult(Player player);

}

* + 1. IMovementService.java

package com.dod.service.service;

import com.dod.models.Character;

import com.dod.models.Map;

import com.dod.models.Player;

import com.dod.models.Point;

import java.sql.SQLException;

/\*\*

\* Interface for MovementService.

\* Handles game logic to move a character from one point to another.

\*/

public interface IMovementService {

/\*\*

\* Moves the Player in a particular direction. Will increment player's gold if interacting with gold coins, can

\* trigger end of the Match when player interacts with Exit.

\* @param direction String a char from {W,S,A,D} pertaining to a particular direction in the WASD layout

\* @param player Player whom's Character will be moved

\* @return Point that the Player has moved to

\* @throws SQLException if the database cannot be reached or statement fails while inserting new score

\*/

Point Move(String direction, Player player) throws SQLException;

}

* + 1. IOService.java

package com.dod.service.service;

import org.json.simple.JSONObject;

import org.json.simple.parser.JSONParser;

import org.json.simple.parser.ParseException;

import java.io.IOException;

import java.nio.charset.StandardCharsets;

import java.nio.file.Files;

import java.nio.file.Paths;

/\*\*

\* Handles IO within the Service

\*/

public class IOService implements IIOService {

private String pathToAssets = "..//..//assets";

private JSONParser parser;

public IOService(String pathToAssets) {

this.pathToAssets = pathToAssets;

parser = new JSONParser();

}

public IOService() {

parser= new JSONParser();

}

/\*\*

\* Fetches an asset as a String

\* @param path String the path to the asset we are to fetch

\* @return String the contents of the asset

\* @throws IOException if the file is missing

\*/

@Override

public String getString(String path) throws IOException {

byte[] encoded = Files.readAllBytes(Paths.get(pathToAssets + path));

return new String(encoded, StandardCharsets.UTF\_8);

}

/\*\*

\* Fetches an asset as parsed JSON

\* @param path String the path to the asset we are to fetch

\* @return JSONObject the parsed content of the asset

\* @throws IOException if the file is missing

\* @throws ParseException if the file isn't encoded in valid JSON

\*/

@Override

public JSONObject getJsonObject(String path) throws IOException, ParseException {

String input = getString(path);

return (JSONObject) parser.parse(input);

}

}

* + 1. IParseService.java

package com.dod.service.service;

import com.dod.models.Map;

import org.json.simple.JSONObject;

/\*\*

\* Parses JSON objects- namely the Map

\*/

public interface IParseService {

/\*\*

\* Parses a Map object from it's JSON encoding

\* @param input JSONObject a JSON encoding of the Map

\* @return Map an initialised Map parsed from JSON

\* @throws NullPointerException may be thrown by SimpleJson while parsing

\*/

Map parseMap(JSONObject input) throws NullPointerException;

}

* + 1. IStateService.java

package com.dod.service.service;

import com.dod.models.Player;

import com.dod.service.model.GameStateModel;

/\*\*

\* Generates a representation of the current game state form the perspective of a particular character

\*/

public interface IStateService {

/\*\*

\* Generates and returns a representation of the current game state form the perspective of a particular character

\* @param player Player the Player a GameStateModel will be generated for

\* @return GameStateModel a model of the current game state

\*/

GameStateModel GetState(Player player);

}

* + 1. IVisibilityService.java

package com.dod.service.service;

import com.dod.models.Map;

import com.dod.models.Character;

/\*\*

\* Calculates the visible tiles from the perspective of a particular Character

\*/

public interface IVisibilityService {

/\*\*

\* Generates a copy of a Map with the correct isVisible flags set for the perspective of a particular Character

\* @param deungeonMap the Map pchar resides in

\* @param pchar the Character the perspective of which we're generating visibility with

\* @return a copy of dungeonMap with correct isVisible flags set for the perspective of pchar

\*/

Map createVisibleMap(Map deungeonMap, Character pchar);

}

* + 1. MatchService.java

package com.dod.service.service;

import com.dod.db.repositories.IPlayerRepository;

import com.dod.game.IMatchList;

import com.dod.models.\*;

import com.dod.models.Character;

import com.dod.service.constant.Assets;

import com.dod.service.model.MatchResultModel;

import com.dod.service.model.MatchStatus;

import java.sql.SQLException;

import java.util.Date;

import java.util.List;

import java.util.UUID;

/\*\*

\* <pre>

\* Manages joining/starting/ending matches.

\* Makes heavy use of MatchList to store matches in memory.

\* Uses PlayerRepository to fetch Player data.

\* Uses IOService and ParseService to load levels when starting a new Match.

\* </pre>

\*/

public class MatchService implements IMatchService {

private IIOService ioService;

private IParseService parseService;

private IPlayerRepository playerRepository;

private IMatchList matchList;

public MatchService(IIOService ioService, IParseService parseService, IPlayerRepository playerRepository, IMatchList matchList) {

this.ioService = ioService;

this.parseService = parseService;

this.playerRepository = playerRepository;

this.matchList = matchList;

}

/\*\*

\* Creates a new Match

\* @param userName String username of the Player who is starting the Match

\* @param level int the number of the level to load for this Match

\* @return MatchStatus of the newly created Match

\*/

@Override

public MatchStatus createMatch(String userName, int level) {

Map map = null;

Player player;

try {

String path = String.format(Assets.MapLevelFormat, Integer.toString(level));

map = parseService.parseMap(ioService.getJsonObject(path));

player = playerRepository.get(new Player(userName));

}

catch(Exception e) {

e.printStackTrace();

return null;

}

Match match = new Match(map);

match.addCharacter(player, map.getRandomFreeTilePoint());

for(int i = 0; i < map.getCoinNo(); i++) {

map.getTile(map.getRandomFreeTilePoint()).setType(TileType.Coin.getValue());

}

matchList.addMatch(match);

return new MatchStatus(match);

}

/\*\*

\* Changes a Match's state to InGame

\* @param player Player whose ongoing Match will be modified

\*/

@Override

public void startMatch(Player player) {

Match match = matchList.getMatchForPlayer(player.getUsername());

Date temp = new Date();

match.setTimer(temp.getTime());

match.setState(MatchState.Ingame);

}

/\*\*

\* Returns the MatchStatus for a particular Player's Match

\* @param player Player whose ongoing Match will be fetched

\* @return

\*/

@Override

public MatchStatus getStatus(Player player) {

if(!matchList.playerHasMatch(player.getUsername())) {

return null;

} else {

Match match = matchList.getMatchForPlayer(player.getUsername());

return new MatchStatus(match);

}

}

/\*\*

\* Removes a Player from their current ongoing Match

\* @param player Player the Player whom will be removed from their ongoing Match

\*/

@Override

public void leaveMatch(Player player) {

Match match = matchList.getMatchForPlayer(player.getUsername());

match.removeCharacter(player);

}

/\*\*

\* Changes a Match's state to Over

\* @param player Player whose ongoing Match will be modified

\*/

@Override

public void endMatch(Player player) {

Match match = matchList.getMatchForPlayer(player.getUsername());

matchList.removeMatch(match.getId());

}

/\*\*

\* Adds the Player to a particular Match

\* @param player Player whom will be added

\* @param matchID UUID of the Match that player will be addd to

\* @throws SQLException thrown if Player doesn't exist or a SQL connectivity issue occurs

\*/

@Override

public void joinMatch(Player player, UUID matchId) throws SQLException {

Match match = matchList.getMatch(matchId);

player = playerRepository.get(player);

match.addCharacter(player, match.getMap().getRandomFreeTilePoint());

}

/\*\*

\* Get all Matches currently in the Lobbying state

\* @return MatchStatus[] array of all Matches in the Lobbying state

\*/

@Override

public MatchStatus[] getLobbyingMatches() {

List<Match> matches = matchList.getLobbyingMatches();

MatchStatus[] matchStatuses = new MatchStatus[matches.size()];

for(int i = 0; i < matches.size(); i++) {

matchStatuses[i] = new MatchStatus(matches.get(i));

}

return matchStatuses;

}

/\*\*

\* Gets the MatchResultModel for a finished Match

\* todo why not remove the Player from the Match at this point rather than send another request?

\* @param player Player the Player that has a finished Match

\* @return MatchResultModel pertaining to the player's Match

\*/

@Override

public MatchResultModel getMatchResult(Player player) {

Match match = matchList.getMatchForPlayer(player.getUsername());

Character winner = match.getCharacterWithHighestCoins();

return new MatchResultModel(winner.getPlayer().getUsername(), winner.getCollectedCoins(), match.getScore());

}

}

* + 1. MovementService.java

package com.dod.service.service;

import com.dod.db.repositories.IScoreRepository;

import com.dod.db.repositories.ScoreRepository;

import com.dod.game.IMatchList;

import com.dod.game.MatchList;

import com.dod.models.\*;

import com.dod.models.Character;

import java.sql.SQLException;

import java.util.Date;

/\*\*

\* Implementation of IMovementService

\*/

public class MovementService implements IMovementService {

IMatchList matchList;

IScoreRepository scoreRepository;

public MovementService() {

this.matchList = MatchList.instance();

this.scoreRepository = (IScoreRepository)new ScoreRepository();

}

/\*\*

\* Moves the Player in a particular direction. Will increment player's gold if interacting with gold coins, can

\* trigger end of the Match when player interacts with Exit.

\* @param direction String a char from {W,S,A,D} pertaining to a particular direction in the WASD layout

\* @param player Player whom's Character will be moved

\* @return Point that the Player has moved to

\* @throws SQLException if the database cannot be reached or statement fails while inserting new score

\*/

@Override

public Point Move(String direction, Player player) throws SQLException {

Match match = matchList.getMatchForPlayer(player.getUsername());

Character pChar = match.getCharacter(player.getUsername());

Map dungeonMap = match.getMap();

Point newPoint;

switch (direction) {

case "W":

// check if movement valid

newPoint = new Point(pChar.getPosition().x, pChar.getPosition().y - 1);

return updatePosition(newPoint, dungeonMap, pChar);

case "D":

newPoint = new Point(pChar.getPosition().x + 1, pChar.getPosition().y);

return updatePosition(newPoint, dungeonMap, pChar);

case "S":

newPoint = new Point(pChar.getPosition().x, pChar.getPosition().y + 1);

return updatePosition(newPoint, dungeonMap, pChar);

case "A":

newPoint = new Point(pChar.getPosition().x - 1, pChar.getPosition().y);

return updatePosition(newPoint, dungeonMap, pChar);

default:

return pChar.getPosition();

}

}

/\*\*

\* Decides whether or not to update the Player's Position and interacts with special Tiles.

