

UC1: LOG IN

Preconditions: The user exists in the database

Requirements: 3.a.i, 3.b.i

Basic Course

The User navigates to the base url of the website. The system displays the Login Screen. The User enters his or her username and password and clicks the login button. The system verifies the submitted credentials against the Database. Once verified, the system redirects the user to the Administrator Portal if they are an Administrator or the Student Portal if they are a student user.

Alternate Course

- 1) The user entered invalid credentials: The system displays Login Failed Screen. The user may then try to log in again.

UC2: UPLOAD BOT

Precondition: User is logged in.

Requirements: 3.a.ii (1-4)

Basic Course:

The user navigates the Bot Management Screen. The user selects Upload Bot. The system displays the Upload Bot Screen. The User enters the path to their bot source file, selects a language, enters a name for the bot, and any other pertinent information about the bot. The user then clicks Ok. The system verifies user input meets validation rules, then compiles the bot. Once successfully compiled, the system stores the source file, compiled bot, and other bot information to the Database. The system then displays Bot Upload Success Screen.

Alternate Course:

- 1) The bot does not compile. The system displays Upload Error Screen. The User acknowledges the errors. The system redirects the user back to the Upoad Bot Screen.
- 2) The user enters an invalid name for their bot. The system displays the Upload Error Screen.
- 3) The user has reached the max number of bots allowed for the game and the user tried to exceed that limit by uploading another bot. The system displays the Upload Error Screen.

UC3: EDIT BOT

Precondition: User is logged in and user has at least one bot uploaded.

Requirements: 3.a.iv

Basic Course:

The user navigates the Bot Management Screen. The user selects Edit Bot next to the bot they want to configure. The system displays the Edit Bot Screen. The user edits some of the fields and clicks Ok. The system verifies the user's input and updates Database. The system then returns to the Bot Management Screen on success.

Alternate Course:

- 1) The user enters an invalid name for their bot. The system displays the Edit Bot Error Screen.

UC4: DELETE BOT

Precondition: User is logged in and user has at least one bot uploaded.

Requirements: 3.a.v, 3.b.v

Basic Course:

The user navigates the Bot Management Screen. The user selects Delete button next to the bot they want to delete. The system asks for confirmation and the user presses ok. The system then deletes the bot from the database.

Alternate Course:

- 1) The bot should not be running

UC5: ADD GAME MODULE

Requirements: 3.b.ii, 1.a, 1.c

Basic Course:

The admin navigates to the Game Management Screen and selects Upload Game Module. The system displays the Add Game Module Screen. The admin enters a unique name, description of game rules, a java program containing the game logic, a default move delay, and any other pertinent parameters for the Game Module, then clicks Upload. The System verifies the information entered. The system displays the Success Screen. The admin acknowledges the success. The system redirects the admin to the Game Management Screen.

Alternate Course:

- 1) Admin entered a non-unique name. System informs the user of the problem and sends them back to the Add Game Module Screen.
- 2) The uploaded Game program could not be compiled. System displays the Upload Game Error Screen. User acknowledges the problem. SYstem navigates the user back to the Game Management Screen.

UC6: UPDATE GAME MODULE

Precondition: Admin is logged in and Admin has at least one Game Module uploaded.

Requirements: 3.b.ii, 1.a, 1.c

Basic Course:

The admin navigates to the Game Management Screen and selects Edit Game Module. The system displays the Edit Game Module Screen. The admin may change the name, description of game rules, the default move delay, and any other editable parameters for the Game Module. The admin then clicks submit. The System verifies the information entered. The

system displays the Success Screen. The admin acknowledges the success. The system redirects the admin to the Game Management Screen.

Alternate Course:

- 3) Admin entered a non-unique name. System informs the user of the problem and sends them back to the Add Game Module Screen.
- 4) Someone is playing the game. Must stop all instances of the game first.

