

Array Processing and Examples – Part II

Hui Chen

Department of Computer & Information Science

Brooklyn College

Objectives

- To apply arrays in application development (**AnalyzeNumbers, DeckOfCards**) (§§7.3–7.4)
- To copy contents from one array to another (§7.5)

Problem. Analyze Numbers

- Read one hundred numbers, compute their average, and find out how many numbers are above the average

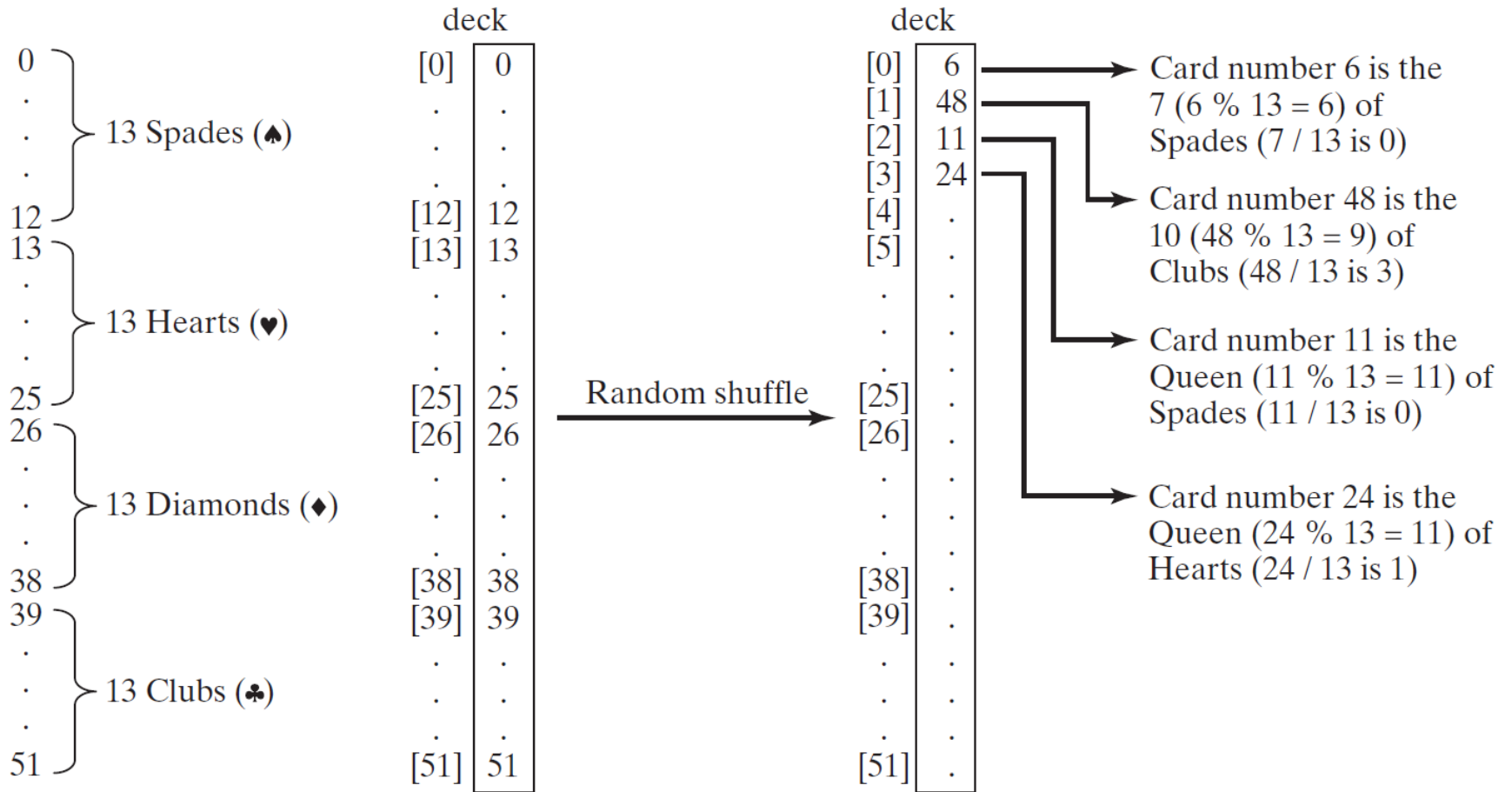
Questions?