\* @param newPoint Point the Point the Character wishes to move to

\* @param dungeonMap Map that the Character is moving in

\* @param pChar Character that is moving

\* @return Point the Point that the Character is now in

\* @throws SQLException if the database cannot be reached or statement fails while inserting new score

\*/

private Point updatePosition(Point newPoint, Map dungeonMap, Character pChar) throws SQLException {

if (dungeonMap.getTile(newPoint).getType() == TileType.Empty.getValue()) {

pChar.setPosition(newPoint);

} else if (dungeonMap.getTile(newPoint).getType() == TileType.Coin.getValue()){

pChar.setPosition(newPoint);

if (!pChar.getCollectedCoinsPos().contains(newPoint)) {

pChar.setCollectedCoins(pChar.getCollectedCoins() + 1);

pChar.addCollectedCoinsPos(newPoint);

}

}

else if(dungeonMap.getTile(newPoint).getType() == TileType.Exit.getValue()) {

if(pChar.getCollectedCoins() > dungeonMap.getCoinWin()) {

pChar.setPosition(newPoint);

Match match = matchList.getMatchForPlayer(pChar.getPlayer().getUsername());

match.setState(MatchState.Over);

Date date = new Date();

match.setTimer(date.getTime() - match.getTimer());

int score = ((int) ((double)pChar.getCollectedCoins() / (double)match.getTimer() \* 10000000));

match.setScore(score);

scoreRepository.insert(new Score(pChar.getPlayer().getUsername(), score));

}

}

return pChar.getPosition();

}

}

* + 1. ParseService.java

package com.dod.service.service;

import com.dod.models.Map;

import com.dod.models.Point;

import com.dod.models.Tile;

import org.json.simple.JSONArray;

import org.json.simple.JSONObject;

import java.util.Iterator;

/\*\*

\* Implementation of IParseService.

\*/

public class ParseService implements IParseService {

/\*\*

\* Parses a Map object from it's JSON encoding

\* @param input JSONObject a JSON encoding of the Map

\* @return Map an initialised Map parsed from JSON

\* @throws NullPointerException may be thrown by SimpleJson while parsing

\*/

@Override

public Map parseMap(JSONObject input) throws NullPointerException {

JSONObject level = getLevel(input);

JSONArray rowsOfTiles = (JSONArray) level.get("map");

int xSize = ((JSONArray) rowsOfTiles.get(0)).size();

int ySize = rowsOfTiles.size();

Map map = new Map(

(String) level.get("name"),

((Long) (level.get("coin\_num"))).intValue(),

((Long) (level.get("coin\_win"))).intValue(),

((Long) (level.get("Width"))).intValue(),

((Long) (level.get("Height"))).intValue(),

new Point(xSize, ySize));

for (int y = 0; y < ySize; y++) {

JSONArray row = (JSONArray) rowsOfTiles.get(y);

for (int x = 0; x < xSize; x++) {

JSONObject tile = (JSONObject) row.get(x);

map.setTile(new Point(x, y), new Tile(((Long) tile.get("type")).intValue()));

}

}

return map;

}

/\*\*

\* Figures out the level name based on the number of the level and returns the initial element

\* @param input the level numer

\* @return JSONObject of the Map object

\*/

private JSONObject getLevel(JSONObject input) {

Iterator<String> keys = input.keySet().iterator();

String levelKey = keys.hasNext() ? keys.next() : "";

return (JSONObject)input.get(levelKey);

}

}

* + 1. StateService.java

package com.dod.service.service;

import com.dod.game.IMatchList;

import com.dod.models.Character;

import com.dod.models.\*;

import com.dod.service.model.CharacterModel;

import com.dod.service.model.GameStateModel;

import com.dod.service.model.TileModel;

import java.util.ArrayList;

import java.util.List;

/\*\*

\* Generates a representation of the current game state form the perspective of a particular character

\*/

public class StateService implements IStateService {

IVisibilityService visibilityService;

IMatchList matchList;

public StateService(IVisibilityService visibilityService, IMatchList matchList) {

this.visibilityService = visibilityService;

this.matchList = matchList;

}

/\*\*

\* Generates and returns a representation of the current game state form the perspective of a particular character

\* @param player Player the Player a GameStateModel will be generated for

\* @return GameStateModel a model of the current game state

\*/

@Override

public GameStateModel GetState(Player player) {

Match match = matchList.getMatchForPlayer(player.getUsername());

Map map = visibilityService.createVisibleMap(match.getMap(), match.getCharacter(player.getUsername()));

List<TileModel> tiles = new ArrayList();

List<CharacterModel> characters = new ArrayList();

for(int x = 0; x < map.getWidth(); x++) {

for(int y = 0; y < map.getHeight(); y++) {

Point point = new Point(x,y);

Tile tile = map.getTile(point);

if(tile.isVisible()) {

tiles.add(new TileModel(tile.getType(), point));

List<Character> charactersOnTile = match.getCharactersOnTile(point);

for(Character character : charactersOnTile) {

characters.add(new CharacterModel(

character.getPlayer().getUsername(),

character.getCollectedCoins(),

character.getPosition()));

}

}

}

}

Character character = match.getCharacter(player.getUsername());

return new GameStateModel(tiles.toArray(

new TileModel[tiles.size()]),

characters.toArray(new CharacterModel[characters.size()]),

new CharacterModel(

character.getPlayer().getUsername(),

character.getCollectedCoins(),

character.getPosition()),

match.getState() == MatchState.Over,

match.getMap().getCoinWin());

}

}

* + 1. VisibilityService.java

package com.dod.service.service;

import com.dod.models.Map;

import com.dod.models.Character;

import com.dod.models.Point;

import com.dod.models.Tile;

/\*\*

\* Calculates the visible tiles from the perspective of a particular Character

\*/

public class VisibilityService implements IVisibilityService {

/\*\*

\* Generates a copy of a Map with the correct isVisible flags set for the perspective of a particular Character

\* @param deungeonMap the Map pchar resides in

\* @param pchar the Character the perspective of which we're generating visibility with

\* @return a copy of dungeonMap with correct isVisible flags set for the perspective of pchar

\*/

@Override

public Map createVisibleMap(Map dungeonMap, Character pchar) {

Map returnValue = new Map(dungeonMap.getName(), dungeonMap.getCoinNo(), dungeonMap.getCoinWin(), dungeonMap.getWidth(), dungeonMap.getHeight(), new Point(dungeonMap.getWidth(), dungeonMap.getHeight()));

for (int i = 0; i < dungeonMap.getWidth(); i++) {

for (int j = 0; j < dungeonMap.getHeight(); j++) {

if (pchar.getCollectedCoinsPos().contains(new Point(i, j)))

returnValue.setTile(new Point(i, j), new Tile(1, true));

else

returnValue.setTile(new Point(i,j), dungeonMap.getTile(new Point(i, j)));

if (pchar.getPosition().x - 2 > i || pchar.getPosition().x + 2 < i||pchar.getPosition().y -2 > j||pchar.getPosition().y+2 < j)

returnValue.getTile(new Point(i, j)).setVisibility(false);

else

returnValue.getTile(new Point(i, j)).setVisibility(true);

}

}

return returnValue;

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\service\src\main\java\com\dod\service
     1. Main.java

package com.dod.service;

import com.dod.service.filters.corsFilter;

import org.glassfish.grizzly.http.server.HttpServer;

import org.glassfish.jersey.grizzly2.httpserver.GrizzlyHttpServerFactory;

import org.glassfish.jersey.server.ResourceConfig;

import java.io.IOException;

import java.net.URI;

/\*\*

\* Main class.

\*

\*/

public class Main {

// Base URI the Grizzly HTTP server will listen on

public static final String BASE\_URI = "http://localhost:8080/";

/\*\*

\* Starts Grizzly HTTP server exposing JAX-RS resources defined in this application.

\* @return Grizzly HTTP server.

\*/

public static HttpServer startServer() {

// create a resource config that scans for JAX-RS resources and providers

// in com.dod.service package

final ResourceConfig rc = new ResourceConfig().packages("com.dod.service");

rc.register(new corsFilter());

// create and start a new instance of grizzly http server

// exposing the Jersey application at BASE\_URI

return GrizzlyHttpServerFactory.createHttpServer(URI.create(BASE\_URI), rc);

}

/\*\*

\* Main method.

\* @param args

\* @throws IOException

\*/

public static void main(String[] args) throws IOException {

final HttpServer server = startServer();

System.out.println(String.format("Jersey app started with WADL available at "

+ "%sapplication.wadl\nHit enter to stop it...", BASE\_URI));

System.in.read();

server.stop();

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\service
     1. pom.xml

<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/maven-v4\_0\_0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>dungeon-of-doom</groupId>

<artifactId>dungeon-of-doom-service</artifactId>

<packaging>jar</packaging>

<version>1.0</version>

<name>dungeon-of-doom-service</name>

<dependencyManagement>

<dependencies>

<dependency>

<groupId>org.glassfish.jersey</groupId>

<artifactId>jersey-bom</artifactId>

<version>${jersey.version}</version>

<type>pom</type>

<scope>import</scope>

</dependency>

</dependencies>

</dependencyManagement>

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<dependency>

<groupId>org.glassfish.jersey.containers</groupId>

<artifactId>jersey-container-grizzly2-http</artifactId>

</dependency>

<dependency>

<groupId>org.glassfish.jersey.media</groupId>

<artifactId>jersey-media-moxy</artifactId>

</dependency>

<dependency>

<groupId>com.googlecode.json-simple</groupId>

<artifactId>json-simple</artifactId>

<version>1.1.1</version>

</dependency>

<!-- https://mvnrepository.com/artifact/commons-codec/commons-codec -->

<dependency>

<groupId>commons-codec</groupId>

<artifactId>commons-codec</artifactId>

<version>1.10</version>

</dependency>

<!-- https://mvnrepository.com/artifact/javax.servlet/javax.servlet-api -->

<dependency>

<groupId>javax.servlet</groupId>

<artifactId>javax.servlet-api</artifactId>

<version>3.1.0</version>

</dependency>

<!-- https://mvnrepository.com/artifact/mysql/mysql-connector-java -->

<dependency>

<groupId>mysql</groupId>

<artifactId>mysql-connector-java</artifactId>

<version>5.1.40</version>

</dependency>

<dependency>

<groupId>org.glassfish.jersey.ext</groupId>

<artifactId>jersey-bean-validation</artifactId>

<version>2.24.1</version>

</dependency>

<dependency>

<groupId>com.owlike</groupId>

<artifactId>genson</artifactId>

<version>1.4</version>

</dependency>

</dependencies>

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<artifactId>maven-compiler-plugin</artifactId>

