Algorithmics	Student information	Date	Number of session
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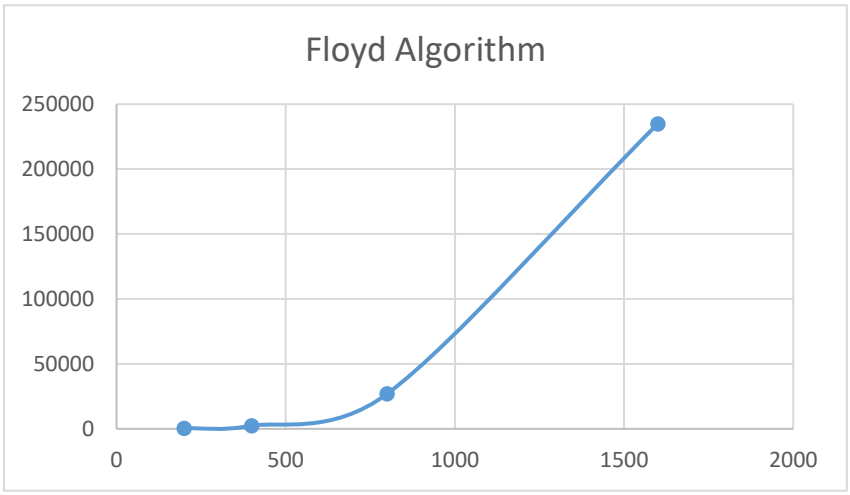
Activity 1. The minimum path

n	times
200	344
400	2368
800	26975
1600	234915
3200	OoT

The measured times align with the expected $O(n^3)$ complexity of the Floyd-Warshall algorithm. When we double the number of nodes, the running time increases by a factor of eight. This cubic growth occurs because the algorithm uses three nested loops to process all pairs of nodes through every pivot. The observed timings are a typical signature of an $O(n^3)$ algorithm. Thus, the results confirm the theoretical complexity.




```java
/* ITERATIVE WITH CUBIC COMPLEXITY O(n^3) */
static void floyd(int[][] weights, int[][] costs, int[][] p) {
    int n = weights.length;
    for (int pivot = 0; pivot < n; pivot++) {
        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                if (costs[i][pivot]+costs[pivot][j] < costs[i][j] && i!=j) {
                    costs[i][j] = costs[i][pivot]+costs[pivot][j];
                    p[i][j] = pivot;
                }
            }
        }
    }

}
```