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W200 – Benoit – Mon 6:30pm
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Phỏm Card Game

Project Proposal:

Recently, I was introduced to a Vietnamese, Rummy-style card game called Phỏm (pronounced f-AUm). This is a two to four player card game that is played with a standard deck of cards. The objective of this game is to exchange cards in a hand to form combinations of “matching sets”, also known as “phỏms”. The more matching sets you have in your hand, the less unmatched or “free” cards you have. At the end of the game, you count the number of unmatched cards in your hand and the player with the least number of points wins the game.

There is an additional level of complexity in this game which would make it suited for this project proposal. The game starts off with each player having nine cards in their hands. During a player’s turn they have two options: they can draw “hit” a card, from the deck and discard one from their hand, or they can pick up, “meld”, a card from the discard pile of the player to their right. If the player chooses to “meld”, they must have a “matching set” to back it up at the end of the game or risk “burning” (losing the game entirely). Also, a “matching set” cannot have two “melded” cards. The game ends when a player has four cards in their discard pile. In addition, when a player has discarded their fourth card, they must reveal all their “matching sets”. Once they do so, any player that still has a turn afterwards can “throw” a card in their hand at any exposed matching sets if they are able to (matching numbers, continuing a straight, etc.), to lessen the score in their own hand. Because the game technically ends on a forth discard or four rounds, “melding” can cause confusion in the rounds left in the game. This program will take care of the rounds internally and display the current round. After each player has played their fourth discard card, the matches are shown and the “free” cards are tallied. The winner is the one who has at least one “matching set” and the lowest total number of points.

This implementation will be a slight variation of the game in the linked reference. This will be a text based card game utilizing the command line window. However, if time allows I would like to create an interactive GUI displaying the cards with actual images/ASCII art that would allow for quicker interpretation for matching cards in the hand. The interface for the user will be a simple set of commands utilizing the single keyboard shortcuts (1 – Draw a card, 2 – meld a card, 3 – display hand, 4 – display board, etc.). The game will continue until a user quits or after displaying the game end condition.

References: <https://www.vinagames.com/phom.php>

Card Point Values:

Card	Points								
A	1	4	4	7	7	10	10	K	13
2	2	5	5	8	8	J	11		
3	3	6	6	9	9	Q	12		

Game Implementation Structure

class PlayingCard:

"""Creates a playing card instance with a specific suit and rank"""

```
def __init__(self, value, suit)
def __eq__(self, other)
def __lt__(self, other)
def __gt__(self, other)
def __str__(self)
    Properly displays a card for use in playing the game.
def __repr__(self)
    Properly displays a card for use in playing the game.
```

class Hand:

"""Instance of all the hand actions one can perform when playing a card game."""

```
def __init__(self, cardList)
def dispMatches(self):
    Displays number of current matching sets in the hand.
def orderCards(self, position1, position2):
    Switches the order of two cards to allow player readability and matching.
def displayHand(self):
    Displays the player's current hand.
def dispDiscard(self):
    Displays the player's discard pile.
def score(self):
    Adds up the number of points in the player's hand.
def __str__(self)
    Properly displays a hand.
def __repr__(self)
    Properly displays a hand.
```

class Deck:

""" Creates a deck of 52 playing card instances with no repeats of one """

def __init__(self)

def shuffle(self)

Shuffles the deck at random to prepare for playing a game.

def draw(self, num=1)

Draws a set number of cards based on the num argument entered.

class CardGame(Deck):

""" Creates a game instance that utilizes a deck of cards """

def __init__(self, playerCount):

def dealCards(self, num):

Deals a 'specific number of cards to the number of players.

def setRound(self):

Increments the number of rounds played

def getRound(self):

Returns the current round

def gameEnd(self):

Placeholder method for a game end condition.

class Phom(CardGame):

""" Creates a Phom game instance that extends a type of CardGame with extra functions """

def __init__(self, playerCount):

def dispChoice(self):

Displays the previous opponent's top discard card.

def dispPlayed(self):

Displays all the discarded and melded cards.

def hit(self):

Calls the parent class's Draw function.

def meld(self):

Takes the opponent's top discard card. Calls roundCounter. Reorganize the discard pile size.

def gameEnd(self):

Checks for the game end condition. Then calls Hand.dispMatches and Hand.score for that player.

def score(self, Hand):

Displays the final score and announces the winner.

def display(Phom):

if __name__ == "__main__":

Initialization and displays the current game progress

References: <https://www.vinagames.com/phom.php>