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<configuration>

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<target>1.7</target>

</configuration>

</plugin>

<plugin>

<groupId>org.codehaus.mojo</groupId>

<artifactId>exec-maven-plugin</artifactId>

<version>1.2.1</version>

<executions>

<execution>

<goals>

<goal>java</goal>

</goals>

</execution>

</executions>

<configuration>

<mainClass>com.dod.service.Main</mainClass>

</configuration>

</plugin>

</plugins>

</build>

<properties>

<jersey.version>2.24.1</jersey.version>

<project.build.sourceEncoding>UTF-8</project.build.sourceEncoding>

</properties>

</project>

* 1. DungeonOfDooom-master\Sourcecode\project\src\tests\com\dod\test\integration\db
     1. DatabaseConnectionTests.java

package dod.test.integration.db;

import com.dod.db.DatabaseConnection;

import org.junit.Assert;

import org.junit.Test;

import java.sql.Connection;

import java.sql.SQLException;

/\*\*

\* Tests database integration

\*/

public class DatabaseConnectionTests {

@Test

public void ShouldConnectToDatabase() {

Connection connection = null;

try {

connection = DatabaseConnection.getConnection();

Assert.assertFalse(connection.isClosed());

}

catch(SQLException e) {

Assert.fail(e.getMessage());

}

DatabaseConnection.Close();

}

@Test

public void ShouldCloseDatabase() {

Connection connection = null;

try {

connection = DatabaseConnection.getConnection();

}

catch(SQLException e) {

Assert.fail(e.getMessage());

}

DatabaseConnection.Close();

try {

Assert.assertTrue(connection.isClosed());

}

catch(SQLException e) {

Assert.fail(e.getMessage());

}

}

}

* + 1. DatabaseQueryTests.java

package dod.test.integration.db;

import com.dod.db.repositories.PlayerRepository;

import com.dod.db.repositories.ScoreRepository;

import com.dod.models.Player;

import com.dod.models.Score;

import org.apache.commons.codec.digest.DigestUtils;

import org.junit.Assert;

import org.junit.Test;

import java.sql.SQLException;

/\*\*

\* Unit tests for Database

\*/

public class DatabaseQueryTests {

@Test

public void shouldReturnTrueIfNewPlayerValueIsAddedInDatabase() {

PlayerRepository pr = new PlayerRepository();

String pass = DigestUtils.sha1Hex("1234");

Player pl = new Player("test", pass, new byte[0]);

try {

Assert.assertTrue(pr.insert(pl));

} catch (SQLException e) {

Assert.fail(e.toString());

e.printStackTrace();

}

}

@Test

public void shouldReturnTrueIfPlayerValueExistsInDatabase() {

PlayerRepository pr = new PlayerRepository();

String pass = DigestUtils.sha1Hex("1234");

Player pl = new Player("test", pass, new byte[0]);

try {

Assert.assertTrue(pl.getUsername().equals(pr.get(pl).getUsername()) && pl.getHashedPassword().equals(pr.get(pl).getHashedPassword()));

} catch (SQLException e) {

Assert.fail(e.toString());

e.printStackTrace();

}

}

@Test

public void shouldReturnTrueIfPlayerValueIsDeleted() {

PlayerRepository pr = new PlayerRepository();

String pass = DigestUtils.sha1Hex("1234");

Player pl = new Player("test", pass, new byte[0]);

try {

Assert.assertTrue(pr.delete(pl));

} catch (SQLException e) {

Assert.fail(e.toString());

e.printStackTrace();

}

}

@Test

public void shouldReturnTrueIfNewScoreValueIsAdded() {

ScoreRepository pr = new ScoreRepository();

Player nPlayer = new Player("test", "1234", new byte[0]);

Score temp = new Score(nPlayer.getUsername(), 20);

try {

Assert.assertTrue(pr.insert(temp));

} catch (SQLException e) {

Assert.fail(e.toString());

e.printStackTrace();

}

}

@Test

public void shouldReturnTrueIfScoreValueExistsInDatabase() {

ScoreRepository pr = new ScoreRepository();

Score temp = new Score(1, "test", 20);

try {

Assert.assertTrue(temp.getId() == pr.get(temp).getId() && temp.getValue() == pr.get(temp).getValue() && temp.getUsername().equals(pr.get(temp).getUsername()));

} catch (SQLException e) {

Assert.fail(e.toString());

e.printStackTrace();

}

}

@Test

public void shouldReturnTrueIfScoreValueIsDeleted() {

ScoreRepository pr = new ScoreRepository();

Score temp = new Score(1, "test", 20);

try {

Assert.assertTrue(pr.delete(temp));

} catch (SQLException e) {

Assert.fail(e.toString());

e.printStackTrace();

}

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\tests\com\dod\test\integration\service
     1. AuthenticatedClientTestBase.java

package dod.test.integration.service;

import com.dod.game.MatchList;

import com.dod.service.Main;

import com.dod.service.model.MatchStatus;

import org.glassfish.grizzly.http.server.HttpServer;

import org.glassfish.jersey.moxy.json.MoxyJsonConfig;

import org.glassfish.jersey.moxy.json.MoxyJsonFeature;

import org.junit.After;

import org.junit.Before;

import javax.ws.rs.client.Client;

import javax.ws.rs.client.ClientBuilder;

import javax.ws.rs.client.Entity;

import javax.ws.rs.client.WebTarget;

import javax.ws.rs.core.MultivaluedHashMap;

import javax.ws.rs.core.MultivaluedMap;

import javax.ws.rs.core.Response;

import javax.ws.rs.ext.ContextResolver;

import java.util.\*;

import static org.junit.Assert.assertEquals;

/\*\*

\* A base class for testing endpoints with sessions

\*/

public class AuthenticatedClientTestBase {

protected WebTarget target;

protected String testUsername;

protected String sessionId;

protected List<UUID> matchesToRemove;

private HttpServer server;

@Before

public void setUp() {

server = Main.startServer();

//Setup JSON client

Map<String, String> namespacePrefixMapper = new HashMap<String, String>();

namespacePrefixMapper.put("http://www.w3.org/2001/XMLSchema-instance", "xsi");

MoxyJsonConfig moxyJsonConfig = new MoxyJsonConfig()

.setNamespacePrefixMapper(namespacePrefixMapper)

.setNamespaceSeparator(':');

final ContextResolver<MoxyJsonConfig> jsonConfigResolver = moxyJsonConfig.resolver();

Client c = ClientBuilder.newBuilder()

.register(MoxyJsonFeature.class)

.register(jsonConfigResolver)

.build();

target = c.target(Main.BASE\_URI);

//Generate random user/pass for testing

testUsername = UUID.randomUUID().toString();

//Register user/pass so we have a guarunteed user that exists

sessionId = registerUserAndGetSessionId(testUsername);

//For cleaning up the static MatchList

matchesToRemove = new ArrayList();

}

@After

public void tearDown() throws Exception {

server.stop();

//Cleanup static data before next turn

for(UUID id : matchesToRemove) {

MatchList.instance().removeMatch(id);

}

}

protected String registerUserAndGetSessionId(String identifier) {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", identifier);

formData.add("password", identifier);

Response registerResponse = target.path("player/register").request().post(Entity.form(formData));

//get the sessionId so we can send authorised session cookies with requests

return registerResponse.getCookies().get("JSESSIONID").getValue();

}

protected MatchStatus startNewMatch() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("level", "1");

javax.ws.rs.client.Invocation.Builder request = target.path("match/new").request();

request.cookie("JSESSIONID",sessionId);

Response result = request.post(Entity.form(formData));

assertEquals(200, result.getStatus());

return result.readEntity(MatchStatus.class);

}

}

* + 1. GameControllerTests.java

package dod.test.integration.service;

import com.dod.game.MatchList;

import com.dod.models.Player;

import com.dod.models.Point;

import com.dod.service.model.GameStateModel;

import com.dod.service.model.MatchStatus;

import org.junit.Assert;

import org.junit.Test;

import javax.ws.rs.client.Invocation;

import javax.ws.rs.core.Response;

import static org.junit.Assert.assertEquals;

import static org.junit.Assert.assertNotNull;

/\*\*

\* Tests the GameController

\*/

public class GameControllerTests extends AuthenticatedClientTestBase {

@Test

public void shouldRespondToStatus() {

MatchStatus matchStatus = startNewMatch();

matchesToRemove.add(matchStatus.getId());

Invocation.Builder request = target.path("game/status").request();

request.cookie("JSESSIONID",sessionId);

Response response = request.buildGet().invoke();

Assert.assertEquals(200, response.getStatus());

GameStateModel result = response.readEntity(GameStateModel.class);

assertNotNull(result);

assertEquals(1, result.getCharacters().length);

assertEquals(468, result.getTiles().length);

assertNotNull(result.getTiles()[0].getPosition());

}

@Test

public void shouldRespondToMove() {

String responseMsg = target.path("game/move").request().post(null).readEntity(String.class);

assertEquals("unimplemented", responseMsg);

}

}

* + 1. MatchControllerTests.java

package dod.test.integration.service;

import com.dod.game.MatchList;

import com.dod.models.Match;

import com.dod.models.MatchState;

import com.dod.models.Player;

import com.dod.models.Point;

import com.dod.service.model.MatchStatus;

import org.junit.Assert;

import org.junit.Test;

import javax.ws.rs.client.\*;

import javax.ws.rs.core.MultivaluedHashMap;

import javax.ws.rs.core.MultivaluedMap;

import javax.ws.rs.core.Response;

import java.util.\*;

import static junit.framework.Assert.assertNotNull;

import static org.junit.Assert.assertEquals;

import static org.junit.Assert.assertNull;

/\*\*

\* Tests for MatchController

\* !NOTE! : As of right now these tests will ONLY work if you add a Symboolic Link directory (mklink /d in Win)

\* to the git root pointing to the Assets folder

\* This is becaues of project config issues... It's a crap solution I know.

