CS414: Object-Oriented Design - Fall 2018

Testing Document

Team: ByteMe

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This document outlines the system test cases for the Banqi Game implementation. The purpose of these tests is to ensure that the entire system is tested in full (from end to end) before its release.

The system test cases address full functionality of the product release for the Banqi Game for what is developed for this release.

System Test Case 1: Log-In

The prompt that will be up in the terminal window at the start of this is the following:

```
======    =        ==   ==    =====       ========
=== ===    ===       === ==  ========    =======
=== ===   == ==     ==== == ====  ====      ==
======    ==  ==    === = == ====  ====       ==
=== ===  =======    === === === ====  === ==
=== === ===   === === ==  ==========  =======
====== ===    === ===  =   ====== ==   =======


1) Login
2) Create profile
To exit, type 'exit' and press Enter
```

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
LI-1	From the command line, enter "1" to pull up login feature.	Pulls up login feature/prompt asking for nickname, then password	Login feature comes up, asks for nickname, then password	Pass
LI-2	User enters nickname and password	User is authenticated, both inputs are valid, and can play, manage invites or view profiles. These options are presented on a home welcome screen.	User is logged in and able to play, manage invites or view profiles. These options are presented on a home welcome screen	Pass
Alternative Flow 1: User doesn't exist (nickname or password)				
LI-2a1	User enters a nickname that does not exist among registered	System prompts (with print statement) User	System asks User to reenter	Pass

	accounts or a password that doesn't match the nickname.	to try entering the nickname and password again	nickname and password again	
LI-2a2	The system decrements a counter to limit the number of failed password attempts (3 attempts max).	The number of remaining attempts is decreased by 1	No explicit result for the User, but the count is decremented	Pass
LI-2a3	The User enters a valid nickname and password before the 3 login attempts are used.	User is authenticated, both inputs are valid, and can play, manage invites or view profiles. These options are presented on a home welcome screen.	User is logged in and able to play, manage invites or view profiles. These options are presented on a home welcome screen.	Pass
Alternative Flow 1 - Alternative Flow 1: User fails to enter valid credentials (nickname or password)				
LI-2aa	The User has run out of login attempts without entering valid credentials.	The system tells via print statement that all login attempts are used and login is cancelled.	Login is cancelled, User is unable to access the system.	Pass

System Test Case 2: Create Account/Profile

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
CA-1	From the command line, enter "2" to pull up create account feature.	Asks for User to enter a nickname	Asks for User to enter a nickname	Pass
CA-2	User enters nickname, email and password	Banqi Controller finds that the nickname/email aren't registered with an existing account	Banqi Controller finds the credentials are valid and new in the system.	Pass
CA-3	The date of registration is determined and associated with the User's account.	The correct date for when the account was created is stored (not shown explicitly)	The correct date is stored (not shown explicitly)	Pass
CA-4	The Banqi Controller creates a	A User Profile	There is a new	Pass

	new Profile for the User	matching the User it was created for. All game result counts will be 0 (e.g. wins). There is also a file associated with that User's information. "Profile created!" prints via command line.	record for this User, appearing like a new User. There is a file associated with that User's information. "Profile created!" prints via command line.	
Alternative Flow 1: Email exists with a registered account (nickname)				
CA-2a1	User enters an email that already exists with a registered user in the system.	System prompts with "Nickname and/or email already exists in our system. Try again."	Print statement tells User "Nickname and/or email already exists in our system. Try again."	Pass
CA-2a2	User enters all credentials again, including an email that is new in the system.	A User Profile matching the User it was created for. All game result counts will be 0 (e.g. wins). There is also a file associated with that User's information.	There is a new record for this User, appearing like a new User. There is a file associated with that User's information.	Pass
Alternative Flow 2: Nickname is taken				
CA-2b1	User enters a nickname that is in use by another registered user in the system.	System prompts with "Nickname and/or email already exists in our system. Try again."	Print statement tells User "Nickname and/or email already exists in our system. Try again."	Pass
CA-2b2	User enters all credentials again, including a nickname not in the system.	A User Profile matching the User it was created for. All game result counts will be 0 (e.g. wins). There is also a file associated with that User's information.	There is a new record for this User, appearing like a new User. There is a file associated with that User's information.	Pass