UC7: REMOVE GAME MODULE

Precondition: Admin is logged in and Admin has at least one Game Module uploaded.

Requirements: 3.b.ii, 1.a, 1.c

Basic Course:

The admin navigates to the Game Management Screen and selects the Delete button for the Game Module they'd like to delete. The system verifies that the game module to be deleted is not included in any upcoming tournaments. The system removes all information included in the game module, but the games name is forever restricted from use in new game modules. The System verifies the information entered. The system displays the Success Screen. The admin acknowledges the success. The system redirects the admin to the Game Management Screen.

Alternate Course:

- 1) The game represented by this game module is currently selected to be used in an upcoming tournament. The system notifies the admin of the problem and directs them to first end any active tournaments before deleting the game module.

UC8: ADD USER ACCOUNT

Precondition: Admin is logged in and Admin has privileges to add another user.

Requirements: 3.b.iii

Basic Course:

Admin navigates to the User Management Screen and select Add User. The system displays the Add User screen. The admin enters the users information and clicks submit. The system verifies that the new username is unique, then adds the user to the system and displays the Success Screen.

Alternate Course:

- 1) The username entered already exists in the system. The system displays an error message to the user and navigates back to the Add User Screen.

UC9: UPDATE USER ACCOUNT

Requirements: 3.a.vi, 3.b.iii

Basic Course:

Admin navigates to the User Management Screen and select Edit User. Or the user selects edit profile. The system displays the Edit User screen. The user edit the information and clicks submit. The system verifies that the information is valid, then updates the user in the system and displays the Success Screen.

Alternate Course:

- 1) Invalid entry for old password, new passwords don't match, or picture file is invalid. System displays an error message describing the problem. The user acknowledges the problem and the system redirects them back to the Edit User Screen.

UC10: REMOVE USER ACCOUNT

Precondition: Admin is logged in and Admin has privileges to remove user and user exists in the system.

Requirements: 3.b.iii

Basic Course:

Admin navigates to the User Management Screen and selects Delete for the user they wish to delete. The system verifies that the user is not currently logged in or enrolled in any current or upcoming tournaments. The system deletes the user from the system and displays the success screen. The admin acknowledges the success and is redirected to the User Management Screen.

Alternate Course:

- 1) User is scheduled for a current or upcoming tournament. The admin is notified that they cannot delete a user that is currently in a tournament.
- 2) User is currently logged in. The admin is notified that they cannot delete a user that is currently logged in.

UC11: ADD TOURNAMENT

Precondition: Admin is logged in and Admin has privileges to add a tournament.

Requirements: 3.b.vi, 2.a, 2.b, 2.c, 2.d

Basic Course:

Admin navigates to the Tournament Management Screen and selects Add Tournament. The system displays the Add Tournament Screen. The admin enters all pertinent information for the tournament and clicks Submit. The system verifies all the informations entered, adds the tournament to the system, and displays the Success Screen.

Alternate Course:

- 1) Dates are inconsistent (upload deadline is past the tournament start date) or the name of the tournament conflicts with an existing tournament. The system notifies the admin of the problem, the admin acknowledges the problem and the system redirects the admin to the Add Tournament Screen.

UC12: UPDATE TOURNAMENT

Precondition: Admin is logged in and Admin has privileges to update a tournament.

Requirements: 3.b.vi, 2.a, 2.b, 2.c

Basic Course:

Admin navigates to the Tournament Management Screen and selects Edit Tournament. The system ensure the Tournament is not currently in progress, then displays the Edit Tournament Screen. The admin enters all pertinent information for the tournament and clicks Submit. The system verifies all the informations entered, updates the tournament to the system, and displays the Success Screen.

Alternate Course:

1. Dates are inconsistent (upload deadline is past the tournament start date) or the name of the tournament conflicts with an existing tournament. The system notifies the admin of the problem, the admin acknowledges the problem and the system redirects the admin to the Edit Tournament Screen.