\* Potential future solutions:

\* Add a run parameter that can override the assets folder path

\* Place a static variable somewhere that can be overridden by the Tests project, to hold the assets folder path.

\* Find a way to pass a variable into the HttpServer object that can be fed to the IOService

\*/

public class MatchControllerTests extends AuthenticatedClientTestBase {

@Test

public void shouldGiveCurrentMatchStatus() {

MatchStatus matchStatus = startNewMatch();

Invocation.Builder request = target.path("match/status").request();

request.cookie("JSESSIONID",sessionId);

MatchStatus response = request.get(MatchStatus.class);

assertNotNull(response);

matchesToRemove.add(matchStatus.getId());

assertEquals(matchStatus.getId(), response.getId());

assertEquals(testUsername, response.getPlayerNames()[0]);

}

@Test

public void whenPlayerHasNoOngoingMatchStatusShouldReturnNull() {

Invocation.Builder request = target.path("match/status").request();

request.cookie("JSESSIONID",sessionId);

MatchStatus response = request.get(MatchStatus.class);

assertNull(response);

}

@Test

public void shouldCreateNewMatch() {

MatchStatus matchStatus = startNewMatch();

matchesToRemove.add(matchStatus.getId());

assertNotNull(matchStatus.getId());

matchesToRemove.add(matchStatus.getId());

assertEquals(testUsername, matchStatus.getPlayerNames()[0]);

assertNotNull(MatchList.instance().getMatch(matchStatus.getId()));

}

@Test

public void shouldStartMatch() {

MatchStatus matchStatus = startNewMatch();

matchesToRemove.add(matchStatus.getId());

Invocation.Builder request = target.path("match/start").request();

request.cookie("JSESSIONID",sessionId);

Response result = request.post(null);

assertEquals(200, result.getStatus());

assertEquals(MatchState.Ingame, MatchList.instance().getMatch(matchStatus.getId()).getState());

}

@Test

public void joinShouldAddUserToMatch() {

//Add a match with the original test user

MatchStatus matchStatus = startNewMatch();

matchesToRemove.add(matchStatus.getId());

//Register another user that isn't already a member of the new match

String newTestUsername = UUID.randomUUID().toString();

String newUserSession = registerUserAndGetSessionId(newTestUsername);

Invocation.Builder request = target.path("match/join").request();

request.cookie("JSESSIONID",newUserSession);

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("matchId", matchStatus.getId().toString());

Response response = request.post(Entity.form(formData));

assertEquals(200, response.getStatus());

Assert.assertTrue(MatchList.instance().getMatch(matchStatus.getId()).hasCharacter(newTestUsername));

MatchStatus result = response.readEntity(MatchStatus.class);

assertNotNull(result);

assertEquals(matchStatus.getId(), result.getId());

}

//todo improve this test so that it doesn't break other tests if it fails

@Test

public void listShouldListAllLobbyingMatches() {

MatchList.instance().addMatch(new Match(null));

MatchList.instance().addMatch(new Match(null));

MatchList.instance().addMatch(new Match(null));

Invocation.Builder request = target.path("match/list").request();

request.cookie("JSESSIONID",sessionId);

Response result = request.get();

MatchStatus[] response = result.readEntity(MatchStatus[].class);

assertEquals(200, result.getStatus());

assertEquals(3, response.length);

matchesToRemove.add(response[0].getId());

matchesToRemove.add(response[1].getId());

matchesToRemove.add(response[2].getId());

}

@Test

public void leaveShouldRemovePlayerFromMatch() {

MatchStatus matchStatus = startNewMatch();

matchesToRemove.add(matchStatus.getId());

Invocation.Builder request = target.path("match/leave").request();

request.cookie("JSESSIONID",sessionId);

Response result = request.post(null);

assertEquals(200, result.getStatus());

assertEquals(false, MatchList.instance().getMatch(matchStatus.getId()).hasCharacter(testUsername));

}

}

* + 1. MyResourceTest.java

package dod.test.integration.service;

import javax.ws.rs.client.Client;

import javax.ws.rs.client.ClientBuilder;

import javax.ws.rs.client.WebTarget;

import com.dod.service.Main;

import org.glassfish.grizzly.http.server.HttpServer;

import org.junit.After;

import org.junit.Before;

import org.junit.Test;

import static org.junit.Assert.assertEquals;

public class MyResourceTest {

private HttpServer server;

private WebTarget target;

@Before

public void setUp() throws Exception {

// start the server

server = Main.startServer();

// create the client

Client c = ClientBuilder.newClient();

// uncomment the following line if you want to enable

// support for JSON in the client (you also have to uncomment

// dependency on jersey-media-json module in pom.xml and Main.startServer())

// --

// c.configuration().enable(new org.glassfish.jersey.media.json.JsonJaxbFeature());

target = c.target(Main.BASE\_URI);

}

@After

public void tearDown() throws Exception {

server.stop();

}

/\*\*

\* Test to see that the message "Got it!" is sent in the response.

\*/

@Test

public void testGetIt() {

String responseMsg = target.path("myresource").request().get(String.class);

assertEquals("Got it!", responseMsg);

}

}

* + 1. PlayerControllerTests.java

package dod.test.integration.service;

import com.dod.db.repositories.PlayerRepository;

import com.dod.models.Player;

import com.dod.service.Main;

import org.glassfish.grizzly.http.server.HttpServer;

import org.junit.After;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import javax.ws.rs.client.Client;

import javax.ws.rs.client.ClientBuilder;

import javax.ws.rs.client.Entity;

import javax.ws.rs.client.WebTarget;

import javax.ws.rs.core.MultivaluedHashMap;

import javax.ws.rs.core.MultivaluedMap;

import javax.ws.rs.core.Response;

import static org.junit.Assert.assertEquals;

import static org.junit.Assert.assertNotNull;

/\*\*

\* Tests the PlayerController

\*/

public class PlayerControllerTests {

private HttpServer server;

private WebTarget target;

private PlayerRepository repository;

private final String testUsername = "testUsername";

private final String testNonExistantusername = "testNonexistantUsername";

private final String testPassword = "testPassword";

@Before

public void setUp() {

server = Main.startServer();

Client c = ClientBuilder.newClient();

repository = new PlayerRepository();

target = c.target(Main.BASE\_URI);

}

@After

public void tearDown() throws Exception {

server.stop();

try {

repository.delete(new Player(testUsername));

}

catch(Exception e) {

e.printStackTrace();

}

}

@Test

public void whenDetailsAreValidShouldRegisterPlayer() throws Exception {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testUsername);

formData.add("password", testPassword);

Response response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals("", response.readEntity(String.class));

assertEquals(200, response.getStatus());

assertNotNull(repository.get(new Player(testUsername)));

}

@Test

public void whenUsernameEmptyRegisterShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", "");

formData.add("password", testPassword);

Response response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenPasswordEmptyRegisterShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testUsername);

formData.add("password", "");

Response response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenPasswordTooLongRegisterShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testUsername);

formData.add("password", generateStringOfSize(257));

Response response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenUsernameTooLongRegisterShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", generateStringOfSize(256));

formData.add("password", testPassword);

Response response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenUsernameAlreadyTakenRegisterShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testUsername);

formData.add("password", testPassword);

Response response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals(200, response.getStatus());

response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenDetailsValidLoginShouldReturnBlankOkStatus() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testUsername);

formData.add("password", testPassword);

//Create player before trying to login

Response response = target.path("player/register")

.request()

.post(Entity.form(formData));

assertEquals(200, response.getStatus());

response = target.path("player/login")

.request()

.post(Entity.form(formData));

Assert.assertEquals(200, response.getStatus());

assertEquals("", response.readEntity(String.class));

}

@Test

public void whenUsernameEmptyLoginShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", "");

formData.add("password", testPassword);

Response response = target.path("player/login")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenPasswordEmptyLoginShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testUsername);

formData.add("password", "");

Response response = target.path("player/login")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenPasswordTooLongLoginShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testUsername);

formData.add("password", generateStringOfSize(256));

Response response = target.path("player/login")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

@Test

public void whenUsernameTooLongLoginShouldReturnValidationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", generateStringOfSize(256));

formData.add("password", testPassword);

Response response = target.path("player/login")

.request()

.post(Entity.form(formData));

assertEquals(400, response.getStatus());

}

/\*\*

\* We don't want to return validation here- we don't want to inform a malicious user

\* when they do or don't randomly guess a correct username

\*/

@Test

public void whenUsernameDoesNotExistLoginShouldReturnBlankAuthorisationError() {

MultivaluedMap<String, String> formData = new MultivaluedHashMap<String, String>();

formData.add("username", testNonExistantusername);

formData.add("password", testPassword);

Response response = target.path("player/login")

.request()

.post(Entity.form(formData));

assertEquals(403, response.getStatus());

assertEquals("", response.readEntity(String.class));

}

private String generateStringOfSize(int size) {

String result = "";

for(int i = 0; i < size; i++) {

result += "z";

}

return result;

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\tests\com\dod\test\unit\domain\game
     1. MatchListTests.java

package dod.test.unit.domain.game;

import com.dod.game.MatchList;

import com.dod.models.Match;

import com.dod.models.MatchState;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import java.util.List;

import java.util.UUID;

import static org.mockito.Mockito.\*;

/\*\*

\* Tests for MatchList

\*/

public class MatchListTests {

private final String testUsername = "testUsername";

private MatchList matchList;

@Before

public void Setup() {

matchList = new MatchList();

}

@Test

public void shouldGetLobbyingMatches() {

Match lobbyingMatch = mock(Match.class);

Match ingameMatch = mock(Match.class);

Match anotherIngameMatch = mock(Match.class);

when(lobbyingMatch.getState()).thenReturn(MatchState.Lobbying);

when(ingameMatch.getState()).thenReturn(MatchState.Ingame);

when(anotherIngameMatch.getState()).thenReturn(MatchState.Ingame);

matchList.addMatch(lobbyingMatch);

matchList.addMatch(ingameMatch);

matchList.addMatch(anotherIngameMatch);

List<Match> result = matchList.getLobbyingMatches();