The following system test cases all take place when a User is already logged in and sees this menu.

```
Welcome to Banqi!  Please enter the number of what you'd like to do.

1) Play existing game
2) Manage invites
3) View profile
To exit, type 'exit' and press Enter
```

System Test Case 3: Logout/Exit

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
LO-1	From the command line, enter "exit" to exit the system.	System asks via print statement if User wants to log out with options	The menu disappears, but the User is still in the system.	Fail

System Test Case 4: Play Existing Game

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
EG-1	From the home welcome screen, the User enters '1' to access a list of existing games to return to.	System provides the User with a list of their existing/current games so they User can play the existing game they'd like.	No action is taken and the User is prompted again with the welcome screen.	Fail (not implemented)

System Test Case 5: Start New Game with Opponent

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
NG-1	User enters '2' via command line, to "Manage Invites"	Terminal shows: 1) Accept invite 2) Send Invite To exit, type 'exit' and press Enter	Terminal shows: 1) Accept invite 2) Send Invite To exit, type 'exit' and press Enter	Pass
NG-2	From the Manage Invites screen,	Terminal shows a	Terminal shows a	Pass

	User enters '2' again via command line to send an invite	numbered list of the Users registered (eligible for invites).	numbered list of the Users registered (eligible for invites).	
NG-3	User enters the number (such as '1') for the User they want to send an invite to.	The selected User is online and the invite is sent across devices to the other User. The invited User gets a terminal prompt saying the other User invited them.	Selected User is online so the invite is sent across devices to the other User. The invited User gets a terminal prompt saying the other User invited them.	Pass
NG-4	Invited User is on the main menu and responds to the invitation by selecting '2' for Manage Invites.	Terminal shows: 1) Accept invite 2) Send Invite To exit, type 'exit' and press Enter	Terminal shows: 1) Accept invite 2) Send Invite To exit, type 'exit' and press Enter	Pass
NG-5	Invited User selects '1' to Accept an invite.	Terminal shows a list of Users who have invited that User.	Terminal shows a list of Users who have invited that User.	Pass
NG-6	Invited User enters the number (such as '1') for the invite they want to accept.	System immediately starts the game between the two Users by printing the Board in its starting state..	System immediately starts the game between the two Users by printing the Board in its starting state..	Pass
Alternative Flow 1: The invited User is offline				
NG-3a	Users enters the number (such as '1') for the User they want to send an invite to. However, that User is offline.	System responds saying User is offline and cannot be invited to play Banqi.	System says invite is sent, but the offline User will never know of the invite and the invitee waits indefinitely.	Fail (not implemented)
Alternative Flow 2: One or more of the invited Users does not exist				

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
NG-4a1	Invited User is not on the home menu and cannot directly respond to the invite. First the User enters 'exit' to return to the main screen.	System "returns" User to the main menu and prints out the following: Welcome to Banqi! Please enter the number of what you'd like to do. 1) Play existing game 2) Manage invites 3) View profile To exit, type 'exit' and press Enter	System "returns" User to main menu and prints the following: Welcome to Banqi! Please enter the number of what you'd like to do. 1) Play existing game 2) Manage invites 3) View profile To exit, type 'exit' and press Enter	Fail (not implemented)
NG-4a2	The invited User is now on the main menu and responds to the invitation by selecting '2' for Manage Invites.	Terminal shows: 1) Accept invite 2) Send Invite To exit, type 'exit' and press Enter	Terminal shows: 1) Accept invite 2) Send Invite To exit, type 'exit' and press Enter	Pass
NG-4a3	Invited User selects '1' to Accept an invite.	Terminal shows a list of Users who have invited that User.	Terminal shows a list of Users who have invited that User.	Pass
NG-4a4	Invited User enters the number (such as '1') for the invite they want to accept.	System immediately starts the game between the two Users by printing the Board in its starting state..	System immediately starts the game between the two Users by printing the Board in its starting state..	Pass

System Test Case 6: Play Game (following the completion of Test Case 5)

