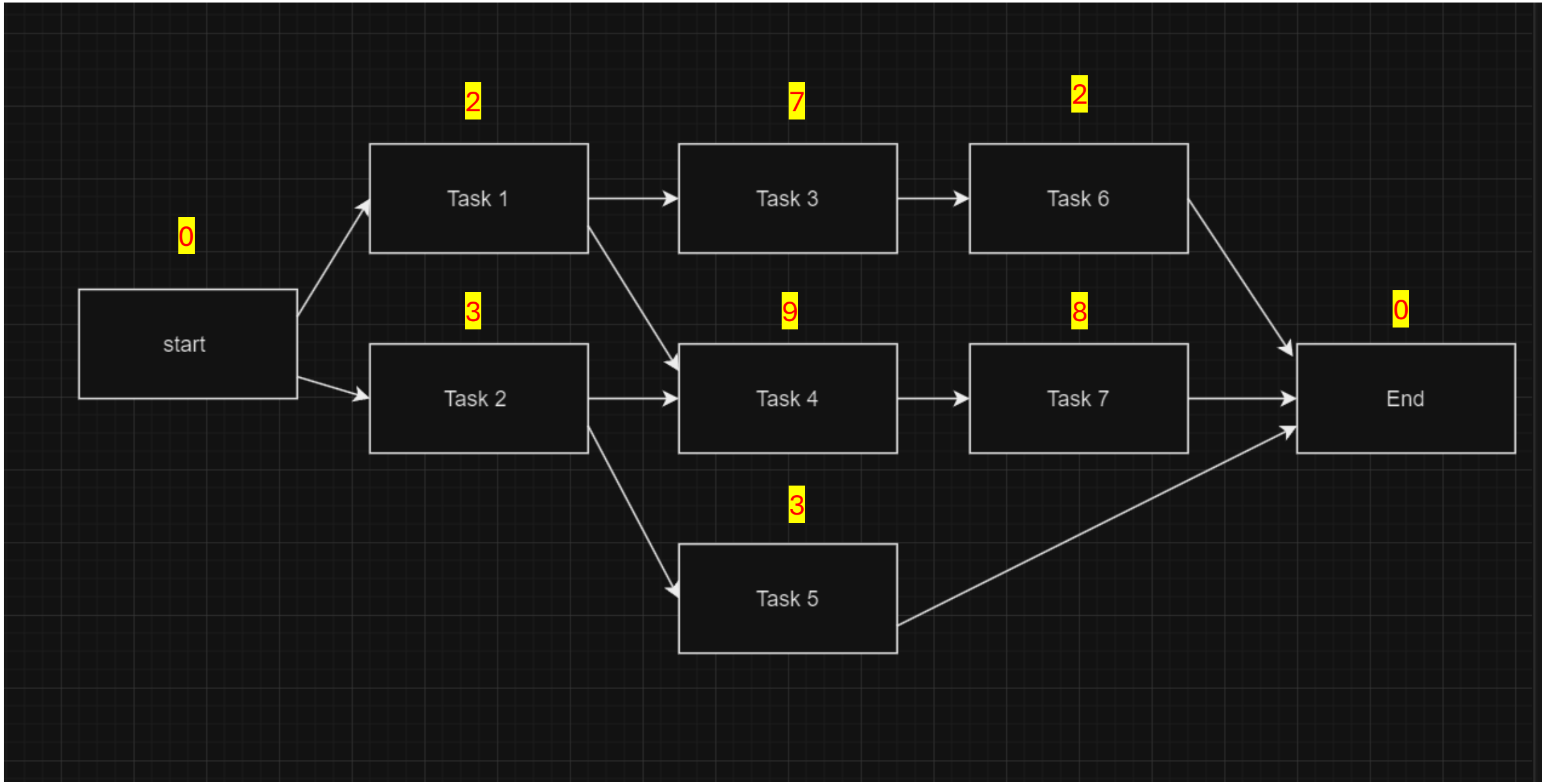
1- Network diagram :-



2- All of the paths in this network diagram :-

- **Path 1**: Start → Task 1 → Task 3 → Task 6 → End
Duration = 2 + 7 + 2 = **11 months**

- **Path 2**: Start → Task 1 → Task 4 → Task 7 → End
Duration = 2 + 9 + 8 = **19 months**

- **Path 3**: Start → Task 2 → Task 5 → End
Duration = 3 + 3 = **6 months**

- **Path 4**: Start → Task 2 → Task 4 → Task 7 → End
Duration = 3 + 9 + 8 = **20 months**

3- duration of critical path :-

- **Path 4** is the critical path with a duration of **20 months**.

4- The float of tasks :-

1. **Task 3**:
   Task 3 lies only on **Path 1** (non-critical path).
   Float = 20 − 11 = **9 months**.
2. **Task 5**:
   Task 5 lies on **Path 3** (non-critical path).
   Float = 20 − 6 = **14 months**.
3. **Task 1**:
   Task 1 contributes to Paths 1 and 2 (non-critical paths).
   However, Path 2 has a total duration of 19 months.
   Float = 20 − 19 = **1 month**.
4. **Slack of Task 7**:
   Task 7 lies on the **Critical Path** (Path 4).
   1. Tasks on the Critical Path have **no float**.
   2. Slack = **0 months**.