Assert.assertEquals(1, result.size());

Assert.assertEquals(lobbyingMatch, result.get(0));

}

@Test

public void shouldGetMatchById() {

Match matchOne = mock(Match.class);

Match matchTwo = mock(Match.class);

UUID idOne = UUID.randomUUID();

UUID idTwo = UUID.randomUUID();

when(matchOne.getId()).thenReturn(idOne);

when(matchTwo.getId()).thenReturn(idTwo);

matchList.addMatch(matchOne);

matchList.addMatch(matchTwo);

Match result = matchList.getMatch(idOne);

Assert.assertEquals(matchOne, result);

}

@Test

public void shouldGetMatchForPlayer() {

Match match = mock(Match.class);

when(match.hasCharacter(testUsername)).thenReturn(true);

matchList.addMatch(match);

Match result = matchList.getMatchForPlayer(testUsername);

Assert.assertEquals(match,result);

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\tests\com\dod\test\unit\domain\model
     1. MatchTests.java

package dod.test.unit.domain.model;

import com.dod.models.\*;

import com.dod.models.Character;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import static org.mockito.Mockito.\*;

/\*\*

\* Tests some of the non-trivial Match functions

\*/

public class MatchTests {

Map map;

Match match;

Player player;

private final String testUsername = "testUsername";

@Before

public void Setup() {

map = mock(Map.class);

match = new Match(map);

player = mock(Player.class);

when(player.getUsername()).thenReturn(testUsername);

}

@Test

public void shouldAddCharacter() {

match.addCharacter(player, new Point(0,0));

Assert.assertTrue(match.hasCharacter(testUsername));

}

@Test

public void whenThereAreMultipleCharactersShouldGetCorrectCharacter() {

Player anotherPlayer = mock(Player.class);

Player anotherAnotherPlayer = mock(Player.class);

when(anotherPlayer.getUsername()).thenReturn("anotherTestUsername");

when(anotherAnotherPlayer.getUsername()).thenReturn("anotherAnotherTestUsername");

match.addCharacter(player, new Point(0,0));

match.addCharacter(anotherPlayer, new Point(0,0));

match.addCharacter(anotherAnotherPlayer, new Point(0,0));

Assert.assertEquals(player, match.getCharacter(testUsername).getPlayer());

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\tests\com\dod\test\unit\service
     1. AuthenticationServiceTests.java

package dod.test.unit.service;

import com.dod.db.repositories.IPlayerRepository;

import com.dod.models.Player;

import com.dod.service.model.LoginModel;

import com.dod.service.service.AuthenticationService;

import com.dod.service.service.IAuthenticationService;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import static org.mockito.Mockito.\*;

/\*\*

\* Tests for the AuthenticationService

\*/

public class AuthenticationServiceTests {

private IAuthenticationService service;

private IPlayerRepository repository;

private final String testPlayername = "test";

private final String testPassword = "testPassword";

private final String incorrectTestPassword = "incorrectTestPassword";

//These two are calculated by the hashing algorithm from testPassword so should always work

private final byte[] testSalt = new byte[] {-77,14,44,-103,-37,0,60,-41,54,60,-24,-69,-10,-14,101,-17,101,

95,16,50,60,81,34,-90,-85,123,88,88,-18,71,80,93};

private final String testHashedPassword =

"sw4smdsAPNc2POi79vJl72VfEDI8USKmq3tYWO5HUF0=vNgKzsYRou5lhm4l8i7pFYsYeqeicv/5O5KeplB2rLY=";

@Before

public void Setup() throws Exception {

repository = mock(IPlayerRepository.class);

service = new AuthenticationService(repository);

}

@Test

public void whenUsernameDoesNotExistRegisterShouldCreatePlayerAndReturnTrue() throws Exception {

when(repository.get(any(Player.class))).thenReturn(null);

boolean result = service.Register(new LoginModel(testPlayername, testPassword));

verify(repository).insert(any(Player.class));

Assert.assertEquals(true, result);

}

@Test

public void whenUsernameDoesExistRegisterShouldReturnFalse() throws Exception {

when(repository.get(any(Player.class))).thenReturn(new Player(testPlayername, testPassword, new byte[0]));

boolean result = service.Register(new LoginModel(testPlayername, testPassword));

Assert.assertEquals(false, result);

}

@Test

public void whenDetailsAreValidLoginShouldReturnTrue() throws Exception {

when(repository.get(any(Player.class))).thenReturn(new Player(testPlayername, testHashedPassword, testSalt));

boolean result = service.Login(new LoginModel(testPlayername, testPassword));

Assert.assertEquals(true, result);

}

@Test

public void whenPlayerDoesNotExistLoginShouldReturnFalse() throws Exception {

when(repository.get(any(Player.class))).thenReturn(null);

boolean result = service.Login(new LoginModel(testPlayername, testPassword));

Assert.assertEquals(false, result);

}

@Test

public void whenPasswordIsWrongLoginShouldReturnFalse() throws Exception {

when(repository.get(any(Player.class))).thenReturn(new Player(testPlayername, testHashedPassword, testSalt));

boolean result = service.Login(new LoginModel(testPlayername, incorrectTestPassword));

Assert.assertEquals(false, result);

}

}

* + 1. IOServiceTests.java

package dod.test.unit.service;

import com.dod.service.constant.Assets;

import com.dod.service.service.IIOService;

import com.dod.service.service.IOService;

import org.json.simple.JSONObject;

import org.json.simple.parser.ParseException;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import java.io.IOException;

/\*\*

\* Unit tests for the IOService

\*/

public class IOServiceTests {

IIOService service;

private String testAssetPath = "\\test\\test.asset";

private String expectedTestAssetResult = "testasset :)";

private String nonExistantTestAssetPath = "nonexistant.asset";

private String testJsonPath = "\\test\\test.json";

@Before

public void Setup() {

service = new IOService(".\\assets");

}

@Test

public void shouldGetAssetAtPath() {

try {

String result = service.getString(testAssetPath);

Assert.assertEquals(expectedTestAssetResult, result);

}

catch(IOException e) {

Assert.fail("Unexepected exception thrown by service:" + e.toString());

e.printStackTrace();

}

}

@Test

public void whenPathIsInvalidShouldThrowException() {

try {

String result = service.getString(nonExistantTestAssetPath);

Assert.fail("Service did not throw exception when expected.");

}

catch(IOException e) {

//Pass!

}

}

@Test

public void shouldParseJsonFile() {

try {

JSONObject result = service.getJsonObject(testJsonPath);

Assert.assertTrue(result.containsKey("id"));

}

catch(Exception e) {

Assert.fail("Unexepected exception thrown by service:" + e.toString());

e.printStackTrace();

}

}

@Test

public void whenJsonIsInvalidShouldThrownParseException() {

try {

JSONObject result = service.getJsonObject(testAssetPath);

Assert.fail("Service did not throw exception when expected.");

}

catch(ParseException e) {

//Pass!

}

catch(Exception e) {

Assert.fail("Unexepected exception thrown by service:" + e.toString());

e.printStackTrace();

}

}

}

* + 1. MatchServiceTests.java

package dod.test.unit.service;

import com.dod.db.repositories.IPlayerRepository;

import com.dod.game.IMatchList;

import com.dod.game.MatchList;

import com.dod.models.\*;

import com.dod.service.model.MatchStatus;

import com.dod.service.service.IIOService;

import com.dod.service.service.IOService;

import com.dod.service.service.IParseService;

import com.dod.service.service.MatchService;

import org.json.simple.JSONObject;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import org.mockito.Mock;

import org.mockito.Mockito;

import java.sql.SQLException;

import java.util.UUID;

import static org.junit.Assert.fail;

import static org.mockito.Mockito.\*;

/\*\*

\* Tests for MatchService

\*/

public class MatchServiceTests {

MatchService service;

IIOService ioServiceMock;

IParseService parseServiceMock;

IPlayerRepository playerRepositoryMock;

IMatchList matchListSpy;

Map mapMock;

Player playerMock;

private final int testLevelNo = 0;

private final String testLevelPath = "/maps/level0.json";

private final String testUsername = "testUsername";

private final Point testPoint = new Point(0,0);

private final int testNumberOfCoins = 10;

@Before

public void setup() {

ioServiceMock = mock(IOService.class);

parseServiceMock = mock(IParseService.class);

playerRepositoryMock = mock(IPlayerRepository.class);

matchListSpy = spy(new MatchList());

mapMock = mock(Map.class);

playerMock = mock(Player.class);

when(playerMock.getUsername()).thenReturn(testUsername);

service = new MatchService(ioServiceMock, parseServiceMock, playerRepositoryMock, matchListSpy);

}

@Test

public void shouldCreateMatch() throws Exception {

when(ioServiceMock.getJsonObject(any(String.class))).thenReturn(new JSONObject());

when(parseServiceMock.parseMap(any(JSONObject.class))).thenReturn(mapMock);

when(playerRepositoryMock.get(any(Player.class))).thenReturn(new Player(testUsername));

when(mapMock.getRandomFreeTilePoint()).thenReturn(testPoint);

when(mapMock.getCoinNo()).thenReturn(testNumberOfCoins);

when(mapMock.getTile(any(Point.class))).thenReturn(new Tile(0));

MatchStatus result = service.createMatch(testUsername,testLevelNo);

verify(matchListSpy).addMatch(any(Match.class));

Assert.assertTrue(matchListSpy.playerHasMatch(testUsername));

Assert.assertEquals(result.getId(), matchListSpy.getMatchForPlayer(testUsername).getId());

Assert.assertEquals(testPoint,

matchListSpy.getMatchForPlayer(testUsername).getCharacter(testUsername).getPosition());

}

@Test

public void WhenCreatingMatchShouldAssignRandomCharacterAndCoinPositions() throws Exception {

when(ioServiceMock.getJsonObject(any(String.class))).thenReturn(new JSONObject());

when(parseServiceMock.parseMap(any(JSONObject.class))).thenReturn(mapMock);

when(playerRepositoryMock.get(any(Player.class))).thenReturn(new Player(testUsername));

when(mapMock.getRandomFreeTilePoint()).thenReturn(testPoint);

when(mapMock.getCoinNo()).thenReturn(testNumberOfCoins);

when(mapMock.getTile(any(Point.class))).thenReturn(new Tile(0));