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
PG-1	The game board is displayed in the terminal window of both devices with an X in all tiles (signifying no pieces are turned over). The User who sent the invited plays first. This User	Inviting User enters 'H4' via command line. That spot on the board changes from 'X' to '[name of Piece moved to H4	The inviting User enters the coordinate 'H4' and then a piece becomes visible on that Tile. This	Pass (may need to enter coordinate a second time if not recognized,

	enters the coordinates of where they want to move a piece to on the board, such as H4.	(such as Chariot-Red)]'. This player is assigned the color of the piece they turned over. The other player is assigned the other color.	player is assigned the color of the piece they turned over. The other player is assigned the other color.	but definitely passes then).
PG-2	System notifies the other User with a message and the updated board on their terminal window saying it's their	The board prints out with the first User's move and the terminal tells the other User it's their turn.	The board prints out with the first User's move and the terminal tells the other User it's their turn.	Pass
PG-3	The other User selects a coordinate on which to turn a piece over, or move a piece that's their	User enters valid coordinate via command line. The Tile content changes from 'X' to '[name of Piece flipped over]]'.	User enters valid coordinate via command line. The Tile content changes from 'X' to '[name of Piece flipped over]]'.	Pass (may need to enter coordinate second time if not recognized, but then passes).
PG-4	System notifies the first User again with a message and the updated board on their terminal window saying it's their	The board prints out with the second User's move and the terminal tells the first User it's their turn.	The board prints out with the second User's move and the terminal tells the first User it's their turn.	Pass
Steps PG-1 and PG-4 continue in a cycle until there is a winner. If a User forfeits, Alternative Flow 3. In the case of capturing, see the cell directly below.				
	One of the *User's pieces* captures a piece of the other's.	The board is updated and the captured piece is removed from the board display in the Terminal window of both Users.	The board is updated and the captured piece is removed from the board display in the Terminal window of both Users.	Pass
PG-5	One of the Users wins by capturing all of the other's pieces.	Terminal closes the game board and tells both Users who won.	Terminal closes the game board and tells both	Pass

		Winning User's wins gets incremented on their User Profile. Losses are incremented for the losing player.	Users who won. Winning User's wins gets incremented on their User Profile. Losses are incremented for the losing player.	
PG-6	Users enter 'exit' to return to the main Banqi Game menu.	Terminal says: "Welcome to Banqi! Please enter... ...3) View profile To exit, type 'exit' and press Enter"	Terminal says: "Welcome to Banqi! Please enter... ...3) View profile To exit, type 'exit' and press Enter"	Pass
Alternative Flow 1: Not a valid move				
PG-1a or PG-3a	The User enters an invalid move according to the rules of Banqi or simply a coordinate pair like X9 that's not on the board.	The system responds with: "Invalid coordinate Enter a coordinate to select a piece."	The system responds with: "Invalid coordinate Enter a coordinate to select a piece."	Pass
Alternative Flow 2: User tries to move a piece that's not theirs				
PG-3b1 (or PG-1b1 if second move by U1)	Opposing User enters the same coordinate of the last player, but they can't move it because it's not their color.	System prompts this User with: "That's not your piece! Try again! Enter a coordinate to select a piece."	System prompts this User with: "That's not your piece! Try again! Enter a coordinate to select a piece."	Pass
PG-3b2 (or PG-1b1 if second move by U1)	Opposing User selects a different tile that still has an X on it (not turned over) or a piece that is their own color.	User enters valid coordinate via command line. The Tile content changes from 'X' to '[name of Piece flipped over]]'.	User enters valid coordinate via command line. The Tile content changes from 'X' to '[name of Piece flipped over]]'.	Pass (may need to enter coordinate a second time if not recognized, but definitely passes then).
Alternative Flow 3: User forfeit game				
PG-1c1	User enters 'forfeit' instead of a	System cancels	System cancels	Fail (only

or PG-3c1	coordinate to play in the game.	game on that User's window and the other's window. Terminal output tells both User's who forfeited. Forfeiter's User Profile has a new forfeit on it. Other User's win count goes up by one.	game on that User's window and the other's window. Terminal output tells both User's who forfeited. Forfeiter's User Profile has a new forfeit on it. Other User's win count goes up by one.	registers the forfeit on the forfeiting User's window, not the other User's)