UC13: DELETE TOURNAMENT

Precondition: Admin is logged in and Admin has privileges to delete a tournament.

Requirements: 3.b.vi

Basic Course:

Admin navigates to the Tournament Management Screen and selects Delete Tournament. The system ensures the Tournament is not currently in progress, then deletes the tournament from the system, and displays the Success Screen. The user acknowledges the success and is redirected to the Tournament Management Screen.

Alternate Course:

- 1) The tournament is currently in progress. The system notifies the admin that the tournament must first be ended before it can be deleted.

UC14: START TOURNAMENT

Precondition: Admin is logged in and Admin has privileges to start a tournament.

Requirements: 3.b.vi, 2.a, 2.b, 2.c, 2.d

Basic Course:

Admin navigates to the Tournament Management Screen and clicks Start for the Tournament they wish to start. The system automatically disqualifies any users who have not yet submitted a bot to participate. Then determines which game instances to start and begins running them. The system then redirects the admin to the View Tournament Page which will default to the real time tournament view.

Alternate Course:

- 1) There are less than two users in the tournament that have uploaded bots. The admin is notified that the tournament cannot be started without at least two participants.

UC15: PAUSE TOURNAMENT

Precondition: Admin is logged in and Admin has privileges to pause a tournament.

Requirements: 3.b.vi, 2.a, 2.b, 2.c

Basic Course:

Admin navigates to the Tournament Management Screen and clicks Pause for the Tournament they wish to pause. The system automatically allows any currently running games to complete but will not start any additional games until the tournament is started again. The system then redirects the admin to the View Tournament Page which will default to the real time tournament view so that they can see the paused tournament.

Alternate Course:

1. There are less than two users in the tournament .that have uploaded bots. The admin is notified that the tournament cannot be started without at least two participants.

UC16: END TOURNAMENT

Precondition: The user is an Admin, is logged in, and there exist an active tournament.

Requirements: 3.b.vi, 2.a, 2.b, 2.c, 2.d

Basic Course:

The admin navigates to the Tournament Management Screen. The admin selects the “End Tournament” button next to a given tournament. The system resolves any active games for the tournament and then marks the tournament as a past tournament rather than an active tournament. The system displays the Success Screen.

Alternate Course:**UC17: VIEW ACTIVE TOURNAMENT**

Precondition: User is logged in and a tournament has been started.

Requirements: 2.f

Basic Course:

The user navigates to the View Tournament Screen. The user selects the tournament they wish to view from the game view list. The system displays the selected tournament on the View Tournament screen.

Alternate Course:

- 1) The tournament gets deleted between the time the user navigates to the View Tournament Screen and the time the user selects the tournament from the list: The system displays an error message. The user selects ok button. The system displays the View Tournament Screen.

UC18: VIEW TOURNAMENT RESULTS

Precondition: User is logged in and a tournament has finished.

Requirements: 2.a, 2.b, 2.c, 2.e, 2.f,

Basic Course:

The user navigates to the Past Tournament Screen. The user selects the tournament they wish to see the results of. The system displays the tournament results on the Past Tournament Screen.

Alternate Course:

- 1) The tournament gets deleted between the time the user navigates to the Past Tournament Screen and the time the user selects the tournament from the list: The system displays an error message. The user selects ok button. The system displays the Past Tournament Screen.

UC20: VIEW GAME INSTANCE OF TOURNAMENT

Precondition: User is logged in and a game is being played in a tournament.

Requirements: 1.b, 2.a, 2.b, 2.c, 2.g, 4.b, 4.c, (2.h, 4.e)

Basic Course:

The user navigates to the View Tournament Screen. The user selects a tournament from the current tournaments list. The system displays the tournament to the View Tournament Screen, noting with games are in progress or finished. The user clicks on one of the games. The system displays the View Game Screen for that game instance.

Alternate Course:**UC21: VIEW GAME INSTANCE RESULTS OF TOURNAMENT**

Precondition: User is logged in and a tournament game has been completed.

