

**Project 1.0**  
**Team: Better Bytes**

Template

Use Case ID	EU-xxxx : Indicates an essential use case, i.e., a use case that describes activity in system independent terms	
Use Case Name	Enter name of Use Case.	
Overview	Describe the purpose of the Use Case and give a brief description.	
Type	Enter Use Case priority (primary, secondary, optional)	
Actors	List all actors that participate in this Use Case. Indicate the actor that initiates the use case by placing "initiator" in brackets after the actor name. Also, indicate primary actors by placing "primary" in brackets after actor name.	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Enter the condition that must be true when the main flow is initiated. This should reference the conceptual model.	
Flow	Main Flow: Steps should be numbered	
	Subflows: Break down of main flow steps	
	Alternate flows: Include the post condition for each alternate flow if different from the main flow.	
Post-conditions	Enter the condition that must be true when the main flow is completed. This should reference the conceptual model. Include the following information in this section	
Cross references	References to other Use Cases or textual requirements that relate to this Use Case	

Use Case ID	1	
Use Case Name	Start Server	
Overview	Start up the main game server	
Type	Secondary	
Actors	Administrator [Initiator,Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Hardware and other required software are present and correctly configured.	
Flow	Main Flow: 1) Start server	
	Subflows	
	Alternate flows: 1a Connection to server fails during startup process 1a1 Server fails to start	
Post-conditions	Server is running and correctly configured	
Cross references		

Use Case ID	2
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Use Case Name	Terminate Server	
Overview	Terminate the main game server	
Type	Secondary	
Actors	Administrator [Initiator,Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server is up and running normally	
Flow	Main Flow: 1. Terminate server	
	Subflows	
	Alternate flows: 1a Connection to server fails 1a1 Game server still running	
Post-conditions	No elements of the server are running. User data is still stored but the system is no longer running so any active user sessions will lose connection.	
Cross references	Server must be running (1),	

Use Case ID	3
Use Case Name	Connect to server
Overview	User connects to on to main server
Type	Primary

Actors	User [Initiator, Primary]	
Properties	Performance	Connecting should take less than 3 seconds
	Security	
	Other	
Pre-conditions	Server has been started	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1. User enters server details</li> <li>2. User is connected to server</li> <li>3. User is prompted with login screen</li> </ol>	
	Subflows	
	Alternate flows <ol style="list-style-type: none"> <li>2a User is unable to connect to server <ol style="list-style-type: none"> <li>2a1 Display error message</li> <li>2a2 Return to step 1</li> </ol> </li> </ol>	
Post-conditions	User is connected to server and ready to log on	
Cross references	Server must be running(1)	

Use Case ID	4	
Use Case Name	Log on to server	
Overview	User logs on to main server	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	Logging on should take no more than three seconds

	Security	Password should not be sent in plain text
	Other	
Pre-conditions	User has connected to the server (3)	
Flow	Main Flow: Include(3) 1. User enters username and password into their respective fields 2. Server authenticates user 3. User is logged on to server and prompted with main game screen	
	Subflows:	
	Alternate flows 2a User is unable to be authenticated by the server (the user entered invalid credentials or has not created an account yet) 2a1 Display error 2a2 Return to step 1	
Post-conditions	User is logged on and directed to the main menu of the UI	
Cross references	Server is running(1),User has an account(5)	

Use Case ID	5	
Use Case Name	Create account	
Overview	User creates a new account on the server	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	Password is not sent in plain text
	Other	
Pre-conditions	Server has been started (1) and user is connected (3)	
Flow	Main Flow: Include(3) 1) User enters desired username, email, and password 2) Server validates username and password	

	3) User is registered and logged on
	Subflows:
	Alternate flows 2a server invalidates new username, email, and password request (user fails to enter credentials for one of the required fields or enters a duplicate username) 2a1 Display error message 2a2 return user to step 1
Post-conditions	New account has been created, user is logged on
Cross references	Server is running (1), Connect To Server (3)

Use Case ID	6	
Use Case Name	Logout	
Overview	User logs off of the server	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server has been started. User is logged into the server	
Flow	Main Flow: 1) User requests to logout 2) Client prompts user to confirm logout 3) User confirms logout 4) User sends logout request to server 5) User returns to home screen	
	Subflows:	
	Alternate flows:	

	3a User does not confirm logout 3a1 User stays logged in
Post-conditions	User is logged out of sever
Cross references	Server is running(1),User is logged on(4)

Use Case ID	7	
Use Case Name	Check active games	
Overview	User receives a list of the state of their active games	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server is started. User is logged into the server	
Flow	Main Flow: 1) User requests states of active games 2) Server returns active games	
	Subflows:	
	Alternate flows: 1a Server connection failure -- could not fetch active games 1a1 Display error message	
Post-conditions	User has data of their current games	
Cross references	Server is running(1),User is logged on(4)	

