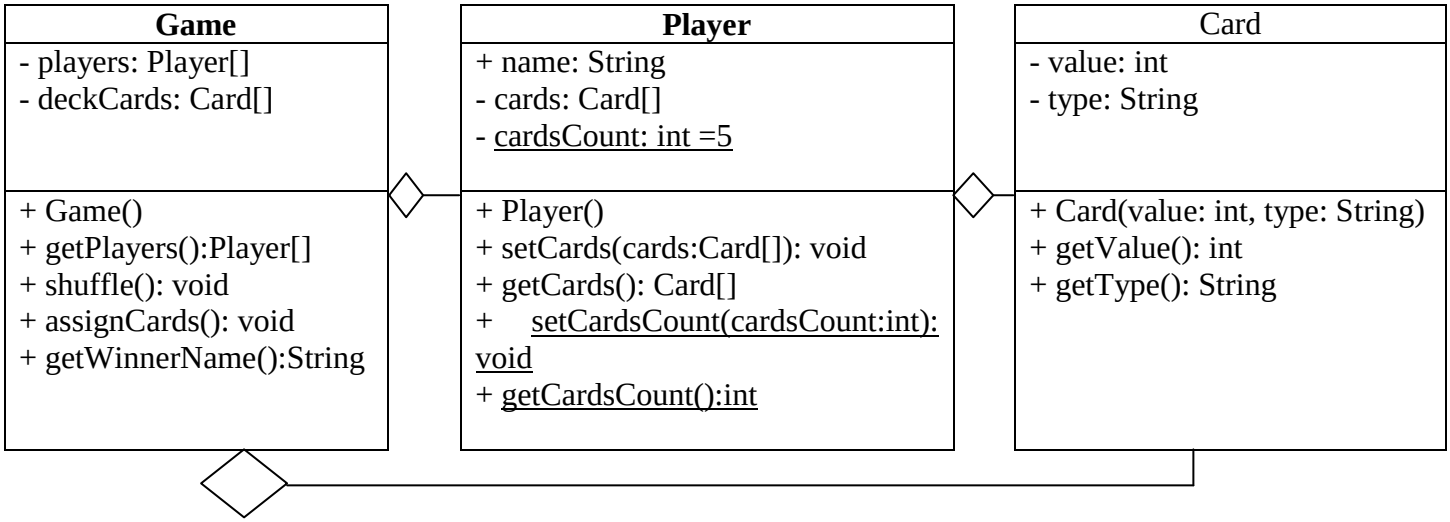
60 Minutes	Object-Oriented Problem Solving Lab Midterm Exam	Spring 2018 March 27th
رقم الجهاز:	الرقم الجامعي:	الاسـم :

Write a Java program that implements the system shown in the following UML class diagram, which represents a cards game:



1. **For the *Player* class:**
   - **The constructor should initialize the player name by reading it from the user. You should prompt the user to enter the name with the sentence "Please enter player name:". Note that the array cards will not be initialized in the constructor.**

2. **For the *Game* class:**

- **The constructor should:**
  a. **Prompt the user to enter the number of players which specifies the size of the players array.**
     - **The entered number of players should not be greater than dividing the total number of cards (52) by the *cardsCount* of the *Player* class.**
     - **If a greater value is entered, the program should inform the user of the maximum number of players allowed and keep on prompting the user to enter a correct value.**
  b. **Create the players objects of the players array by invoking the no-arg constructor of class Player.**
  c. **Initialize the number of cards in the *deckCards* array to 52. Then initialize the first 13 cards to values 1-13 with type "heart", the next 13 cards to values 1-13 with type "diamond", the next 13 to 1-13 with type "club", and the next 13 cards to values 1-13 with type "spades".**

- **The *shuffle* method should shuffle the cards by selecting two cards randomly and swap them. This process should be repeated 500 times to make sure that most of the cards are shuffled.**
- **The *assignCards* method should assign cards to the *cards* array of each player:**
  - **This should be done by copying a *cardsCount* cards from the beginning of the *deckCards* array to a newly created array which will be assigned to each players cards array. Then removing the assigned cards from the *deckCards* array.**

- **The *getWinnerGame* method should return the name of the winner player. The winner player is the player who has the cards with the largest sum.**

3. **In your main class:**
   - **Define a method named *displayGameDetails* which takes as parameter an object of type *Game* and prints in the first line the name of the winner of the game as follows:**
     The winner is ----------.
     Then prints the details of each player on a line: his name and cards value and type, as follows:
     Asma: 2-club 5-heart 1-spade 3-heart……
     Ahmed: 9-spade 1-diamond 7-club 10-club……
     .
     .

   - **In your main method:**
     a. **Change the *cardsCount* of the Player class to 4.**
     b. **Create an object of type game.**
     c. **Invoke the *shuffle* method for your game object.**
     d. **Invoke the *assignCards* method for your game object.**
     e. **Invoke the *displayGameDetails* method and pass your game object to it.**