

**EE2E1 Resit Assignment.**

**June/July 2012/13**

You are required to produce a console based Java application to demonstrate the simple card game *Pairs*. A playing card has a *value* which runs from the ace, two, three … ten, jack, queen and king and a *suit* which is hearts, diamonds, spades and clubs. There are 52 cards in a complete deck. The application should produce suitable screen output to show the game being played. Once the game is started, it requires no user interaction and runs to a conclusion.

The game of Pairs is one of pure chance and its rules are as follows. It is a game for two players only. All of the cards in the shuffled deck are dealt alternately to each player so each player starts with a deck of 26 cards. One player is randomly chosen to play first and he lays down the top card from his deck face up. The second player lays his card face up on top of the first card. If the face value of the two cards is the same (for example a ten of clubs and a ten of hearts), the second player takes all the cards in the pile (in this case there are only two cards) and puts these cards on the bottom of his deck. The game continues with each player alternately laying down their top card and the player whose card matches the previously laid card in face value, ‘wins’ all of the cards in the pile and those cards go to the bottom of his deck. The player who ends up with no cards loses.

You will be expected to produce an object oriented solution to this assignment. **A** **procedural solution will result in you failing this assignment**. In order to allow you to structure your program, I have produced an outline template of the classes required. **You must use these classes in your program** and it will be up to you to decide on suitable fields and methods of these classes as well as the interactions between objects of these classes in order to implement the card game. You will also need a test class containing a main method. Thus your complete solution must comprise **5 classes** in total.

*class PlayingCard*

{

}

*class DeckofCards*

{

}

*class Player*

{

}

*class CardGame*

{

}

Assessment

Assessment will be on the basis of an assessment of the functionality of your program and the code which you have produced. You are required to submit your source code (.java file) via WebCT. Any special instructions for running your program must be included in a text file. Since this is a console based application, this should not really be necessary.

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***EE2E1***

**Java Programming**

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| --- | --- | --- |
| **Code**   * PlayingCard class * Player class * DeckOfCards class * CardGame class * Test class   **Sub-total**  “Correct use of classes and implementation efficient” |  | 5 /5  4 /5  8 /10  12 /15  4 /5  33 /40 |
| **Program Functionality**  Some, full, extended  “Almost full functionality but console output not informative” |  | 20/30 |
| **Total** |  | 53 /70 |

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