Use Case ID	8	
Use Case Name	Create new game	
Overview	User creates a new game with another player	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server is started. User is logged into the server	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1) User requests a new game by inviting another player(s)</li> <li>2) User awaits for another player to accept the invitation (see 15)</li> <li>3) Game is created with the two players</li> </ol>	
	Subflows:	
	Alternate flows: <ol style="list-style-type: none"> <li>1a Player name does not exist <ol style="list-style-type: none"> <li>1a1 Display error message</li> <li>1a2 Game is not created</li> <li>1a3 Return to main menu where user can request a new game</li> </ol> </li> </ol>	
Post-conditions	User and the other player are both part of a new game match.	
Cross references	Server is running (1),User is logged on(4), Accept/decline invitation (8)	



Use Case ID	9	
Use Case Name	Resume game	
Overview	User rejoins an existing game they were a part of	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server is started. User is logged into the server. User is part of a existing game with another player	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1) User requests to join an existing game</li> <li>2) Server fetches the current game state of the match</li> <li>3) Client loads the game state</li> </ol>	
	Subflows:	
	Alternate flows: <ol style="list-style-type: none"> <li>1a Connection to server lost -- cannot join the existing game</li> <li>3a the fetched game state indicates the match was terminated -- display final game results <ol style="list-style-type: none"> <li>3a1 Allow user to exit game when done viewing the final results</li> <li>3a2 on exit, return user to main menu</li> </ol> </li> </ol>	
Post-conditions	User is connected to the game	
Cross references	Server is running (1),User is logged on(4), There is a game that can be resumed	

Use Case ID	10
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Use Case Name	Make move	
Overview	User advances game by making a valid move on the board	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server is started, User is logged into the server, and User is playing a match	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1. Get current state of the game</li> <li>2. User requests move</li> <li>3. System validates the move</li> <li>4. User confirms move</li> <li>5. Update Game state</li> </ol>	
	Subflows:	
	Alternate flows: <ol style="list-style-type: none"> <li>3a Requested Move is not valid -- system invalides move <ol style="list-style-type: none"> <li>3a1 Block user from making move</li> <li>3a2 Tell user why move cannot be made</li> <li>3a3 Return to step 2</li> </ol> </li> <li>4a User does not confirm move <ol style="list-style-type: none"> <li>4a1 State of game does not change</li> <li>4a2 Return to step 2</li> </ol> </li> </ol>	
Post-conditions	Updates the game and notifies the opponent of the new move	
Cross references	Server is running (1),User is logged on(4), User has resumed a game (9)	

Use Case ID	11
Use Case Name	Cancel game
Overview	User terminates a live match

Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server is started, User is logged into the server, and User is playing a match	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1. User requests game termination (concede)</li> <li>2. Game ends</li> <li>3. Notify opponent that game is over</li> </ol>	
	Subflows:	
	Alternate flows:	
Post-conditions	Game is terminated and is reflected in the users game history	
Cross references	Server is running (1),User is logged on(4), There is a valid game to terminate	

Use Case ID	12	
Use Case Name	Check Rules	
Overview	User can view the rules/manual to the game	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	

	Security	
	Other	
Pre-conditions	Server is started, User is logged into the server	
Flow	Main Flow: 1. User requests game rules 2. Display rules to user	
	Subflows:	
	Alternate flows:	
Post-conditions	Rules are presented in a readable view on the client	
Cross references	Server is running (1),User is logged on(4)	

Use Case ID	13	
Use Case Name	Start Client Program	
Overview	User launches the game interface	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	Should take less then 3 seconds
	Security	
	Other	
Pre-conditions	User is on working computer	

Flow	Main Flow: <ol style="list-style-type: none"> <li>1. User initiates <b>program</b> executable</li> <li>2. Load game interface (Client)</li> <li>3. <b>Display 'landing page' for user to enter server details (see 3)</b></li> </ol>
	Subflows:
	Alternate flows: <ol style="list-style-type: none"> <li>2a Game could not be loaded/started <ol style="list-style-type: none"> <li>2a1 Display error message</li> <li>2a2 Close executable process</li> </ol> </li> </ol>
Post-conditions	User has client running and can be interacting with UI.
Cross references	Server is running (1)

Use Case ID	14	
Use Case Name	<b>Exit Client Program</b>	
Overview	User closes the game client	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	User is running game client	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1. <b>User exits out of client program – (program initiates shut down)</b></li> <li>2. <b>Shutdown program -- closes active program session</b></li> </ol>	
	Subflows:	
	Alternate flows:	
Post-conditions	User has closed out of application (client program)	
Cross references	Client is running (13)	

