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MACQUARIE UNIVERSITY INTERNATIONAL COLLEGE ASSESSMENT

Fundamentals of Computer Science (WCOM125)

ASSESSMENT DETAILS

Unit Name:	Fundamentals of Computer Science		Unit Code:	WCOM125
Assessment Task:	Assignment 2		Term & Year:	T4, 2017
Total # Pages:	6	Total Marks:	100	Weighting:	10%
Due:	11:45 PM Friday	Week 6		

INSTRUCTIONS

You are provided with the starting point in cardGameTemplate.zip. Import the project assignment2cardGameTemplate into Eclipse. The three files that you need to modify (in that order) are:

    a. Card.java
    b. Deck.java
    c. Game.java (HD level)

Card.java (45 marks)

This class encapsulates or represents a playing card. Each playing card has two attributes:

    1. Suit: can be lung, stone, tree or fork,
    2. Rank: can be any integer between 5 and 20.

You need to complete the following methods. The requirements for each method are provided as Javadoc headers. If you have any doubts about the descriptions, comment on the WCOM125 iLearn discussion forum.

    1. setSuit(String): 5 marks
    2. setRank(int): 5 marks
    3. Card(): 5 marks
    4. Card(String, int): 5 marks
    5. getSuitWeight(): 5 marks
    6. compareTo(Card): 10 marks
    7. toString(): 10 marks

A bit about compareTo – lung beats stone, stone beats tree, and tree beats fork. If both cards (calling and parameter object) are of the same rank, the card with the 'stronger' suit beats the card with the 'weaker' suit. The method getSuitWeight() will be useful to complete the compareTo method. The compareTo() will be useful when completing Game.java.

Deck.java (40 marks)

This class stores a list of cards. You need to complete the following methods (just like Card.java, any confusion regarding the Javadoc should be raised on iLearn discussion forum).

1. Deck(): 10 marks
2. getRandomCard(): 10 marks
3. shuffle(): 10 marks
4. deal(int): 10 marks

Game.java (15 marks)

This class is the client program and is for HD level submissions. You need to design a client that simulates a card game between two players. The game plays like this:

- Each player gets a HAND of 6 cards.
- Players take turns placing their cards into the POT.
- When a player places a card the same RANK as the most-recently-placed card (the card the other player just put down), then whoever's card has a higher SUIT gets a point, and the round is over.
- If both players run out of cards without the above happening, neither player gets a point, and the round is over.
- When the round is over, put all cards from the POT back into the DECK, shuffle the DECK, discard any cards left in the players' HANDs, and deal both players new HANDs, and start a new round.
- When there aren't enough cards left in the DECK to deal two full HANDs, the game is over, and the player with the most points wins.

round 1
Player 1: [13 of trees, 18 of forks, 6 of trees, 6 of forks, henchman of forks, 11 of trees]
Player 2: [16 of stones, 5 of lungs, 12 of lungs, 7 of trees, 17 of trees, 7 of stones]
Player 1 plays 13 of trees
Player 2 plays 16 of stones
Player 1 plays 18 of forks
Player 2 plays 5 of lungs
Player 1 plays 6 of trees
Player 2 plays 12 of lungs
Player 1 plays 6 of forks
Player 2 plays 7 of trees
Player 1 plays henchman of forks
Player 2 plays 17 of trees
Player 1 plays 11 of trees
Player 2 plays 7 of stones
Out of cards. Dealing new hands.
round 2
Player 1: [8 of trees, henchman of stones, 11 of lungs, 15 of lungs, 10 of trees, 13 of forks]
Player 2: [henchman of trees, 9 of stones, 16 of lungs, boss of lungs, 18 of trees, 12 of forks]
Player 1 plays 8 of trees
Player 2 plays henchman of trees
Player 1 plays henchman of stones
Clash!
Player 1 gets a point!
Out of cards. Dealing new hands.
round 3
Player 1: [boss of trees, 5 of trees, 14 of stones, 5 of forks, 16 of trees, 9 of trees]
Player 2: [17 of stones, 10 of lungs, 14 of trees, 18 of stones, 12 of stones, 14 of lungs]
Player 1 plays boss of trees
Player 2 plays 17 of stones
Player 1 plays 5 of trees
Player 2 plays 10 of lungs
Player 1 plays 14 of stones
Player 2 plays 14 of trees
Clash!
Player 1 gets a point!

