CSE 11

Week 4 discussion
Arrays

• Arrays are “pass by reference”
  int[] myarray = new int[5];
  some_function(myarray);

  some_function can actually modify
  the contents of myarray

• int, float, double, etc. are “pass by value”
  int stuff = 5;
  some_function(stuff);

  some_function only gets a copy,
  stuff is left unharmed here

• Analogy:
  pass by reference is like sending a URL
  pass by value is downloading the entire webpage

• Use this to your advantage
  int[] cards = new int[5];
  get_user_input(cards);  //let this function set up the array
2D Arrays

```java
int[][] matrix = new int[3][3]
some_function(matrix[0]);
```

Pass by reference?

Yes, it passes the whole row
HW4: Poker
1. Input

• At the very least, use 2 arrays per player

```java
int[] cardValues = new int[NUM_CARDS];
char[] cardSuits = new char[NUM_CARDS];
```

• Loop through Scanner methods repeatedly, nextInt(), next()

• Cards are always provided in increasing order, e.g.

```
5 H 6 D 7 C 8 S 9 D
```

(but if you really want to sort it yourself, it’s easy)

```java
Arrays.sort(cardValues);
```

• No error checking necessary

• I recommend making a method to handle input

  e.g.

  ```java
  public static void getInput(int[] values, int[] suits){
    //...fill up both arrays...
  }
  ```

• Never repeat yourself: don’t copy-paste the same code twice when you have to handle player 2
2. Display the cards

- Use your `System.out.println` and for-loop skills

- POWeek idea: use ASCII art or turtle graphics
3. Rank the hand

- Test each hand in an order that avoids false positives

- e.g. 3 of a kind and 4 of a kind might both be valid, but pick 4 of a kind first

- **8 methods are required**; one to check each hand

- Lots of potential for re-use, e.g.
  - `straightFlush = straight(...) && flush(...)`

- Ace can be 1 or 14
4. & 5. Compare against another player

- Should be easy if your part 3 is correct
- Same hand = tie (not the actual rules)
POWeek ideas

• Handle ties
• Different rules (Texas Hold ’em)
• Graphics
• Make a dealer
Handling ties

• Go by the “most important” rank first

Both full house

Winner: because the rank of the group of 3 cards is “3”, while player 1 got “2”