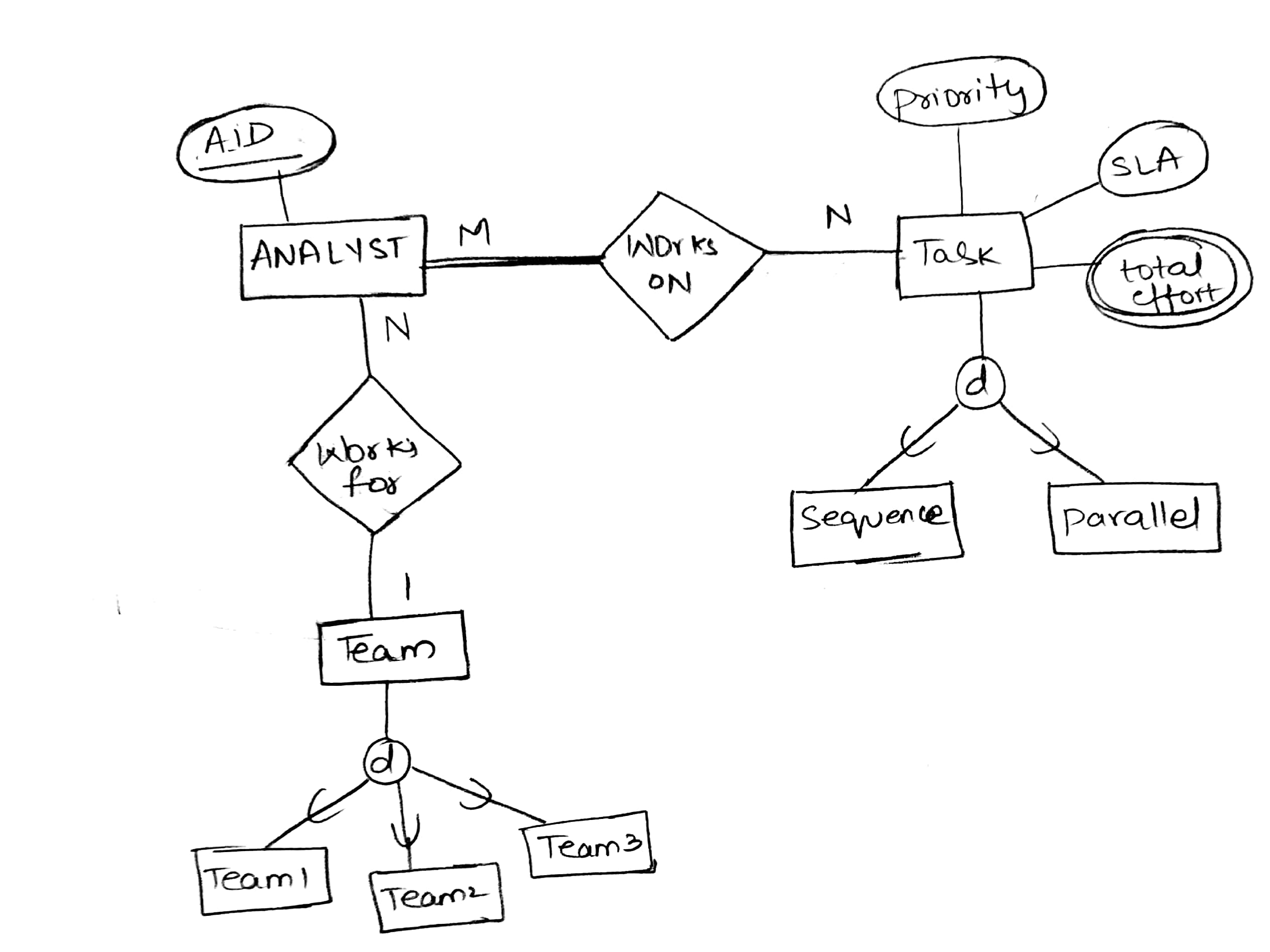
Design document – Vulnerability analysis

Assumptions:

* There are currently 3 teams operating in the firm to work on vulnerability processing
* 30 requests(tasks) are processed daily
* Each task requires the effort from at least one of the three teams.
* Initial planning for the number of hours of effort required by each team has already been done.
* Each team must allocate available resources to work on respective tasks based on the requirement.
* If no available resources exist, then they must be hired on the same day.
* Initially all teams start with 0 employees and based on that day’s effort requirement the analysts are hired (This is the main objective of the program – to minimize the number of employees, subject to all the constraints listed under assumptions).
* For parallel processing all the teams should start working from day1
* For sequential tasks, teams follow waterfall model
* All the tasks coming on a day should be started working on the same day
* Completion of a task depends on deadlines and priority
* In any task, if the deadline to finish it is M days, but the overall effort required from team A is N-man days (where N > M) then then the allocation of resources to work on the tasks will be a Ceil(N/M)
* For example, if the priority parallel task requires 7-man days and task deadline is 3 days, then the number of analysts allocated to work on that task are 3.
* Also, no employees will be fired until the completion of this project.

Sample Design(ER) diagram

Relational mapping - Sample scripts for preparing initial tables

/\*Create database\*/

CREATE DATABASE IF NOT EXISTS VulnerabilityDB;

/\*Create realtional schema\*/

CREATE TABLE IF NOT EXISTS TaskAnalystMap(TaskId INT(20), Team1 INT(20), Team2 INT(20), Team3 INT(20), Analysts VARCHAR(250));

CREATE TABLE IF NOT EXISTS TaskData(TaskId INT(20), CriticalityLevel INT(20), SLA INT(20), EffortA INT(20), EffortB INT(20), EffortC INT(20), StartDay INT(20), TaskStatus VARCHAR(250));

CREATE TABLE IF NOT EXISTS AnalystData(AnalystId INT(20), Team VARCHAR(50), TaskMap INT(20), StartDay INT(20), TasksDone VARCHAR(250));