Grading specifications of PA2

## Compulsory GUI Demo Tasks (80pt)

You must demonstrate the following tasks to the TAs. Compulsory demo tasks include those that are related to the main logic of the game, e.g., playing the game, setting default values, validating and replay the history.

Detailed demo procedures are listed below.

**I. Settings and About (12pt)**

(From SettingPane)

1. The “About” message shows properly (+1)
2. The text fields and buttons are arranged properly (+1)
3. Input letters (a-zA-Z) and symbols (e.g., “-”, “+”) in Board Size field, no input shows (+1)
4. Input letters (a-zA-Z) and symbols (e.g., “-”, “+”) in Steps of protection field, no input shows (+1)
5. Input an even number in Board Size field and click “Save” button, popup windows with warning message (+1)
6. Input a number exceeding 26 in Board Size field and click “Save” button, popup windows with warning message (+1)
7. Input 0 to Max Duration field and click “Save” button, popup windows with warning message (+1)
8. Click 2 “Player” buttons, the text is changed properly (+2)
9. Click the “Sound FX” button, the text is changed properly (+1)
10. Click “Return” button, back to the main menu (+1)
11. Click “Settings / About” button, the changed default setting is displayed (+1)

**II. Customized Game Configuration (15pt)**

(From GamePane)

1. The text field “Size of Board” is set as default (+1)
2. The text field “Protection Moves” is set as default (+1)
3. Button “Player 1” is set as default (+1)
4. Button “Player 2” is set as default (+1)
5. Input letters (a-zA-Z) and symbols (e.g., “-”, “+”) in “Size of Board” field, no input shows (+1)
6. Input letters (a-zA-Z) and symbols (e.g., “-”, “+”) in “Protection Moves” field, no input shows (+1)
7. Input even number to the text field “Size of Board” and click “Play” button, popup windows with warning message (+1)
8. Click 2 “Player” buttons, the text is changed properly (+2)
9. Change values in two text fields and 2 “Player” buttons, then click “Use Default” button, the text fields and buttons are changed properly (+4)
10. Click “Return” button, back to main menu (+1)
11. Click “Play” button, enter the game, i.e., show GamePlayPane (+1)

**III. Game Play (46pt)**

(From GamePlayPane).

1. The configuration of game shows correctly, i.e., as set in previous GamePane, not necessarily the default (+1)
2. Before game starts, History is empty (+1)
3. Before game starts, the “Start” button is enabled, “Restart” button is disabled, “Return” button is enabled (+3)
4. Before game starts, the chess board is unclickable (+1)
5. The chess board is displayed with customized size as set in previous GamePane (+1)
6. The knight and archer chesses are arranged alternately within the first and last rows with correct colors (+2)
7. The center place is displaced (+1)
8. When a piece is clicked, highlight the board (+1)
9. When a piece is dragged, highlight its path (+1)
10. Under human-human mode, move knight pieces in both colors, the pieces can be moved with sound effect (+2)
11. Under human-human mode, move knight pieces in both colors, when breaking rules, the pieces cannot be moved and popup window with error messages (+2)
12. Under human-human mode, move archer pieces in both colors, the pieces can be moved with sound effect (+2)
13. Under human-human mode, move archer pieces in both colors, when breaking rules, the pieces cannot be moved and popup window with error messages (+2)
14. Under human-human mode, kill enemies by knight pieces in both colors (+2)
15. Under human-human mode, kill enemies by archer pieces in both colors (+2)
16. Under human-human mode, take the center then move out by knight pieces, popup window showing winner and play the sound effect (+3)
17. When game starts, time start ticking correctly (+1)
18. Under human-human mode, when either player wins the game, click the “Start New Game” button, the game is initialized properly (+1)
19. Under human-human mode, when either player wins the game, click the “Return to Main Menu” button, return to main menu (+1)
20. Under human-human mode, move pieces which are not belong to the current player, popup windows showing error message (+1)
21. “Export Move Records” button works fine, the record can be properly saved (+1)
22. The saved move record is displayed in correct format (+1)
23. The history field is updated after each move correctly (+1)
24. Click “restart” button, chess board and game information are initialized, text field is cleared (+1)
25. Click “restart” button then click “start” again, time ticks normally (+1)
26. Under human-computer mode, both players work fine (+1)
27. Under computer-computer mode, the chess board is unclickable (+1)
28. Under computer-computer mode, both players work fine (+1)
29. The information shown in GameInfoPane (including scores, time elapsed and current player) is updated correctly (+4)
30. Click “Return” button, popup a window warning the game progress will be lost, click “Cancel” button returns to the game, click “OK” back to main menu (+2)
31. Disable sound FX in Settings / About pane, play the game again, no sound effects will be played (+1)

