

# Semester Project

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## 1 POPULATION: 1000

### 1. Simulation Ran 10 times:

- Run 1 : 251 tests done
- Run 2 : 269 tests done
- Run 3 : 215 tests done
- Run 4 : 245 tests done
- Run 5 : 251 tests done
- Run 6 : 263 tests done
- Run 7 : 227 tests done
- Run 8 : 293 tests done
- Run 9 : 257 tests done
- Run 10 : 269 tests done

AVG tests completed : 254 tests. Case (1) happened 105 times out of 125 groups on average resulting in 84 percent. Case (2) happened 20 times out of 125 groups on average resulting 16 percent. Case (3) happened only several times if at all. Most tests didn't reach a third case.

## 2 POPULATION: 10,000

### 1. Simulation Ran 10 times:

- Run 1 : 2,378 tests done
- Run 2 : 2,474 tests done

- Run 3 : 2,450 tests done
- Run 4 : 2,588 tests done
- Run 5 : 2,432 tests done
- Run 6 : 2,540 tests done
- Run 7 : 2,594 tests done
- Run 8 : 2,636 tests done
- Run 9 : 2,534 tests done
- Run 10 : 2,408 tests done

AVG tests completed : 2,504 tests.

### 3 POPULATION: 100,000

#### 1. Simulation Ran 10 times:

- Run 1 : 24,992 tests done
- Run 2 : 24,884 tests done
- Run 3 : 24,788 tests done
- Run 4 : 24,980 tests done
- Run 5 : 25,070 tests done
- Run 6 : 24,926 tests done
- Run 7 : 24,908 tests done
- Run 8 : 25,214 tests done
- Run 9 : 24,938 tests done
- Run 10 : 25,094 tests done

AVG tests completed : 24,980 tests.

### 4 POPULATION: 1,000,000

#### 1. Simulation Ran 10 times:

- Run 1 : 249,254 tests done
- Run 2 : 250,010 tests done
- Run 3 : 250,664 tests done
- Run 4 : 248,774 tests done
- Run 5 : 249,992 tests done

- Run 6 : 250,202 tests done
- Run 7 : 249,482 tests done
- Run 8 : 251,120 tests done
- Run 9 : 249,374 tests done
- Run 10 : 250,856 tests done

AVG tests completed : 249,973 tests.