System Test Case 7: View Profile

Test ID	Test Step/Input	Expected Result	Actual Result	Pass/Fail
VP-1	From the home welcome screen, the User enters '3'' to view a User's Profile.	Prints out that User's profile, like: lmoreno's Profile Joined: 2018/12/06 13:38:34 Wins: 0 Losses: 0 Draws: 0 Forfeits: 0 Also gives option to see another registered profile: "1) Search for User"	Prints out that User's profile, like: lmoreno's Profile Joined: 2018/12/06 13:38:34 Wins: 0 Losses: 0 Draws: 0 Forfeits: 0 Also gives option to see another registered profile: "1) Search for User"	Pass
VP-2	User enters '1' to search for a User's profile.	Terminal shows: Enter the number of the user to view or type 'exit' 1) scoobs 2) NoScope69 3) Evan 4) Bill 5) Brian 6) test	Terminal shows: Enter the number of the user to view or type 'exit' 1) scoobs 2) NoScope69 3) Evan 4) Bill 5) Brian 6) test	Pass

VP-3	User enters the number of the profile to view, such as '1'	Terminal shows: scoobs's Profile Joined: 2018/10/27 17:45:45 Wins: 5 Losses: 4 Draws: 3 Forfeits: 2 1) Search for player To exit, type 'exit' and press Enter	Terminal shows: scoobs's Profile Joined: 2018/10/27 17:45:45 Wins: 5 Losses: 4 Draws: 3 Forfeits: 2 1) Search for player To exit, type 'exit' and press Enter	Pass
VP- 4	User enters 'exit' to return to the main menu.	Terminal shows: "Welcome to Banqi! Please enter... ...3) View profile To exit, type 'exit' and press Enter"	Terminal shows: "Welcome to Banqi! Please enter... ...3) View profile To exit, type 'exit' and press Enter"	Pass
Alternative Flow 1: User does not search for a profile to view				
VP-2a	User enters 'exit' to return to the main menu, rather than searching for other profiles.	System returns User to the "home" screen and prints: Welcome to Banqi! Please enter the number of what you'd like to do. 1) Play existing game 2) Manage invites 3) View profile To exit, type 'exit' and press Enter	System returns User to the "home" screen and prints: Welcome to Banqi! Please enter the number of what you'd like to do. 1) Play existing game 2) Manage invites 3) View profile To exit, type 'exit' and press Enter	Pass
Alternative Flow 2: User searches for additional profiles				
VP-4a2	User enters '1' to to search for another User's profile.	Terminal shows: Enter the number of the user to view or type 'exit' 1) scoobs 2) NoScope69	Terminal shows: Enter the number of the user to view or type 'exit' 1) scoobs 2) NoScope69	Pass

		3) Evan 4) Bill 5) Brian 6) test	3) Evan 4) Bill 5) Brian 6) test	
VP-4a2	User enters the number of the profile to view, such as '3' to view Evan's profile.	Terminal shows: "Evan's Profile Joined: 2018/12/03 14:20:48 Wins: 7 Losses: 65 Draws: 3 Forfeits: 0 1) Search for player To exit, type 'exit' and press Enter"	Terminal shows: "Evan's Profile Joined: 2018/12/03 14:20:48 Wins: 7 Losses: 65 Draws: 3 Forfeits: 0 1) Search for player To exit, type 'exit' and press Enter"	Pass

Determined Unit Test Cases (for what is currently implemented):

Test ID	Test Suite Name	How to Test?	Test Data	Expected Result	Actual Result	Pass/Fail
AT-1	AllTests.java	Run Test Suite	AllTests.java Test Suite	Pass	Pass	Pass
A-1	AllTests.java	Run Test Suite	Not Null Advisor after initialization	Not Null	Not Null	Pass
A-2	AllTests.java	Run Test Suite	Advisor is null before initialization	Null	Null	Pass
BGC-1	AllTests.java	Run Test Suite	Initialize Banqi Game Controller	New Controller	New Controller	Pass
BCG-2	AllTests.java	Run Test Suite	Null Banqi Controller (no initialization)	Null Banqi Controller	Null Banqi Controller	Pass
BGC-3	AllTests.java	Run Test Suite	BanqiController.readUsers() with invalid file path	Throws FileNotFoundException	Throws FileNotFoundException	Pass
BGC-4	AllTests.java	Run Test Suite	BanqiController.readUsers() populates a listOfUsers	listOfUsers is not null	listOfUsers is not null	Pass

