Ranking a Poker hand (1)   X89471_en

The following are some of the possible hands in Poker, in increasing order of value:

- One pair: Two cards with the same rank.

- Two pair: Two pairs of cards with the same rank.

- Three of a kind: Three cards with the same rank.

- Straight: Five cards with ranks in sequence (aces can be high or low, so Ace-2-3-4-5 is a straight and so is 10-Jack-Queen-King-Ace, but Queen-King-Ace-2-3 is not.)

- Flush: Five cards with the same suit.

- Full house: Three cards with one rank, two cards with another.

- Four of a kind: Four cards with the same rank.

- Straight flush: Five cards with ranks in sequence (as defined above) and with the same suit.

Using the *Card*, *Deck*, *Hand*, and *PokerDeck* class definitions, write a *PokerHand* class with methods named *has_one_pair*, *has_two_pair*, etc. that return *True* or *False* according to whether or not the hand meets the relevant criteria.

Your code should work correctly for hands that contain 5 cards.

Input

The input consist of two non-negative integers, the number of hands and the number of cards per hand, followed by a shuffled deck of cards.

Output

Print the cards in each hand followed by a blank line, and a line for each of *has_one_pair*, *has_two_pair*, *has_three_of_a_kind*, *has_straight*, *has_flush*, *has_full_house*, *has_four_of_a_kind*, and *has_straight_flush*, followed by a blank line.

Precondition

The number of cards in the shuffled deck is not less than the number of hands times the number of cards per hand.

Sample input 1

```
1
5
Ace of Spades
Queen of Diamonds
Jack of Clubs
6 of Diamonds
5 of Spades
```

Sample output 1

```
5 of Spades
6 of Diamonds
Jack of Clubs
Queen of Diamonds
Ace of Spades

One pair: False
```

```
Two pair: False
Three of a kind: False
Straight: False
Flush: False
Full house: False
Four of a kind: False
Straight flush: False
```

Sample input 2

```
1
5
Ace of Spades
Ace of Diamonds
8 of Clubs
5 of Spades
4 of Hearts
```

Sample output 2

```
4 of Hearts
5 of Spades
8 of Clubs
Ace of Diamonds
Ace of Spades

One pair: True
Two pair: False
Three of a kind: False
Straight: False
Flush: False
Full house: False
Four of a kind: False
Straight flush: False
```

Sample input 3

```
1
5
9 of Diamonds
King of Spades
King of Hearts
Ace of Clubs
Ace of Hearts
```

Sample output 3

```
Ace of Hearts
Ace of Clubs
King of Hearts
King of Spades
9 of Diamonds

One pair: False
Two pair: True
Three of a kind: False
Straight: False
Flush: False
Full house: False
Four of a kind: False
Straight flush: False
```

Sample input 4

```
1
5
2 of Diamonds
2 of Spades
2 of Hearts
Queen of Clubs
5 of Diamonds
```

Sample output 4

```
5 of Diamonds
Queen of Clubs
2 of Hearts
2 of Spades
2 of Diamonds

One pair: False
Two pair: False
Three of a kind: True
Straight: False
Flush: False
Full house: False
Four of a kind: False
Straight flush: False
```

Sample input 5

```
1
5
5 of Spades
6 of Diamonds
7 of Spades
8 of Diamonds
9 of Clubs
```

Sample output 5

```
9 of Clubs
8 of Diamonds
7 of Spades
6 of Diamonds
5 of Spades

One pair: False
Two pair: False
Three of a kind: False
Straight: True
Flush: False
Full house: False
Four of a kind: False
Straight flush: False
```

Sample input 6

```
1
5
3 of Hearts
6 of Hearts
9 of Hearts
Jack of Hearts
Ace of Hearts
```

Sample output 6

```
Ace of Hearts
Jack of Hearts
9 of Hearts
6 of Hearts
3 of Hearts

One pair: False
Two pair: False
Three of a kind: False
Straight: False
Flush: True
Full house: False
Four of a kind: False
Straight flush: False
```

Sample input 7

```
1
5
Jack of Diamonds
Jack of Clubs
Queen of Diamonds
Queen of Spades
Queen of Hearts
```

Sample output 7

```
Queen of Hearts
Queen of Spades
Queen of Diamonds
Jack of Clubs
Jack of Diamonds

One pair: False
Two pair: False
Three of a kind: False
Straight: False
Flush: False
Full house: True
Four of a kind: False
Straight flush: False
```

Sample input 8

```
1
5
9 of Spades
Ace of Diamonds
Ace of Spades
```

```
Ace of Hearts
Ace of Clubs
```

Sample output 8

```
Ace of Clubs
Ace of Hearts
Ace of Spades
Ace of Diamonds
9 of Spades

One pair: False
```

```
Two pair: False
Three of a kind: False
Straight: False
Flush: False
Full house: False
Four of a kind: True
Straight flush: False
```

Sample input 9

```
1
5
5 of Diamonds
6 of Diamonds
7 of Diamonds
8 of Diamonds
9 of Diamonds
```

Sample output 9

```
9 of Diamonds
8 of Diamonds
7 of Diamonds
6 of Diamonds
5 of Diamonds

One pair: False
Two pair: False
Three of a kind: False
Straight: False
Flush: False
Full house: False
Four of a kind: False
Straight flush: True
```

Problem information

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