Out of cards. Dealing new hands.
round 4
Player 1: [6 of lungs, henchman of trees, boss of trees, 13 of lungs, 17 of forks, 7 of forks]
Player 2: [11 of forks, 8 of lungs, 10 of lungs, 14 of forks, 7 of lungs, 15 of forks]
Player 1 plays 6 of lungs
Player 2 plays 11 of forks
Player 1 plays henchman of trees
Player 2 plays 8 of lungs
Player 1 plays boss of trees
Player 2 plays 10 of lungs
Player 1 plays 13 of lungs
Player 2 plays 14 of forks
Player 1 plays 17 of forks
Player 2 plays 7 of lungs
Player 1 plays 7 of forks
Clash!
Player 2 gets a point!
Out of cards. Dealing new hands.
round 5
Player 1: [henchman of trees, boss of trees, 8 of stones, 13 of stones, 11 of forks, 17 of forks]
Player 2: [17 of stones, 12 of trees, 11 of stones, 16 of forks, 17 of lungs, henchman of lungs]
Player 1 plays henchman of trees
Player 2 plays 17 of stones
Player 1 plays boss of trees
Player 2 plays 12 of trees
Player 1 plays 8 of stones
Player 2 plays 11 of stones
Player 1 plays 13 of stones
Player 2 plays 16 of forks
Player 1 plays 11 of forks
Player 2 plays 17 of lungs
Player 1 plays 17 of forks
Clash!
Player 2 gets a point!
Out of cards. Dealing new hands.
round 6
Player 1: [boss of forks, henchman of trees, 16 of forks, boss of trees, 13 of lungs, 7 of lungs]
Player 2: [11 of stones, 6 of stones, 12 of trees, 6 of lungs, 18 of lungs, 14 of trees]
Player 1 plays boss of forks
Player 2 plays 11 of stones
Player 1 plays henchman of trees
Player 2 plays 6 of stones
Player 1 plays 16 of forks
Player 2 plays 12 of trees
Player 1 plays boss of trees
Player 2 plays 6 of lungs
Player 1 plays 13 of lungs
Player 2 plays 18 of lungs
Player 1 plays 7 of lungs
Player 2 plays 14 of trees
Out of cards. Dealing new hands.
round 7
Player 1: [8 of forks, 5 of stones, 9 of forks, 11 of forks, 14 of forks, boss of stones]
Player 2: [17 of stones, 10 of lungs, 8 of stones, 9 of lungs, 15 of stones, 10 of forks]
Player 1 plays 8 of forks
Player 2 plays 17 of stones
Player 1 plays 5 of stones
Player 2 plays 10 of lungs
Player 1 plays 9 of forks
Player 2 plays 8 of stones
Player 1 plays 11 of forks
Player 2 plays 9 of lungs
Player 1 plays 14 of forks
Player 2 plays 15 of stones
Player 1 plays boss of stones
Player 2 plays 10 of forks

Out of cards. Dealing new hands.
Game over!
Player 1: 2 points.
Player 2: 2 points.
It's a tie!

IMPORTANT: You MAY add more methods in your classes.

NATURE OF THE TASK

Individual assessment

HURDLE ASSESSMENTS

Not a hurdle assessment

MATERIALS REQUIRED / SUGGESTED RESOURCES

Lectures from session 1.1, to 4.2

HOW TO PRESENT YOUR ASSIGNMENT

Complete the template by completing the tasks described in earlier sections.

SUBMISSION INSTRUCTIONS

Export the entire project to assignment2.zip and upload the zip file on iLearn.

We will deploy plagiarism detection tools and ANY submission flagged for plagiarism will be reported to the university.

LATE SUBMISSIONS

Late submissions are not accepted. If you cannot submit the assignment in time due to unavoidable circumstances, apply for Disruption to Studies via ask.mq.edu.au
Note: take the Professional Authority Form to the doctor if requesting extension on medical grounds. The form is available at:

http://www.mq.edu.au/__data/assets/pdf_file/0009/183375/professional_authority_form_paf.pdf

RETENTION OF RECORDS

Student are required to keep a copy of all items submitted or completed for the purpose of assessment or evaluation until the end of the grade appeal period.

INFORMATION ABOUT HOW AND WHEN FEEDBACK WILL BE PROVIDED

Feedback will be provided within one week via iLearn. Please note that the JUnit tests provide instant feedback on your code.

ACADEMIC HONESTY

Using the work or ideas of another person, whether intentionally or not, and presenting them as your own without clear acknowledgement of the source is called Plagiarism.

Macquarie University promotes awareness of information ethics through its Academic Honesty Policy. This means that:

- all academic work claimed as original must be the work of the person making the claim
- all academic collaborations of any kind must be acknowledged
- academic work must not be falsified in any way

when the ideas of others are used, these ideas must be acknowledged appropriately.

All breaches of the Academic Honesty Policy are serious and penalties apply. Students should be aware that they may fail an assessment task, a unit or even be excluded from the University for breaching the Academic Honesty Policy.

EXPECTATIONS OF STUDENTS

Students are responsible for their learning and are expected to:

- actively engage with assessment tasks, including carefully reading the guidance provided, understanding criteria, spending sufficient time on the task and submitting work on time;
- Read, reflect and act on feedback provided;
- Actively engage in activities designed to develop assessment literacy, including taking the initiative where appropriate (e.g. seeking clarification or advice, negotiating learning contracts, developing grading criteria and rubrics);
- Provide constructive feedback on assessment processes and tasks through student feedback mechanisms (e.g. student surveys, suggestions for future offerings, student representation on committees);
- Ensure that their work is their own; and
- Be familiar with University policy and faculty procedures and act in accordance with those policy and procedures.

MARKING CRITERIA

You will be assessed according to the criteria provided below:

MARKING GUIDE

85 marks: Correctness of methods in Card.java and Deck.java as tested by test cases in CardTest.java and Deck.java respectively.

15 marks: Game.java output is comparable with sample output provided.