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Gruppe: 11

Einführung in die Programmierung
ÜBUNGSBLATT 5
Vier gewinnt

Documentation about SinglePlayerMode:

Plan:
1. 11/28 – Get a better understanding of the game and determine the basic structure of the program
2. 11/29 – Finish the initiating part of the program
3. 12/01 – Finish everything except single player mode.
4. 12/02-12/07 – Single player mode
5. 12/08 – User Guide and Test

Structure of the program:
1. Initiating:
   a. Generate a chess board of 9*10
   b. User input names of 2 players, 2 players are represented by 2 colors – red and yellow

2. Game start (double player mode):
   a. Start with player 1(yellow)
   b. The current player:
      i. Drop his/her disk at column i of the board
         - Check if column i is valid for dropping a disk:
            - $1 <= i <= 10$
            - The total number of disks in this column $<= 9$
         - If true, drop the disk at column i
         - If not, tell him/her to choose a new column to drop the disk
      ii. Check if this player has won the game:
         - 1. The pattern on chess board matches one in the question.
      iii. Check if the chess board is full:
         - If every place at the first row are taken, it's full
            - if yes, empty the chess board and restart the game
            - If not, move on
      iv. Next round

2. Game start (single player mode)
   a. Start with player 1
   b. *for further information look above in double player mode*
   c. next round:
      i. if just one player and its the turn of the KI it starts calculating:
         - looks at every possible field to drop a coin
            - calculates all possible figures
            - if he chooses one column:
               - looks at every field where other player is able to drop a coin
               - calculates best field to drop
                  —> chooses a column

* attached you will find additional information in a handwritten note (about how the KI calculates all possible figures for each field where a player is able to drop a coin!)