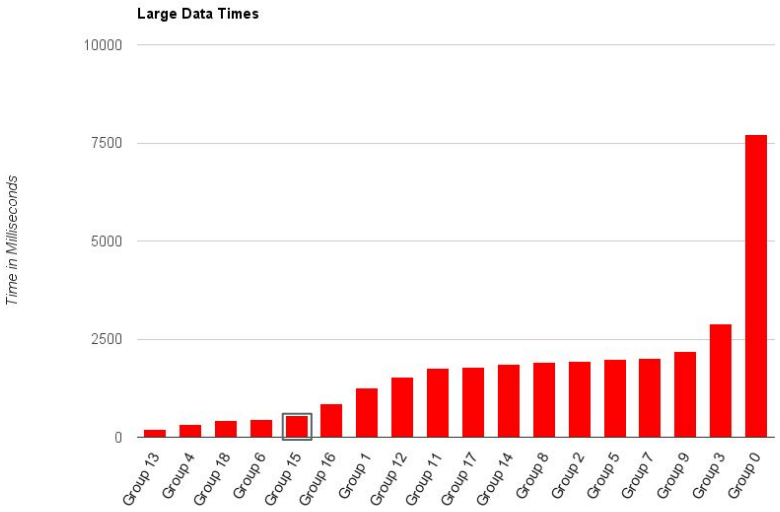
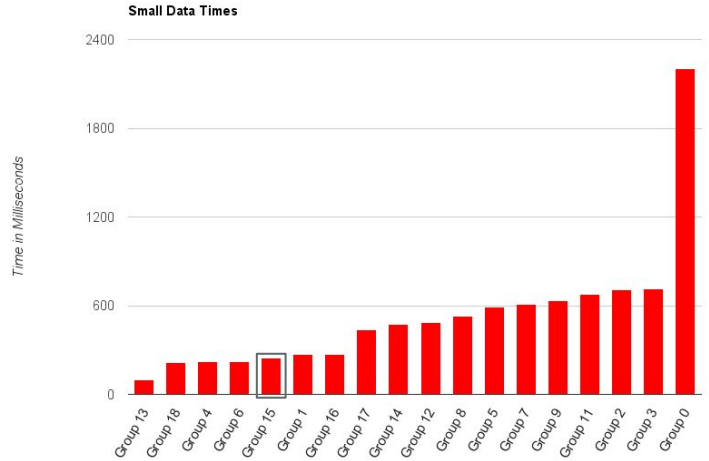
Group 15

authored by: Jack Ziegler
presented by: Matthew Kangas

Results





	Place	Time(ms)	Correctness
Small Data	5	247.0	Yes
Large Data	5	551.0	Yes

Algorithm

- Stores data as integers, using charAt and some multiplication.
- Uses a dual pivot quicksort, calling it on each mod value.
- stores needed mod values in an array of ints.

- Runtime of approx. $\Theta(n \log n)$

```
private static int getIntValue(String s) {
                int result = 0;

                result += s.charAt(2) - '0';
                result *= 10;
                result += s.charAt(3) - '0';
                result *= 10;
                result += s.charAt(4) - '0';
                result *= 10;
                result += s.charAt(5) - '0';
                result *= 10;
                result += s.charAt(6) - '0';
                result *= 10;
                result += s.charAt(7) - '0';
                result *= 10;
                result += s.charAt(8) - '0';
                result *= 10;
                result += s.charAt(9) - '0';
                result *= 10;
                result += s.charAt(10) - '0';

                return result;
        }
```

Memory Usage

- Creates several (at least three) arrays of size n, mostly storing int values
- Dual Pivot Quicksort uses log(n) extra memory for index storing.

Things to change

- Nomenclature confusing at times.