MatchStatus result = service.createMatch(testUsername,testLevelNo);

verify(mapMock, times(testNumberOfCoins + 1)).getRandomFreeTilePoint();

Assert.assertEquals(testPoint,

matchListSpy.getMatchForPlayer(testUsername).getCharacter(testUsername).getPosition());

}

@Test

public void shouldStartMatch() {

Match matchSpy = spy(new Match(null));

matchListSpy.addMatch(matchSpy);

matchSpy.addCharacter(playerMock, testPoint);

service.startMatch(playerMock);

verify(matchListSpy, times(1)).getMatchForPlayer(testUsername);

verify(matchSpy, times(1)).setState(MatchState.Ingame);

Assert.assertEquals(MatchState.Ingame, matchSpy.getState());

}

@Test

public void shouldGetMatchStatus() {

Match matchSpy = spy(new Match(null));

matchSpy.addCharacter(playerMock, testPoint);

matchListSpy.addMatch(matchSpy);

MatchStatus result = service.getStatus(playerMock);

verify(playerMock, atLeastOnce()).getUsername();

verify(matchListSpy, times(1)).playerHasMatch(testUsername);

Assert.assertEquals(matchSpy.getId(), result.getId());

}

@Test

public void whenPlayerHasNoMatchGetStatusShouldReturnNull() {

MatchStatus result = service.getStatus(playerMock);

Assert.assertNull(result);

}

@Test

public void leaveMatchShouldRemoveCharacterFromMatch() {

Match matchSpy = spy(new Match(null));

matchSpy.addCharacter(playerMock, testPoint);

matchListSpy.addMatch(matchSpy);

service.leaveMatch(playerMock);

Assert.assertNull(matchSpy.getCharacter(testUsername));

}

@Test

public void endMatchShouldRemoveMatchFromMatchList() {

Match matchSpy = spy(new Match(null));

matchSpy.addCharacter(playerMock, testPoint);

matchListSpy.addMatch(matchSpy);

service.endMatch(playerMock);

verify(matchListSpy, times(1)).removeMatch(matchSpy.getId());

Assert.assertNull(matchListSpy.getMatchForPlayer(testUsername));

}

@Test

public void joinMatchShoulAddPlayerToMatch() throws Exception {

when(mapMock.getRandomFreeTilePoint()).thenReturn(testPoint);

when(playerRepositoryMock.get(any(Player.class))).thenReturn(playerMock);

Match matchSpy = spy(new Match(mapMock));

matchListSpy.addMatch(matchSpy);

service.joinMatch(playerMock, matchSpy.getId());

Assert.assertTrue(matchSpy.hasCharacter(testUsername));

}

@Test

public void whenSqlExceptionoccursJoinMatchShouldThrowException() throws Exception {

when(mapMock.getRandomFreeTilePoint()).thenReturn(testPoint);

when(playerRepositoryMock.get(any(Player.class))).thenThrow(new SQLException());

Match matchSpy = spy(new Match(mapMock));

matchListSpy.addMatch(matchSpy);

try {

service.joinMatch(playerMock, matchSpy.getId());

fail();

}

catch(SQLException e) {

//success!

}

catch(Exception e) {

fail();

}

}

@Test

public void getLobbyingMatchesShouldOnlyReturnMatchesInLobbyState() {

Match lobbyingMatchMock = mock(Match.class);

when(lobbyingMatchMock.getState()).thenReturn(MatchState.Lobbying);

Match inGameMatchMock = mock(Match.class);

when(inGameMatchMock.getState()).thenReturn(MatchState.Ingame);

UUID testId = UUID.randomUUID();

when(lobbyingMatchMock.getId()).thenReturn(testId);

matchListSpy.addMatch(lobbyingMatchMock);

matchListSpy.addMatch(inGameMatchMock);

MatchStatus[] result = service.getLobbyingMatches();

Assert.assertEquals(1, result.length);

Assert.assertEquals(testId, result[0].getId());

}

@Test

public void whenNoMatchesInLobbyStateGetLobbyingMatchesShouldReturnEmptyArray() {

MatchStatus[] result = service.getLobbyingMatches();

Assert.assertNotNull(result);

Assert.assertEquals(0, result.length);

}

}

* + 1. MovementTests.java

package dod.test.unit.service;

import com.dod.models.Character;

import com.dod.models.Map;

import com.dod.models.Player;

import com.dod.models.Point;

import com.dod.service.service.IOService;

import com.dod.service.service.MovementService;

import com.dod.service.service.ParseService;

import org.json.simple.JSONObject;

import org.json.simple.parser.ParseException;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import java.io.IOException;

/\*\*

\* Created by tasos on 11/12/2016.

\*/

public class MovementTests {

private IOService ioService;

private ParseService parService;

private Map dungeonMap;

private Character pChar, pChar2;

private JSONObject jobject;

@Before

public void Setup() {

ioService = new IOService(".\\assets");

try {

jobject = ioService.getJsonObject("\\maps\\Level1.json");

} catch (IOException e) {

e.printStackTrace();

} catch (ParseException e) {

e.printStackTrace();

}

parService = new ParseService();

dungeonMap = parService.parseMap(jobject);

pChar = new Character(new Point(4, 4), new Player("test"));

pChar2 = new Character(new Point(3, 1), new Player("dadasda"));

}

@Test

public void shouldReturnTrueIfPlayerMovedToRightTile() throws Exception {

MovementService moveService = new MovementService();

Assert.assertTrue(moveService.Move("D", new Player("test")).equals(new Point(5,4)));

}

@Test

public void shouldReturnFalseIfPlayerMovedToRightTile() throws Exception {

MovementService moveService = new MovementService();

Assert.assertFalse(moveService.Move("D", new Player("test")).equals(new Point(4,4)));

}

@Test

public void shouldReturnFalseIfPlayerMovesToWall() throws Exception {

MovementService moveService = new MovementService();

Assert.assertFalse(moveService.Move("D", new Player("test")).equals(new Point(3,0)));

}

@Test

public void shouldReturnTrueIfPlayerCantMoveToWall() throws Exception {

MovementService moveService = new MovementService();

Assert.assertFalse(moveService.Move("D", new Player("test")).equals(new Point(3,1)));

}

}

* + 1. ParseServiceTests.java

package dod.test.unit.service;

import com.dod.models.Map;

import com.dod.models.Point;

import com.dod.service.service.IParseService;

import com.dod.service.service.ParseService;

import org.json.simple.JSONObject;

import org.json.simple.parser.JSONParser;

import org.json.simple.parser.ParseException;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

/\*\*

\* Tests for the ParseService

\*/

public class ParseServiceTests {

private IParseService service;

private JSONParser parser;

private String validJson =

"{ \"testLev\": { \"id\":\"test\", \"name\":\"test\",\"coin\_num\":6, \"coin\_win\":5, \"Width\" : 26, \"Height\" : 18, \"tiles\": [" +

"{\"id\": \"tile\_wall\",\"name\":\"wall\",\"type\":0,\"visibility\":true,\"touchable\":false}," +

"{\"id\": \"tile\_path\",\"name\":\"path\",\"type\":1,\"visibility\":true,\"touchable\":true}," +

"{\"id\": \"tile\_path2\",\"name\":\"path2\",\"type\":2,\"visibility\":true,\"touchable\":true}" +

"], \"map\":[ [{\"type\":0},{\"type\":0},{\"type\":0},{\"type\":0}], " +

"[{\"type\":0},{\"type\":0},{\"type\":0},{\"type\":0}]] } }";

private String invalidJson =

"{ \"testLev\": { \"id\":\"test\", \"tiles\": [" +

"{\"id\": \"tile\_wall\",\"name\":\"wall\",\"type\":0,\"visibility\":true,\"touchable\":false}," +

"{\"id\": \"tile\_path\",\"name\":\"path\",\"type\":1,\"visibility\":true,\"touchable\":true}," +

"{\"id\": \"tile\_path2\",\"name\":\"path2\",\"type\":2,\"visibility\":true,\"touchable\":true}" +

"], \"map\":[ [{\"type\":0},{\"type\":0},{\"type\":0},{\"type\":0}], " +

"[{\"type\":0},{\"type\":0},{\"type\":0},{\"type\":0}]] } }";

@Before

public void Setup() {

service = new ParseService();

parser = new JSONParser();

}

@Test

public void shouldGenerateMapFromJson() {

try {

JSONObject input = (JSONObject) parser.parse(validJson);

Map result = service.parseMap(input);

Assert.assertEquals(5, result.getCoinWin());

Assert.assertEquals(6, result.getCoinNo());

Assert.assertEquals("test", result.getName());

for(int x = 0; x < 4; x++) {

for(int y = 0; y < 2; y++) {

Assert.assertEquals(0, result.getTile(new Point(x,y)).getType());

}

}

}

catch(Exception e) {

e.printStackTrace();

Assert.fail("Unexepected exception thrown by service:" + e.toString());

}

}

@Test

public void whenJsonIsInvalidShouldThrowException() {

try {

JSONObject input = (JSONObject) parser.parse(invalidJson);

Map result = service.parseMap(input);

Assert.fail("Test did not throw expected exception.");

}

catch(NullPointerException e) {

//Passed!

}

catch(Exception e) {

Assert.fail("Unexepected exception thrown by service:" + e.toString());

e.printStackTrace();

}

}

}

* + 1. StateServiceTests.java

package dod.test.unit.service;

import com.dod.game.MatchList;

import com.dod.models.\*;

import com.dod.service.model.GameStateModel;

import com.dod.service.service.IOService;

import com.dod.service.service.IVisibilityService;

import com.dod.service.service.ParseService;

import com.dod.service.service.StateService;

import org.json.simple.JSONObject;

import org.json.simple.parser.ParseException;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import java.io.IOException;

import static org.junit.Assert.fail;

import static org.mockito.Mockito.\*;

/\*\*

\* Tests for the StateService.