Problem. Deck of Cards

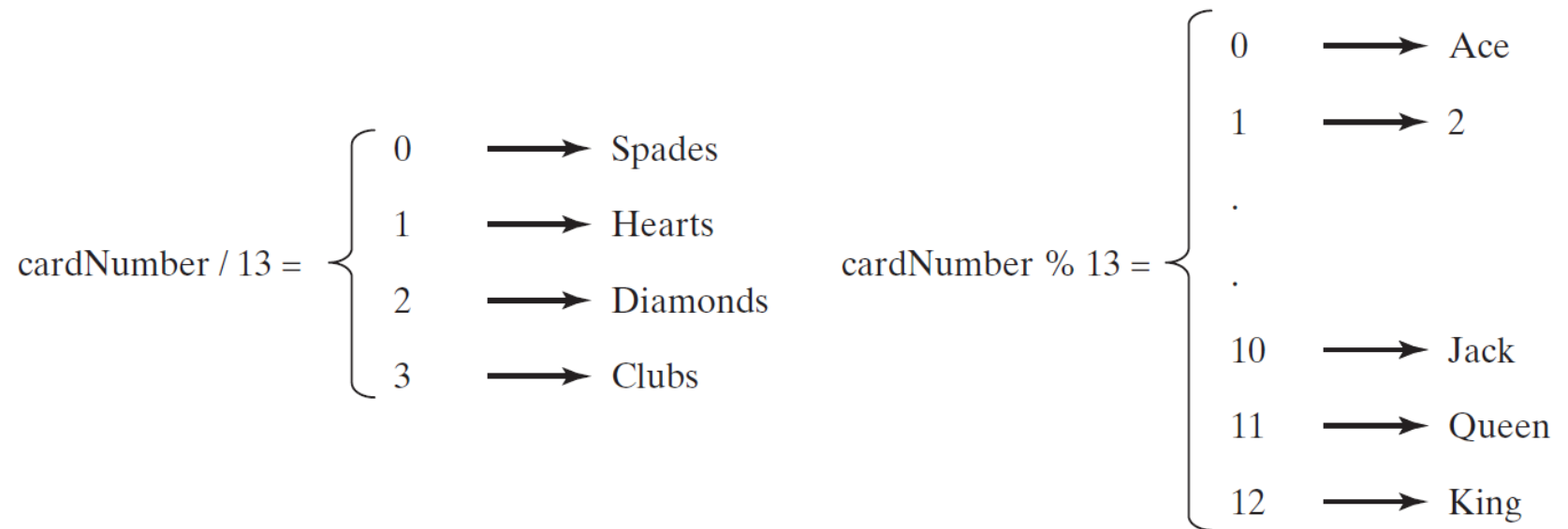
- The problem is to write a program that picks four cards randomly from a deck of 52 cards.
- All the cards can be represented using an array named `deck`, filled with initial values 0 to 51, as follows

```
int[] deck = new int[52];  
// Initialize cards  
for (int i = 0; i < deck.length; i++) {  
    deck[i] = i;  
}
```

Solution. Deck of Cards



Solution. Deck of Cards Continued



Questions?