Requirements: 2.e, 2.f

Basic Course:

The user navigates to the View Tournament Screen. The user selects a tournament from the current tournaments list. The system displays the tournament to the View Tournament Screen, noting with games are in progress or finished. The user clicks on one of the games. The system displays the View Game Screen for that game instance.

Alternate Course:

- 1) View results for past tournament game instance: The user navigates to the Past Tournament Screen. The user selects the tournament they wish to see the results of. The system displays the tournament results on the Past Tournament Screen. The user clicks on one of the games. The system displays the View Game Screen for that game instance.
- 2) The tournament results gets deleted between the time the user navigates to the View Tournament Screen and the time the user selects the tournament from the list: The system displays an error message. The user selects ok button. The system displays the View Tournament Screen.
- 3) The game instance results gets deleted between the time the user selects the tournament from the list and selects one of the game instances: The system displays an error message. The user selects ok button. The system displays the View Tournament Screen.

UC22: DELETE GAME INSTANCE RESULTS

Precondition: Admin is logged in and there exist a tournament game instance results.

Requirements: 2.e, 2.f, 3.a.v, 3.b.iv

Basic Course:

The admin navigates to the Tournament Management Screen. The user selects the Results Button for the tournament they wish to delete the results for. The system displays the Tournament Results Management Screen. The user selects a specific game instance and presses the Delete Results Button. The system deletes the results for that game instance. If the tournament is still active, the system adds that game instance to the list of game instances that still need to run.

Alternate Course:

UC23: ENTER BOT INTO TOURNAMENT

Precondition: There is a tournament scheduled, the user is on the roster, and the user has at least one bot uploaded

Requirements: 3.a.ii.5

Basic Course:

The user navigates to the Bot Management Screen. The user selects the “register bot for tournament” button next to a bot they wish to upload to a tournament. The system displays the list of current tournaments with the same game type as the bot. The user selects a tournament and hits the register button. The system registers the selected bot as a participant in the selected tournament. The system displays a success message to the user. The user is returned to the Bot Management Screen.

Alternate Course:

- 1) The user has already uploaded a bot for that tournament: The system informs the user that they have already uploaded a bot to the tournament but gives the user the option to override the old bot. If the user selects override then the system removes the old bot from the participation list for the tournament and add the new bot.

UC24: USER PLAYS AGAINST THEIR OWN BOT IN THE TEST ARENA

Precondition: The admin has at least one game module uploaded and the user has at least one bot uploaded for that game.

Requirements:

Basic Course:

The user navigates to the Bot Management Screen. The user clicks the Send Bot to Test Arena button next to the bot they wish to test. The system creates a game instance with the bot and user as the players. The system displays an alternate version of the Test Arena Screen with the ability to get user input. The system plays the game instance, getting moves for one of the players from the user.

Alternate Course:

- 1) Player sends data in the wrong format or inputs an invalid move: The system informs the player of the problem and waits for the player to input a new move.

UC25: BOT PLAYS A GAME

Precondition: The bot exist in the system and the system is executing a game instance with the bot as one of the players.

Requirements: 2.a, 4.b, 4.c, 4.d, 5.a, 5.c

Basic Course:

The system gives the bot the current board via standard in. The bot sends a move to the system via standard out. The system checks that the move is valid. The system updates the board and updates the html page for this game. The system checks that the game is not over. The systems sends the updated board to the other player and gets move. The system validates the move and check that the game is still not over. The system repeats this process until the game is over.

Alternate Course:

- 1) Bot exceeds memory, CPU usage, or time limit: The system disqualifies the bot and marks the other player as the winner.
- 2) Bot does not communicate via standard I/O or sends data in the wrong format: The system disqualifies the bot and marks the other bot as the winner.
- 3) The bot returns an invalid move: The system disqualifies the bot and marks the other player as the winner.