

one dimensional arrays

① How to define, access elements

② Example: Printing out reverse of an array

②.5 Random Prize example!

③ Example: Avg, Stdev of a data set

④ Example: Problem from UCF Team Tryout

⑤ Letter frequency example

Java Syntax for array

any expr evaluates to int

```
type[] varname = new type[ ];
```

```
int[] nums = new int[10]; // default val 0
```

```
int n = stdin.nextInt();
```

```
int[] scores = new int[n]; // default val 0
```

```

      0 1 2 3           9
nums → [ | 1 | 7 | 1 | -- | ]

```

```
nums[2] = 7;
```

```
Arrays.fill(scores, 100); // init all cells to 100.
```

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

```
    nums[i] = stdin.nextInt();
```

Showed:

Declare

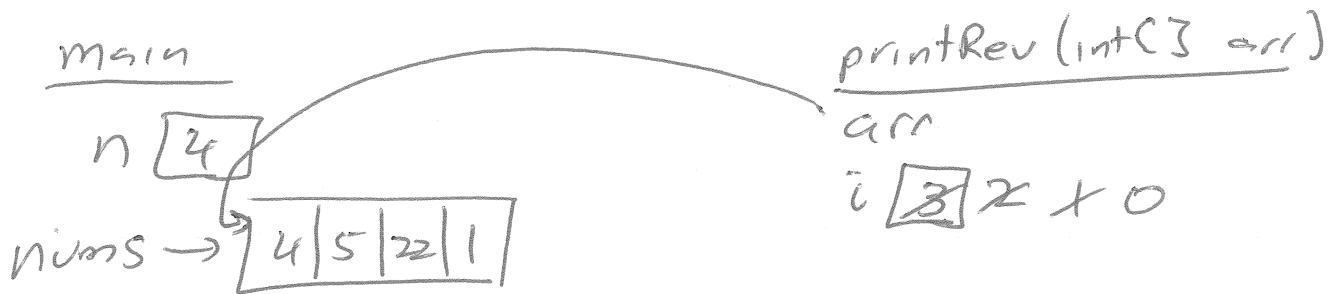
Default

Fill

Access length

to access element ([])

Example 1 pic



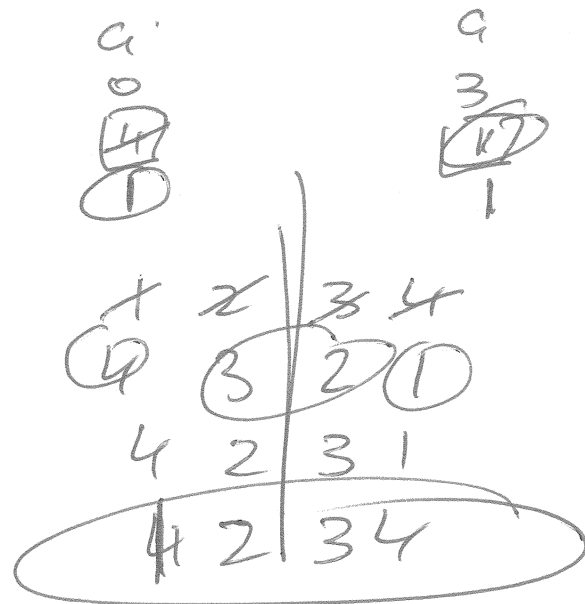
printRev(nums)

1 22 5 4

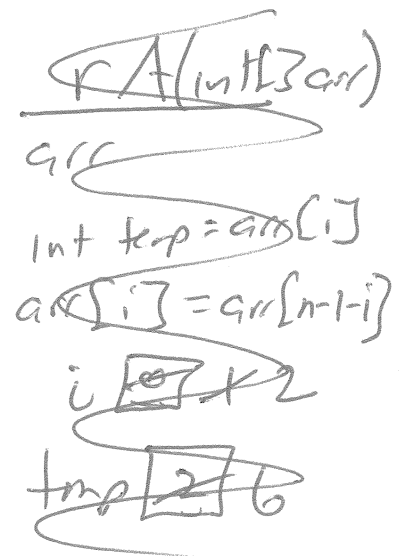
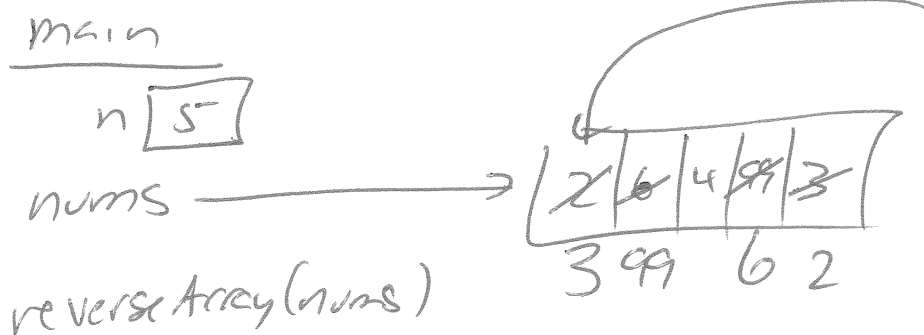
error to fix

$arr[i] = arr[n-i]$

$arr[n-i] = arr[i]$



Pic reverse



Standard Deviation Def

$x_0, x_1, \dots, x_{n-1}$ $\text{avg} = X$

$$\text{Variance} = \frac{\sum_{i=0}^n (x_i - X)^2}{n}$$

3, 6, 2, 5

$\text{Avg} = 4$

$$(3-4)^2 + (6-4)^2 + (2-4)^2 + (5-4)^2$$

$$= \frac{1 + 4 + 1 + 1}{4} = 2.5$$

$$\text{StdDev} = \sqrt{\text{Variance}}$$

main

$\text{int}[] \text{ scores} = \text{getDek}();$

scores

41 | 100 | 60 | 82

$\text{double avg} = \text{getAvg}(\text{scores})$

avg 5.25

getDek

$\text{int}[] \text{ data} = \text{new } \dots$

data

return data

getAvg

data

199
142
341

Classes I showed you

StringTokenizer

String Buffer Methods

Integer.parseInt ()

Double.parseDouble ()

tok.nextToken ()

tok.countTokens ()

sb.append ()