**VI. History Record Validation (10pt)**

(From ValidationPane)

1. Initially, the “Load file” button and “Return” button are enabled, “Validate” button and “Replay” button are disabled (+1)
2. Click “Load file” button, the file can be loaded (+1)
3. After file is loaded, “Validate” button is enabled (+1)
4. Given a correct record, click “Validate” button, popup a window showing “Pass validation” message (+1)
5. Given an incorrect record, click “Validate” button, popup a window showing the reason why it is invalid (+2)
6. When a given record pass validation, the “Replay” button is enabled (+1)
7. Click “Replay” button, the replay function works fine (+2)
8. Click “Return” button, back to main menu (+1)

**V. Main menu (2pt)**

(From MainMenuPane)

1. Buttons “Play Game”, “Settings / About” and “Validation” works properly, i.e., show the correct panes (+1)
2. Button “Quit” ends the game (+1)

**VI. Bonus Tasks (Bonus 15pt)**

**(a) Bonus Task 1 - Countdown timer (5pt)**

* Time counts down correctly
* When player changes, counting down restarts
* When times up for one player, popup a window to show the current player has run out of time and lose the game

**(b) Bonus Task 2 - Automatic player change (5pt)**

* When current player finishes, next player gets control of the game without clicking extra buttons
* When next player is computer, making a move and passing the controls to next player automatically

**(c) Bonus Task 3 - Smarter Random Player (5pt)**

* State the **reasonable** rules of the smarter strategy (1pt)

[Update at Oct 23, 2020]

* Implement Random Player vs Smart Random player under three configurations:
  + Board size: 15 \* 15, Protected steps: 10, Random Player plays first
  + Board size: 15 \* 15, Protected steps: 20, Random Player plays first
  + Board size: 15 \* 15, Protected steps: 40, Random Player plays first
* Exports move records of the above 3 settings in which **Smart Random player wins**, saving under `src/main/records/` naming as winRandom[boardSize].txt (e.g., winRandom10.txt)
* [Grading schema] (4pt)
  + Your score = 4 \* (2N – M) / M, where
  + N is the **average** **minimal** number of steps over the above 3 configurations taken to win the Random player among ALL submitted assignments
  + M is **your** **average** number of steps over the above 3 configurations taken to win the Random player
  + If (2N - M) < 0, then your score = 0.

**Note**: The implementation is flexible, you could choose the way yourself (e.g., adding a button to GamePlayPane to set such play mode, or adding buttons in GamePane, etc.)

* When submission, you need to

## Demonstration Logistics

* Enter the zoom meeting 5 minutes before your timeslot to get ready. You will be put in a waiting room.
* Enable video and audio, make sure the sound effect of your computer is on.
* Before start, you will be given three files by TAs through Zoom, save them before start.
  + The three files will be either correct or incorrect records.
  + Every student will be randomly given these files, so it is possible you receive different files from others.
  + They are given aiming at testing the validation function.
* After screensharing, show the IntelliJ first, and click git pull (or use command line) to make sure the project you are using for demonstration is yours and stays unchanged after submission.
  + \*\* Please remember to push your project to the repository before deadline, the time of last commit will be checked. \*\*
* Demonstrate the GUI functions in the steps as shown above (A. Compulsory GUI Demo tasks).
* The movement of pieces can be customized as long as the movements satisfy the required functions (e.g., to kill enemies by knight pieces, you can move whichever knight pieces you like, as long as it kills an enemy piece)
* When validation, you should load the three files given by TAs and validate them one by one.