Copying Arrays

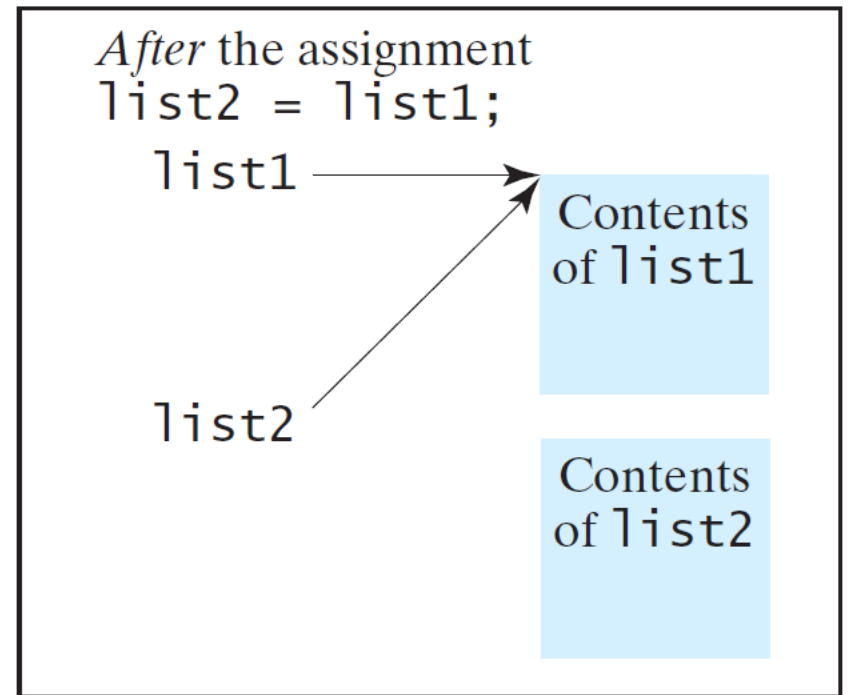
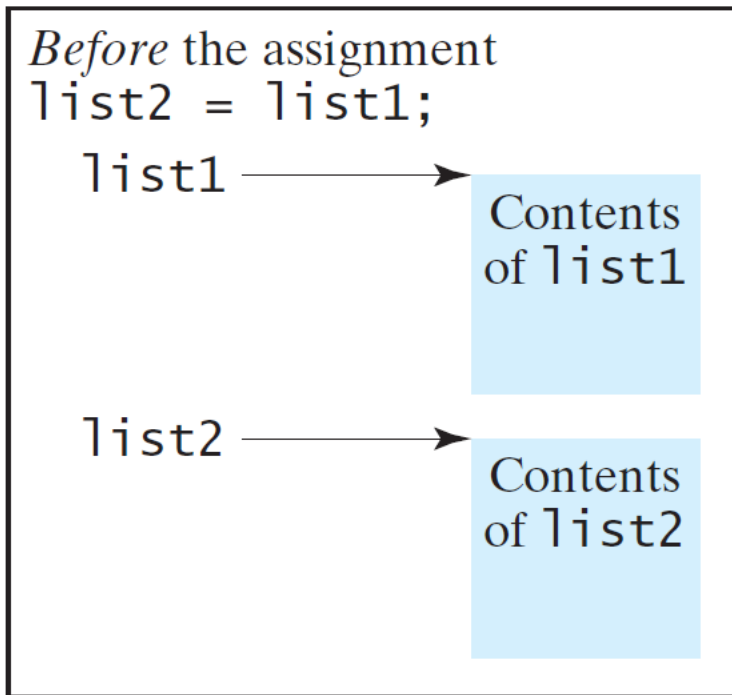
- Often, in a program, you need to duplicate an array or a part of an array.
- How?

How about this?

```
list2 = list1;
```

How about this?

`list2 = list1;`



Copying Arrays Using Loop

- Using a loop:

```
int[] sourceArray = {2, 3, 1, 5, 10};
```

```
int[] targetArray = new int[sourceArray.length];
```

```
for (int i = 0; i < sourceArray.length; i++) {
```

```
    targetArray[i] = sourceArray[i];
```

```
}
```

Copying Arrays Using `System.arraycopy`

- The `System.arraycopy` method

```
arraycopy(sourceArray, src_pos, targetArray, tar_pos,  
length);
```

- Example:

```
System.arraycopy(sourceArray, 0, targetArray, 0,  
sourceArray.length);
```

Questions?