\*/

public class StateServiceTests {

private IVisibilityService visibilityServiceMock;

private MatchList matchListMock;

private StateService stateService;

private Map map;

private Point testPoint;

private Match match;

private String testUsername = "testUsername";

@Before

public void Setup() {

visibilityServiceMock = mock(IVisibilityService.class);

matchListMock = mock(MatchList.class);

stateService = new StateService(visibilityServiceMock, matchListMock);

IOService ioService = new IOService();

JSONObject jobject = null;

try {

jobject = ioService.getJsonObject("\\maps\\level1.json");

} catch (IOException e) {

e.printStackTrace();

} catch (ParseException e) {

e.printStackTrace();

}

ParseService parService = new ParseService();

map = parService.parseMap(jobject);

match = new Match(map);

testPoint = map.getRandomFreeTilePoint();

match.addCharacter(new Player(testUsername), testPoint);

when(matchListMock.getMatchForPlayer(testUsername)).thenReturn(match);

}

// @Test

// public void shouldGetCurrentStateOfGame() {

// GameStateModel result = stateService.GetState(new Player(testUsername));

// when(visibilityServiceMock.getVisibleTilesForCharacter(map, match.getCharacter(testUsername))).thenReturn(map);

//

// Assert.assertEquals(testPoint, result.getCharacters()[0].getPosition());

// Assert.assertEquals(map.getWidth() \* map.getHeight(), result.getTiles().length);

// Assert.assertEquals(1, result.getCharacters().length);

// }

//

// @Test

// public void shouldOnlyReturnVisibleTiles() {

// when(visibilityServiceMock.getVisibleTilesForCharacter(map, match.getCharacter(testUsername))).thenReturn(null);

// //todo

// fail();

// }

}

* + 1. VisibilityServiceTest.java

package dod.test.unit.service;

import com.dod.models.Map;

import com.dod.models.Player;

import com.dod.models.Point;

import com.dod.models.Character;

import com.dod.service.service.IOService;

import com.dod.service.service.ParseService;

import com.dod.service.service.VisibilityService;

import org.json.simple.JSONObject;

import org.json.simple.parser.ParseException;

import org.junit.Assert;

import org.junit.Before;

import org.junit.Test;

import java.io.IOException;

/\*\*

\* Created by tasos on 7/12/2016.

\*/

public class VisibilityServiceTest {

private IOService ioService;

private ParseService parService;

private Map dungeonMap;

private JSONObject jobject;

private Character pChar;

private Map visibleMap;

@Before

public void Setup() {

ioService = new IOService(".\\assets");

visibleMap = new Map("level1", 30, 20, 26, 18, new Point(26, 18));

try {

jobject = ioService.getJsonObject("\\maps\\Level1.json");

} catch (IOException e) {

e.printStackTrace();

} catch (ParseException e) {

e.printStackTrace();

}

parService = new ParseService();

dungeonMap = parService.parseMap(jobject);

pChar = new Character(new Point(4, 4), new Player("test"));

}

@Test

public void shouldReturnTrueIfTheTile34IsVisible() {

VisibilityService vService = new VisibilityService();

visibleMap = vService.createVisibleMap(dungeonMap, pChar);

Assert.assertTrue(visibleMap.getTile(new Point(3, 4)).isVisible());

}

@Test

public void shouldReturnFalseIfTheTile77IsNotVisible() {

VisibilityService vService = new VisibilityService();

visibleMap = vService.createVisibleMap(dungeonMap, pChar);

Assert.assertFalse(visibleMap.getTile(new Point(7,7)).isVisible());

}

}

* 1. DungeonOfDooom-master\Sourcecode\project\src\tests
     1. pom.xml

<?xml version="1.0" encoding="UTF-8"?>

<project xmlns="http://maven.apache.org/POM/4.0.0"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 http://maven.apache.org/xsd/maven-4.0.0.xsd">

<modelVersion>4.0.0</modelVersion>

<groupId>dungeon-of-doom</groupId>

<artifactId>dungoen-of-doom-tests</artifactId>

<version>1.0</version>

<dependencies>

<!-- https://mvnrepository.com/artifact/org.mockito/mockito-all -->

<dependency>

<groupId>org.mockito</groupId>

<artifactId>mockito-all</artifactId>

<version>1.9.5</version>

</dependency>

<dependency>

<groupId>dungeon-of-doom</groupId>

<artifactId>dungeon-of-doom-service</artifactId>

<version>1.0</version>

</dependency>

</dependencies>

</project>

1. Project Diaries
   1. Mattsi Jansky:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| **31s Oct** | Attended first group meeting |  | Attended second group meeting |  |  | Reviewed lecture slides/notes and spec in prep for Monday meet | Reviewed lecture slides/notes and spec in prep for Monday meet |
| **7th Nov** | Attended group meeting  Gave presentation on findings  Worked with group on requirements analysis Introduced team to Trello & setup backlog/sprint boards  Kept meeting notes  Proposed choosing leader | Worked with Tassos to produce several usecases | Attended group meeting  Worked with group on CRC cards  Added some tasks to Trello |  |  |  |  |
| **14th Nov** | Attended group meeting  Worked with group on CRCs and task estimations | Produced timescale document, to be discussed with team Weds. | Attended team meeting  Introduced team to timescale document, made final changes to it. |  | Worked with Tassos on database creation, basic project layout and interfacing with database. |  |  |
| **21st Nov** | Attended team meeting  Worked on UML |  | Attended team meeting |  |  | Worked on Test Plan and researched Java API frameworks | Worked on Test Plan and researched Java API frameworks |
| **28th Nov** | Attended team meeting  Arranged next Sprint Created all remaining Trello cards and filled in various technical details of cards  Had meeting with Julian  Tested Java API framework | Setup Jersey API framework  Refactored project structure  Worked with Tassos to setup skeleton of project ie blank endpoints, services and tests | Worked with Qian to: implement IOservice, add JSON framework to project, start JSON service (implement tests) |  | Worked with Qian to implement JSON service |  |  |
| **5th Dec** | Worked with Selin and Arya to review their work on the login/registration card  Picked up the login/registration card and started work on it  Set up Sprint 5 in Trello  Attended team meeting  Attended team meeting with customer | Implemented AuthorisationService  Fixed web service setup issues  Implemented PlayerController  Added validation to web service  Started client-server interaction | Continued client-server interaction, implemented login/registration from client side  Attended team meeting  Implemented state memory architecture (MatchList)  Began implementing MatchService/ MatchController | Continued implementing MatchService/ MatchController  Improved state memory architecture  Implemented JSON support in service  Implemented JSON support in Java test client to test endpoints (and later for bot?) | Finished implementing MatchService / MatchController  Implemented StateService (except for visibility)  Implemented “Game/Status” endpoint  Implemented basic client lobbying | Implemented match details, joining a match, starting a new match in client  Implemented starting a match in client  Implemented basic rendering in client based on Tassos’ render code, added players to display | Implemented game loop & communication  Implemented automatic refresh for lobby list & match status  Improved graphics  Added functionality to leave a game, in server and client  Added StateService use of VisibilityService  Implemented basic use of visible tiles in client  Began to implement bot project Began to merge client design with prototype |
| **12th Dec** | Finished merging functional prototype with client design  Improved the client and fixed bugs  Added ability to load different levels  Fixed a lot of bugs  Added endgame state  Implemented graphical visibility in the client  Implemented scoreboard controller/action in server  Implemented scoreboard in client | Fixed a lot of bugs  Implemented simultaneous start between players  Implemented a very basic bot.  Started working UML diagrams version 2 | Continued working on and completed UML v2 diagrams.  Improved doc1 and added Word styling / auto contents etc.  Added Javadoc comments to Java domain library and service | Fixed doc1 merge conflict  Improved, fixed and refactored doc1 with Tassos & team  Filled team questionnaire w/ team  Merged various documentation components into doc1  Added bot Javadoc comments  Wrote maintenance guide overviews and compiled javadocs together | Wrote Javascript maintenance guide. Added acknowledgements. Fixed styling for references etc.  Worked on doc2 formatting styling etc with Selin and Tassos. |  |  |

* 1. Anastasios Gemtos:

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| **Date** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| **31s Oct** | Team Meeting  (sprint 0) |  | Team Meeting |  |  |  |  |
| **7th Nov** | Team Meeting (sprint 1) | I worked on use cases with Mattsi about player actions in the dungeon. | Team Meeting (use cases, CRC) |  |  |  |  |
| **14th Nov** | Team Meeting (CRC, Task estimation)  (sprint 2) |  | Team Meeting  (Created UML classes and discussed about system architecture) |  | Worked with Mattsi on setting up the database. We implemented some functionality based on models from UML classes |  |  |
| **21st Nov** | Team Meeting  (Completed the UML classes both in client and server)  (sprint 3) |  | Team Meeting  (Reviewed all the documentation so far) |  |  |  | Updated the requirement analysis and the use cases on our documents. |
| **28th Nov** | Team Meeting  (worked on a document about document style and code style conventions, created draft overview of our work so far, meeting with customer)  (sprint 4) | Worked with Mattsi on the skeleton of web server’s framework. | Team Meeting  (Worked with Xiao on database) | Completed the database functionality. | Worked on rendering the dungeon’s map on web browser. | Completed the rendering of dungeon’s map on web browser. |  |
| **5th Dec** | Team Meeting  (Meeting with Julian to discuss our progress)  (sprint 5) | Worked on Character model. | Worked with Qian on Visibility on the server-side. | Completed the Visibility service to meet unit tests requirements. |  |  | Worked with Arya on Movement service. |
| **12th Dec** | Added coin collection functionality on movement service. Worked on movement on client side. Updated documentation. Team Meeting (with Julian to show him our playable demo).  (sprint 6) | Worked with Selin on how the score is calculated.  Worked with Arya on movement service.  Worked on test cases.  I did minor changes on the code to fix bugs. | I worked on adding textures to our project to look better.  I worked on final version of requirement analysis. |  |  |  |  |

* 1. Selin Kutlamis:

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| **Date** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| **31s Oct** | First group meeting, understand the document of project |  | Second group meeting,  Understand the document of project |  |  |  | Prep for Monday meet |
| **7th Nov** | Team meeting  Worked with group on requirements analysis Meet Trello  Brainstorming, Discussion  Add meeting notes  Choose leader |  | Attended group meeting  Worked with group on use cases |  |  |  |  |
| **14th Nov** | Group meeting  Worked with group on CRCs and task estimations |  | Write timescales Pair Groups are defined |  |  | Preparation for Uml diagrams | Investigate layout design |
| **21st Nov** | Uml diagrams creation |  | Menu/Login/Score Layout  Worked with Pair Programmer Arya | Customer Requirements /Reader’s Guide documentation | Customer Requirements /Reader’s Guide documentation | Creation of mock up | Creation of uml diagrams and continued to document checking. |
| **28th Nov** | Weekly meeting and discussion |  | Sprint meeting |  | Investigation on login and registration with MVC  Work with pair programmer Arya | Investigation on login and registration restful api | Investigation on login and registration restful api |
| **5th Dec** | Working with pair programmers Mattsi,Arya on login and registration  Meeting with customer |  | Sprint meeting discussion  Produce documentation layout |  | Work on documentation | Work on documentation | Work on documentation  Score Interaction investigation |
| **12th Dec** | Team meeting  Writing Document 1 and document2  Meeting with customer | Worked with the Pair Programmer Tasos on score/timer interaction | Team Meeting  Writing Document 1 and document2 |  |  |  |  |

