

# CRC Model

User	
username: username of User password: password of User getUsername: gets username of user setPassword: if user wants to change password matchHistory: collection of each game this User has played (Mode, numMoves, time)	UserDatabase UserAccount launchGame

Entity → Enterprise Business Rules

## Board

Shape: number of rows and column  
Size: rows x columns (number of tiles  
that are put on)

runGame  
GenerateBoard  
Tile

promptLogin	
User login User sign up	createNewUser userLogin

Use Case→ Application Business Rules

## CreateNewUser

createUser : username, password, empty  
matchHistory for each modes  
usernameCheck : if username exist in  
userDataBase or not)  
csv file for Local database

User  
promptLogin  
UserDataBase

## UserLogin

username

password

password is valid/invalid

username exists/doesn't exist

InfoCheck

UserDatabase

Use Case→ Application Business Rules

## UserDatabase

Stores a collection of Users for a local file

User  
createNewUser

HistoryUpdater	
updateHistory: adds the last match played to User.	User

Use Case→ Application Business Rules



## InfoCheck

password entered valid/invalid(from  
userDatabase)  
username exists/doesn't exists

UserDatabase  
UserLogin

Tile	
key : integer value getKey : gets key value of Tile Theme : theme of tile	Board

# launchGame

userPlay : link game stats to the user playing

Difficulty : menu for user to determine difficulty, will determine how many tiles are generated

runGame

Tile

## runGame

generateBoard : create board based on user's input difficulty (randomly place tiles)

showTile : Reveals selected Tile

checkMatch : check if 2 consecutive tiles are a match

hideTile : if checkMatch == false, hide both tiles

User  
gameSettings  
generateBoard  
getUserInput

## getUserInput

getInput : gets the user's input

runGame

## updateBoard

updateBoard: updates board with latest information

getUserInput  
runGame

Controller → Interface Adapters

## endGame

checkLeaderboard  
promptNewGame  
Add in history

launchGame  
historyUpdater  
LeaderBoard  
gameSettings

Controller → Interface Adapters

## generateBoard

Tile → based on difficulty, as  
this determines how many tiles  
are displayed

timer

updateNumMoves

Tile



## gameSettings

Mutes the sound effects  
Resets game for user  
Pauses game for user  
Exists game for user

runGame  
launchGame  
endGame

## Leaderboard

Get leaderboard for each difficulty  
Contains/displays top 10 scores and  
username out of all users for a given  
difficulty

UserDatabase