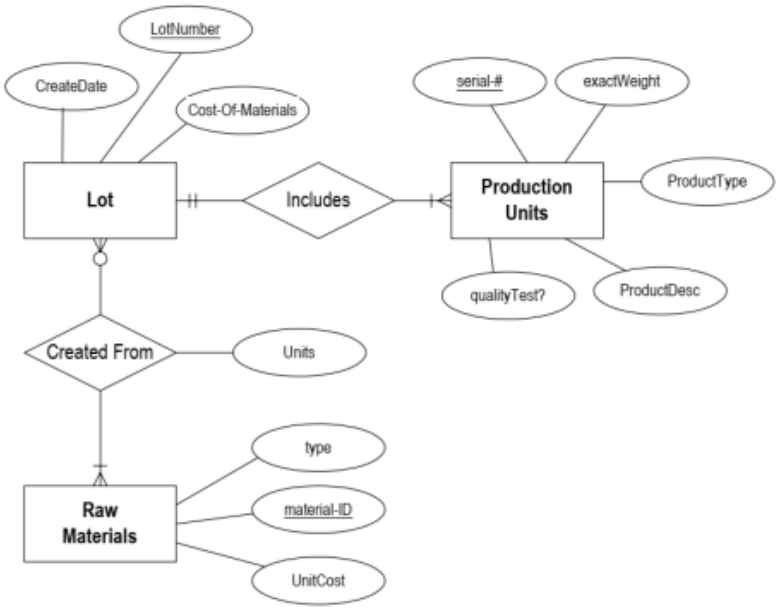
Assignment No 2

Q1:

Please convert the ER diagram into a relational database schema. Be certain to indicate primary keys and referential integrity constraints.

Production tracking is important in many manufacturing environments (e.g., the pharmaceuticals industry, children's toys, etc.). The following ER diagram captures important information in the tracking of production. Specifically, the ER diagram captures relationships between production lots (or batches), individual production units, and raw materials.



Also Implement in MySQL. (include screenshots of the tables)

Generate and execute four queries, each utilizing different types of joins, on the specified database. Please provide a screenshot for each query, depicting both the query itself and its corresponding result.

Q 2: You are given the following Functional Dependencies for the Employee relation.

Explain whether the relation "EMPLOYEE" is BCNF and 3NF?
Database:

```
EMPLOYEE(ssn, first-name, last-name, address, date-joined, supervisor-ssn)
DEPARTMENT(dept-no, name, manager-ssn)
WORKS-IN(employee-ssn, dept-no)
INVENTORY(dept-no, item-id, quantity)
ITEMS(item-id, item-name, type)
```

Foreign keys:
1. EMPLOYEE.supervisor-ssn and WORKS-IN.employee-ssn point to EMPLOYEE.ssn.
2. WORKS-IN.dept-no and INVENTORY.dept-no point to DEPARTMENT.dept-no.
3. INVENTORY.item-id points to ITEMS.item-id.

$\{ssn \rightarrow supervisor - ssn, ssn \rightarrow first - name, ssn \rightarrow last - name, ssn \rightarrow date - joined, ssn \rightarrow address, address \rightarrow ssn\}$.

Q3: Practice the execution of 20 built-in functions on the above database. Please provide both the query used for each function and the corresponding result (Screeenshot).