You can’t beat Timsort

A complex narrative

by Thomas Hagen and Peter Hanson

The group 12

Took 4th place in class and 8th place overall. The glorious algorithm of the People's Republic of Group Twelve was correct.

We kept the important bits as strings, but cast the first four characters to ints.

```
public static int sumFirstFour(String str) {
        return (((int)str.charAt(2) + (int)str.charAt(3) + (int)str.charAt(4) + (int)str.charAt(5)) - 192) % 10;
}
```

We put the strings into buckets based on the mod 10 and Timsorted each bucket.

```
for(int i=0; i<arrayIn.length; i++) {
        arrayMove.get(sumFirstFour(arrayIn[i])).add(arrayIn[i]);
}
```

Our worst case is $(n \log n) + 3n$

Due to the reading, writing, and the use of buckets in the array.

We use an array of ten arrays as buckets to store the data in.

There is nothing significant stored.

The algorithm of the PRGT had zero problems.

All hail Tim.

Actually try and optimize it would be a good start.

We ran out of time.