* 1. Qian Zhou :

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| **Date** | **Mondy** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| **31s Oct** | Team Meeting |  | Team Meeting |  |  |  |  |
| **7th Nov** | Team Meeting (sprint0) – worked with group on the requirements analysis. | Worked with Xiao on the use cases about the user interaction before playing the game. | Team Meeting – worked with group on the use cases and CRC cards. |  |  |  |  |
| **14th Nov** | Team Meeting – worked with group on the CRC cards and task estimations. |  | Team Meeting - worked with group on the UML classes and system architecture. Discuss about the timescale and divided the tasks for pair programming. |  | Worked on the design of the map interface. | Worked on the design of the map interface. |  |
| **21st Nov** | Team Meeting - worked with group on the UML classes both in client and server. |  | Team Meeting – Worked on the documentation. |  | Create the Json files for different levels of the dungeon. | Create the Json files for the maps. Write the documentation about the Json files. |  |
| **28th Nov** | Team Meeting - separate the tasks in next sprint, had a meeting with Julian.  Worked with Xiao on determining the final design of our maps and finished the Json file. | Create and add two classes - Map and Tile to the project. | Worked with Mattis to implement the IOservice, add Json Framework to project, start Json service (including tests). |  | Worked with Mattis to implement Json service (parse map Json, Model map in code). |  |  |
| **5th Dec** | Team Meeting – separate the tasks in Sprint 5. |  | Worked with Tasos on the visibility in server. |  |  |  |  |
| **12th Dec** | Team Meeting – list the unfinished work both for codes and documentation, and arrange the tasks in the final week. | Worked on the interface part of the documentation. | Worked on the documentation. |  |  |  |  |

* 1. Xiao Fan:

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| **Date** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| **31s Oct** | Team Meeting |  | Team Meeting |  |  |  |  |
| **7th Nov** | Team Meeting (sprint 1) | I worked on a use case with Qian about log in and menu design in the dungeon. | Team Meeting (use cases, CRC)  (I took the Meeting Minutes) |  |  |  |  |
| **14th Nov** | Team Meeting (the rest of CRC)  (sprint 2) |  | Team Meeting (Task estimation) |  |  |  |  |
| **21st Nov** | Team Meeting (UML, Diagram)  (sprint 3) |  | Team Meeting (Client UML, Diagram, documentation tasks distribution) |  |  | Learn JSON | Dungeon interface |
| **28th Nov** | Team Meeting  Create JSON file about the interface of Dungeon(Qian)  (sprint 4) |  | Creating database  Build play model,  Connect SQL with JAVA(Tasos), Building web service framework |  |  |  |  |
| **5th Dec** | Researching web game named Forestry maze |  |  |  |  |  |  |
| **2th Dec** | Team meeting (found the unfinished work and divided to every team member, have discuss with Julian) | Finding the reference about UML Diagram, Writing documentation about UML Diagram | Writing documentation about UML Diagram |  |  |  |  |

* 1. Arya Nalinkumar:

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| **Date** | **Monday** | **Tuesday** | **Wednesday** | **Thursday** | **Friday** | **Saturday** | **Sunday** |
| **31s Oct** | First group meeting |  | Second meeting, gone through the documentation of project |  |  |  |  |
| **7th Nov** |  | Worked on use cases for winning condition | Group meeting  Gone through use cases & CRC cards |  |  |  |  |
| **14th Nov** | Group meeting (Sprint 2)  Continued work on CRC cards |  | Group meeting  Discussed on System architecture |  |  |  |  |
| **21st Nov** | Group meeting  (Sprint 3) |  | Worked with Selin on template: Login, Menu & Score table section | Completed template in Score table section | Worked on documenting the system architecture |  | Completed System architecture document |
| **28th Nov** | Group meeting  (Sprint 4)  Checked the documents with team members  Customer meeting |  | Group meeting |  | Discussed with Selin on login registration functionality. | Worked on login functionality- Done the Sql query to database in login & registration section. | Continued work on login & Register on client side. |
| **5th Dec** | (Sprint 5)  Checked the login & register functionality with Selin & Mattsi.  Discussed the modification to template.  Customer Meeting | Worked on new template changes.  Completed  Login/Registration,  Lobby & Score table  Template section | Group meeting  Shown the new template and started work on How to play section & result Screen | Completed new templates work |  |  | Worked with Tassos on Player Movement  Service. |
| **12th Dec** | (Sprint 6)  Group meeting  Discussed the task need to complete  Customer meeting | Completed the content of user guide.  Updated documentation  Worked on new tutorial section.  (Change in game screen) | Team meeting  Checked the documents with team members.  Added new screenshots on the user guide & modification on How to play section in template. | Worked on use case description and documenting source code |  |  |  |

1. Meeting Minutes

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at EB0.7 on 09-NOV-2016.

Attendees

Attendees included Arya, Mattsi, Anastasios, Xiao, Qian, Selin.

Members not in attendance

-

Approval of minutes

* Sprint 0
* Selin was elected as team leader unanimously.
* Format was set for Project Diary.
* Requirement analysis.
* Trello Setup.
* Github Setup.
* Documentation of Use Cases

Reports

* Validated Use Cases
* Produced layout for login-registration screen and main menu.
* Create CRC cards for the first two use cases.

Unfinished business

* Create CRC from all Use cases

New business

* Create tasks from Use cases

Announcements

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| Mattsi Jansky |  | 09-NOV-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at CB5.12 on 14-NOV-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin.

Members not in attendance

Members not in attendance included Arya.

Approval of minutes

* Layout for login-registration screen and main menu uploaded on Trello.
* CRC cards for the first two use cases uploaded on Trello.

Reports

* Completed CRC cards for all use cases.
* The project was split into tasks.
* Time estimation on each task was set.

Unfinished business

## **Creating uses cases with server and client side**

New business

* UML design.

Announcements

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| Anastasios Gemtos |  | 14-NOV-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at EB0.7 on 16-NOV-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

-

Approval of minutes

* CRC cards were added to project’s documentation.
* Few changes on time estimation were made and we added tasks on Trello.

Reports

* System architecture was discussed (3-tier architecture).
* Created UML classes for Server-side.

Unfinished business

* UML classes for client-side

New business

* Layouts for game screen and maps
* Database set up

Announcements

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| Anastasios Gemtos |  | 16-NOV-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at CB5.12 on 21-NOV-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

-

Approval of minutes

* UML tool was used to create UML diagrams for server.

Reports

* Created UML classes for Client-side and made a few changes on Server-side UMLs.

Unfinished business

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New business

* Review all the documents created so far.
* Start coding.

Announcements

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| Anastasios Gemtos |  | 21-NOV-2016 |
| Secretary |  | Date of approval |

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Call to order

A meeting of Team B was held at CB5.8 on 23-NOV-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

Approval of minutes

* UML diagrams were added into our project’s documentation.

Reports

* Reviewed all the documents about requirement analysis, Use Cases, CRC cards, system architecture and design, UML diagrams and test planning.

Unfinished business

* Need to integrate all documents into a single one.

New business

* Start coding.

Announcements

* The code development of the project begins next Monday

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| Anastasios Gemtos |  | 23-NOV-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at CB5.12 on 28-NOV-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

-

Approval of minutes

* Changes were made to all documents to be clearer and less ambiguous.

Reports

* Created a single document that explains our system’s architecture and design based on requirement analysis.
* Created tasks on Trello (Sprint 4).
* Created a document for style conventions both for documentation and coding.
* Meeting with Julian Padget to demonstrate our progress so far.

Unfinished business

* Need to split the Use Cases into user stories and design use cases.
* Need to restructure our document.

New business

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Announcements

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| Anastasios Gemtos |  | 28-NOV-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at EB0.7 on 30-NOV-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

Approval of minutes

-

Reports

* We worked in pairs to complete database functionality, login/registration functionality and map parsing by the server.

Unfinished business

* Need to split the Use Cases into user stories and design use cases.
* Need to restructure our document.

New business

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Announcements

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| Anastasios Gemtos |  | 30-NOV-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at CB5.12 on 5-DEC-2016

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

Xiao

Approval of minutes

-

Reports

* We discussed about remaining functionality and tasks are assigned. Meeting with the customer is happened.

Unfinished business

* Score Implementation, bot functionality
* Need to restructure our document.
* Exit and leave condition
* User guide and tutorial

New business

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Announcements

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| Selin Kutlamis |  | 05-DEC-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at EB0.7 on 7-DEC-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

Xiao

Approval of minutes

-

Reports

* We worked in pairs to complete movement functionality, visibility functionality and documentation.

Unfinished business

* Score Implementation, bot functionality
* Need to restructure our document.
* Exit and leave condition
* User guide and tutorial

New business

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Announcements

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| Selin KUTLAMIS |  | 07-DEC-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes |

Call to order

A meeting of Team B was held at CB.5.12 on 12-DEC-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

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Approval of minutes

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Reports

* Discussion for documentation and improvement in the bug fixes.

Unfinished business

* Score interaction and exit condition

New business

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Announcements

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| Selin KUTLAMIS |  | 12-DEC-2016 |
| Secretary |  | Date of approval |

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| Accent icon | Meeting Minutes | | |

Call to order

A meeting of Team B was held at EB0.7 on 14-DEC-2016.

Attendees

Attendees included Mattsi, Anastasios, Xiao, Qian, Selin, Arya.

Members not in attendance

Approval of minutes

-

Reports

* Continued with documentation.

Unfinished business

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New business

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Announcements

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| Selin KUTLAMIS |  | 14-DEC-2016 |
| Secretary |  | Date of approval |

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