Use Case ID	15	
Use Case Name	Accept/decline invitation	
Overview	User receives and responds to an invite to a game	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	User is connected and logged in. Another player requested a new game by inviting the User (use case 8)	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1) User receives a notification that they have been invited to a game</li> <li>2) User accepts invite</li> <li>3) Invitation is still valid (no other player has accepted the games invitation)</li> <li>4) User joins game</li> </ol>	
	2a User declines invite <ol style="list-style-type: none"> <li>2a1 User does not join game – return to main menu</li> <li>3a Invitation is no longer valid (another player has accepted the games invitation) <ol style="list-style-type: none"> <li>3a1 Notify user that the game has already been created with another player and the invitation is no longer valid</li> <li>3a2 User does not join game – return to main menu</li> </ol> </li> </ol>	
Post-conditions	If user is first to accept then player joins game. Otherwise, invitation is invalid and player does not join game.	
Cross references	Server is running (1), User is logged on(4), Create new game(8)	

Use Case ID	16	
Use Case Name	Check Stats	
Overview	User can check their historical game statistics	
Type	Primary	
Actors	User [Initiator, Primary]	
Properties	Performance	
	Security	
	Other	
Pre-conditions	Server is running, the User has an account and is currently logged in	
Flow	Main Flow: <ol style="list-style-type: none"> <li>1. User clicks/navigates to stats page</li> <li>2. User can view their stats, game records, and sort/manipulate the page</li> <li>3. User can view other players stats by clicking on their profile (located in a game record)</li> </ol>	
	2a User has not played any games and all stats are 0/Null	
Post-conditions	User is shown their stats	
Cross references	Server is running (1),User is logged on(4)	

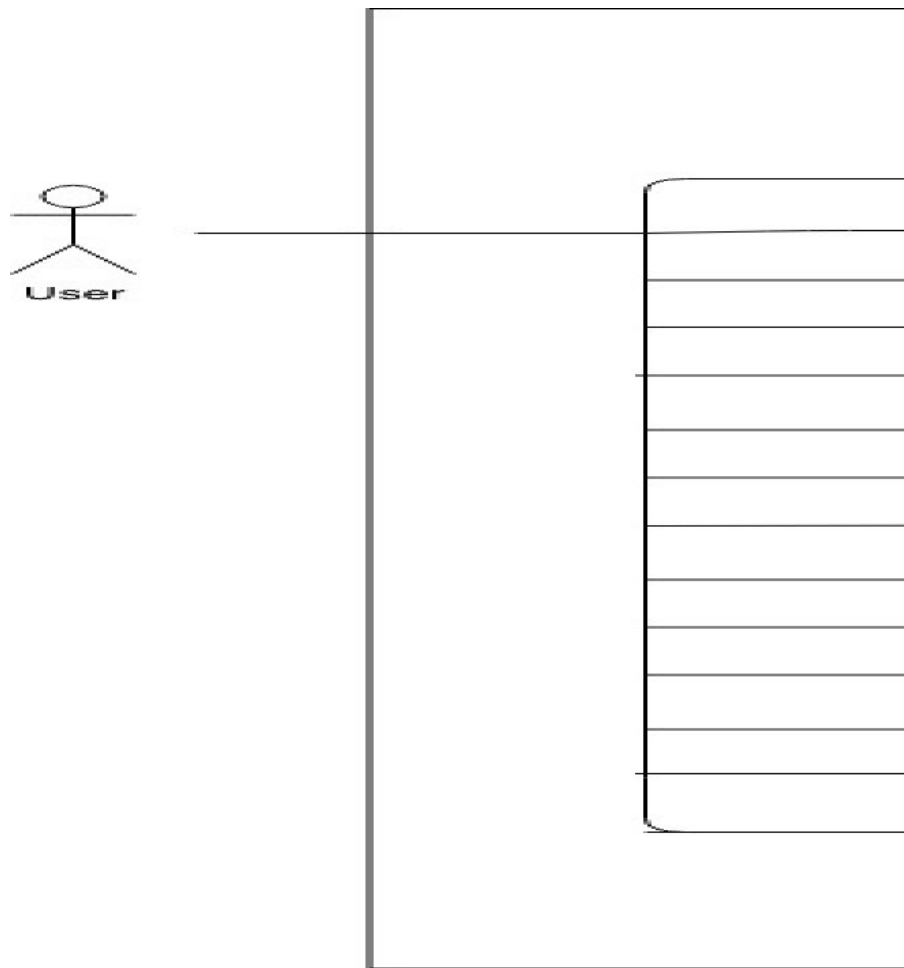
Use Case ID	17
Use Case Name	Delete Account
Overview	User can delete their account from the game
Type	Primary
Actors	User [Initiator, Primary]

Properties	Performance
	Security
	Other
Pre-conditions	Server is running, the User has an account and is currently logged in
Flow	Main Flow: <ol style="list-style-type: none"> <li>1. User requests account deletion</li> <li>2. User is prompted with what all that entails (all user data will be lost)</li> <li>3. User confirms account deletion</li> </ol>
	3a User does not confirm account deletion 3a1 Nothing happens, Return to main menu
Post-conditions	Users account credentials are removed from the system and user data is deleted
Cross references	Server is running (1),User is logged on(4)

#### **New Use Case Diagram**

- **Relationships between actors are now undirected**
- **Removed unnecessary relationships between actors**





**Old Use Case Diagram**

