OOP 2021 final assignment

A card game

Spec

Your task is to program a simple card game with the C# language. The game can be thought of like a simplified version of the Trick-taking game.

The game has two players and both try to match each others cards. First, one player selects a card from their hand. Then the other player tries to match the card by picking a card from their own hand. If the card that player two chose has the same *suit* as the card chosen by player 1 *and* the *rank* is greater than the rank of player ones' card, player two gets one point. In all other cases player one gets one point. So, first match suits then ranks. The cards won't go back to the hand, they are discarded.

```
The player chose 12 of clubs

The AI chose 8 of spades

AI picked a card with different suit! One point for the player!
```

```
The player chose 4 of clubs

The AI chose 11 of clubs

AI scored one point!
```

The player who won the previous round, gets to start the next one. The player to start the first round is player 1 (or the human in this case). The process is repeated until hands are depleted.

In the beginning of the game player one gets to select how many cards are drawn from the top of the shuffled deck in to both players' hands. The count must be between 1 and the half the size of the deck.

```
[The size of the hands: 5

42 cards left in the deck.
```

Notes

- Print what cards got selected

- Let the players know who won the round (with total scores so far)

- After game over, print out the winner

    - Don't start a new game, just exit the application

- In this case one player is human and the other is the computer (AI!)

    - The computer can be totally dumb and just pick a card at random from its hand

    - (After you've turned the task in I highly encourage you to implement some logic in to the computer player)

- In the beginning of each round, print the human players' hand (you know, so that the user knows what card to play)

    - Also give a help text on HOW to select a card, if it's not easy to understand

    - Don't print the AI's hand (because that would be cheating)

- You can use the code at https://github.com/Juho-courses/OOP-2021/tree/main/00-exercise-solutions/DeckOfCards as starting point if you want to

    - This has no negative or positive effect for the grading

- Create the game itself in its own class. The game is started by calling a `Start` -method in the `Main` -method of the `Program.cs` -file

- This is **not** a group assignment

- No need to do error handling

    - You can assume that the user always gives a valid input (ie. a number when asked for one)

Returning the assignment

You can return the assignment either as a link to a git repository or as a zip-file. Not both, only one or the other.

- Git repo

  - If a private GitHub repo, make sure the account `juhosa` has the rights to clone the repo

- Zip file

  - Anything else than a zip file will not be evaluated

    - Changing the file extension **doesn't** make the file into a zip file, it only changes the name

- Both

  - Your submission must include only the necessary files, for example

    - The `.cs` -files

    - The `.csproj` -file

    - The `.gitignore` -file (if needed)

  - For example the `bin`, `obj` and `.vscode` directories are not necessary for the project to run

  - The files are in the project directory

    - The directory is the one you zip or commit to git

Grading

- The program must compile and start without errors

- The game logic is in its own class

- I'm looking for object-oriented structure in you code

  - At least classes for a deck, a card, a hand and the game

  - All classes in their own files

  - File names must represent the content in them

- The game works as specified and detailed in the notes