BGC-5	AllTests.java	Run Test Suite	BanqiController.readUsers() populates a listOfProfiles	listOfProfiles is not null	listOfProfiles is not null	Pass
BG-1	AllTests.java	Run Test Suite	Test BanqiGame instance is not null after initialization	Not null	Not null	Pass
BG-2	AllTests.java	Run Test Suite	Set up Banqi Game Board	Tile info exists for a Tile at position (1,1) on the board	Tile info exists for a Tile at position (1,1) on the board	Pass
BG-3	AllTests.java	Run Test Suite	Make a move on the Banqi Game Board	Board contains the move	Board is null	Fail
BG-4	AllTests.java	Run Test Suite	Get the current state of the Banqi Game	The state matches up with what the Banqi Game should be	The state matches up with what the Banqi Game should be	Pass
B-1	AllTests.java	Run Test Suite	Creation of a new Board for a new Banqi Game	The Banqi Game has a board with all pieces face-down and in random starting positions	The Banqi Game has a board with all pieces face-down and in random starting positions	Pass
B-2	AllTests.java	Run Test Suite	Info for each tile on the Board	The correct info is returned for the Tile on the Board	The correct info is returned for the Tile on the Board	Pass
Can-1	AllTests.java	Run Test Suite	After initialized, the Cannon object is not null	Not null	Not null	Pass
Can-2	AllTests.java	Run Test Suite	Before initialized, the Cannon object is null	Null	Null	Pass
Char-1	AllTests.java	Run Test Suite	After initialized, the Chariot object is not null	Not null	Not null	Pass
Char-2	AllTests.jav	Run Test	Before initialized, the	Null	Null	Pass

	a	Suite	Chariot object is null			
E-1	AllTests.java	Run Test Suite	After initialized, the Elephant object is not null	Not null	Not null	Pass
E-2	AllTests.java	Run Test Suite	Before initialized, the Elephant object is null	Null	Null	Pass
G-1	AllTests.java	Run Test Suite	After initialized, the General object is not null	Not null	Not null	Pass
G-2	AllTests.java	Run Test Suite	Before initialized, the General object is null	Null	Null	Pass
H-1	AllTests.java	Run Test Suite	After initialized, the Horse object is not null	Not null	Not null	Pass
H-2	AllTests.java	Run Test Suite	Before initialized, the Horse object is null	Null	Null	Pass
S-1	AllTests.java	Run Test Suite	After initialized, the Soldier object is not null	Not null	Not null	Pass
S-2	AllTests.java	Run Test Suite	Before initialized, the Soldier object is null	Null	Null	Pass
T-1	AllTests.java	Run Test Suite	Initialization of a Tile is not null	A new Tile is initialized on the Board (not null)	A new Tile is initialized on the Board (not null)	Pass
T-2	AllTests.java	Run Test Suite	Before initialization of a Tile, Tile object is null	Null	Null	Pass
T-3	AllTests.java	Run Test Suite	Get the piece on the specific Tile without a piece	Null	Null	Pass
T-4	AllTests.java	Run Test Suite	Get the position of a specific Tile on the board	(1,1)	(1,1)	Pass
U-1	AllTests.java	Run Test Suite	Before initialization of a User, User object is null	Null	Null	Pass

U-2	AllTests.java	Run Test Suite	Initialization of a registered User	The User is registered in the system (not null)	The User is registered in the system (not null)	Pass
U-3	AllTests.java	Run Test Suite	A User Profile and a User	The new User has a User Profile	The new User has a User Profile	Pass
U-4	AllTests.java	Run Test Suite	A new Banqi Game hosted by a User	There is a new Banqi Game associated with the User	There is a new Banqi Game associated with the User	Pass
U-5	AllTests.java	Run Test Suite	Sending of an Invite for a new Banqi Game	The Invite is sent to the User who the hosting User invited	Invitees can be recorded, but Invites are not yet sent	Fail
U-6	AllTests.java	Run Test Suite	Whether a invite has been answered or not answered	The status of a specific invite matches up with what the associated Users have done with it.	Returns the invite is out there, but there is not an ability to accept/reject yet	Fail
U-7	AllTests.java	Run Test Suite	The answer for an Invite for a Banqi Game	A User chooses to accept or decline an Invite and that User is a part of or is not a part of the game based on that.	Invites are not yet implemented	Fail
UP-1	AllTests.java	Run Test Suite	Before initialization of a UserProfile, UserProfile object is null	Null	Null	Pass
UP-2	AllTests.java	Run Test Suite	Initialization of a UserProfile	The UserProfile exists in the system (not null)	The UserProfile exists in the system (not null)	Pass