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Computer Science (B.S)

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Requirements Specification

1.
    a. Type – Appearance
    b. Description – Create an 8x8 visual board that the game will be played on.
    c. Rationale – The game needs a board that will be played on. This will make it easier for the players to visualize the game and make moves.
    d. Fit Criterion – The board will be visible once it is implemented.
    e. Priority – High
    f. Dependencies – n/a
2.
    a. Type – Appearance
    b. Description – Create the pieces (red or black dots) that players will use to move.
    c. Rationale – The players need to know where their pieces are.
    d. Fit Criterion – The pieces will be visible once they are implemented.
    e. Priority – High
    f. Dependencies – 1
3.
    a. Type – Functionality
    b. Description – When a player clicks on their piece, they can then move it.

c. Rationale – Players must be able to move their pieces.

d. Fit Criterion – The piece will have a Boolean property that will determine if it has been selected or not.

e. Priority – High

f. Dependencies – 7

4.

a. Type – Functionality

b. Description – When a player clicks on an open space after they selected one of their pieces, that piece moves to the open space that was clicked on. The turn will then end.

c. Rationale – Players need to be able to move their pieces.

d. Fit Criterion – The selected piece will be moved to the desired open space.

e. Priority – High

f. Dependencies – 3, 7

5.

a. Type – Functionality

b. Description – If a player clicks on a piece and then clicks on a part of the screen that is not an open space, the piece will no longer be moveable.

c. Rationale – Players may select a piece to move and then change their mind.

d. Fit Criterion – The Boolean property of the piece will be set to false.

e. Priority – High

f. Dependencies – 3

6.

a. Type – Functionality

b. Description – If a player’s piece reaches the opponent’s side of the board, that piece will turn into a king.

c. Rationale – King pieces are a critical part of the game of checkers.

d. Fit Criterion – The piece will have a Boolean property that determines whether it is a king piece.

e. Priority – High

f. Dependencies – 7, 8

7.

a. Type – Functionality

b. Description – The board will be implemented as a 2-dimensional array of Booleans. Each entry in the array can either be a 0 (space is empty) or 1 (space is occupied).

c. Rationale – Implementing the board as a 2-dimensional array is the easiest way to visualize the board and where pieces are for me. This will also make it easier when selecting pieces to move.

d. Fit Criterion – Program will run without error if this is implemented correctly.

e. Priority – High

f. Dependencies – n/a

g. Type – Functionality

h. Description – A “piece” class will be created containing information about pieces such as which team they are on, whether they have been selected, whether they are a king, etc.

i. Rationale – This will make it much easier for me to write code for the rest of the project.

j. Fit Criterion – Program will run without error if this is implemented correctly.

k. Priority – Medium

l. Dependencies – n/a

8.

a. Type – Functionality

b. Description – Players will be prompted to double or triple jump if possible.

c. Rationale – Double and triple jumping is an essential part of the game of checkers.

d. Fit Criterion – The spaces that can be used to double and triple jump will be highlighted.

e. Priority – High

f. Dependencies – 1, 4, 7

9.

a. Type – Functionality

b. Description – Pieces will be able to move forward and diagonally forward.

c. Rationale – Pieces need to be able to move.

d. Fit Criterion – Pieces will visibly move.

e. Priority – High

f. Dependencies – 9

10.

a. Type – Functionality

b. Description – The king piece will be able to move diagonally, forwards, and backwards.

c. Rationale – King pieces are an essential part of the game of checkers.

d. Fit Criterion – Pieces will visibly move.

e. Priority – High

f. Dependencies – 9

11.

a. Type – Functionality

b. Description – Two players will be connected to each other to play.

c. Rationale – Players need to be connected to play.

d. Fit Criterion – Players will not join the game until they are connected.

e. Priority – High

f. Dependencies – n/a

12.

a. Type – Functionality

b. Description – Players will capture the opponent's pieces by hopping over it.

c. Rationale – The most important part of checkers is capturing pieces.

d. Fit Criterion – A "piece captured" message will appear on the screen when a player captures a piece.

e. Priority – High

f. Dependencies – 10

13.

a. Type – Usability

b. Description – If a player clicks on one of their pieces and that piece can capture an opponent piece, the space where they should jump will be highlighted.

c. Rationale – This will make it a lot easier for players to see where they should jump.

d. Fit Criterion – The spaces will be highlighted yellow.

e. Priority – Medium

f. Dependencies – 3

14.

a. Type – Functionality

b. Description – The game will end once a player has captured all the opponent’s pieces.

c. Rationale – The game needs to end.

d. Fit Criterion – A message saying the game is over will come up on the screen.

e. Priority – High

f. Dependencies – None