Compsci 130 Assignment 1

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Adjustments to the solitaire from code runner:

The original solitaire game from code runner has been modified to be more akin to a traditional game of solitaire. This has been achieved by adding a new class “Card” which meant both the Solitaire class and Cardpile classes also needed to be modified. I also added a basic menu system as well as changed the display method to display the game vertically.

The card class stores the number and suit of each card. It also stores data which makes processing the cards in other classes easier, such as colour and display number. It also includes a string method to decrease the logic required in the display method.

The CardPile class received minor changes to do with processing the card class instead of integers. It also includes a shuffle method to randomize the list of cards.

The solitaire class was modified to be used with a full set of 52 cards; this involved modifying the move method to now check for the colour. So that now you can only make a move if the number at the top of the origin pile is one less than the value at the bottom of the destination, and the colour must not be the same. I also removed the functionality to modify a pile by swapping the position with itself; I kept this functionality for the draw pile. This was changed as it did not really make sense with the addition of suits and the general aim of reforming the program into a more traditional game of solitaire. The complete method has also been changed to identify four piles with 13 cards in them and an empty draw pile. The move function also no longer errors out when inserting a non-integer value; it also does not use a move. But if the positions are valid and a card is not able to move due to the rules, a move is used.

The display method in the solitaire class has been overhauled to present the game vertically, as it conventionally is. This presented a variety of challenges regarding spacing and finding the value of the card at each level, and printing them as a single string. It also presented issues with the draw pile as by accessing the lower, it would print their value and not an Asterix as its initial implementation in code runner did. There was also a problem with the number 10 as it was the only digit with a five-character display name this created issues with aligning the piles. So, I opted to replace it with its roman numeral “x” instead of making the game look wonky. The display in the terminal also clears itself after every move as to only display the current state of the game. Lastly, the draw pile shows a max of 3 Astrixes and will show the respective number of cards in the draw pile once the draw piles size is less than 3.

The menu system is simple and runs the control structure of the game. When the player types 1, the program runs an initializer function which creates the deck of cards, randomizes it and starts the

game of solitaire. Once the game is over, you will be prompted to hit enter to return to the menu. Typing two prints out the instructions, I recommend looking at these before you start to familiarize yourself with a couple of quirks of the program. The exit option returns the main function and ends the program.

Closing remarks, I recommend playing the game in the terminal and not the editor. Other than that, enjoy testing. I increased the max number of moves up to 4x the size of the deck to make it easier. Theoretically, it should be possible to win every game unless you waste moves.