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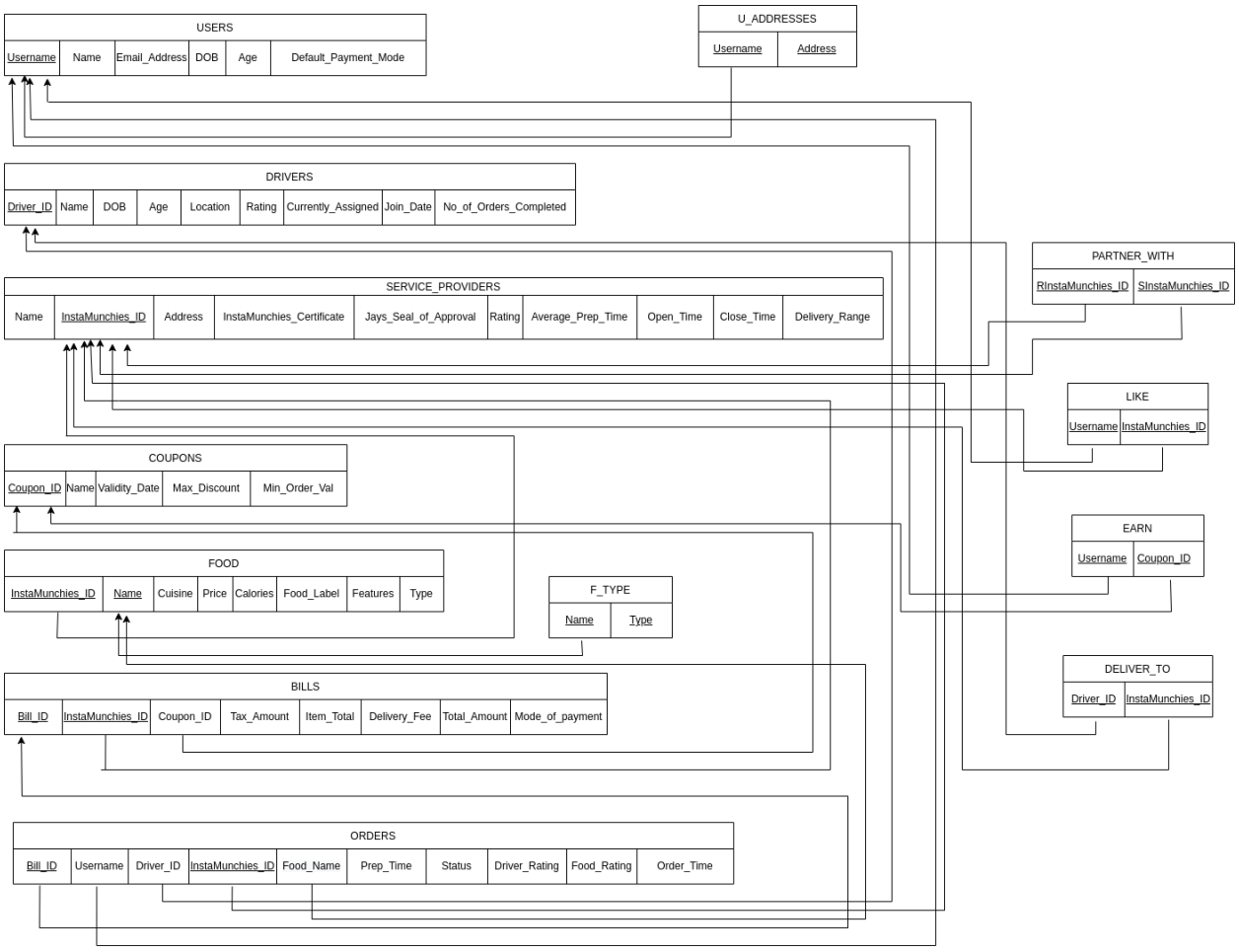
Project Phase 3

Assumptions:

- After mapping ER to relational model
    - We have removed the criteria for Name and Address(es) to be composite attributes, they are now simple. This was done to simplify the relation.
    - All other composite attributes have been decomposed into their component simple attributes and represented in the relations. Example: Biodata, Timings
    - For weak entities like FOOD and BILLS, the owner entity type's primary key was included in the foreign key of the new relation and made part of the relation's primary key. Example: InstaMunchies_ID in FOOD relation.
    - For BILLS, the owner entity is the set of all entities taking part in the relationship ORDERS. Accordingly, we have to include multiple attributes from across entities to be a part of the primary key of the new relation.
    - Renamed the column names in PARTNER_WITH to reflect the distinct roles of the same entity type in the relationship.
    - We introduced a new relationship in our ER model called `OF` (BILLS -> SERVICE_PROVIDERS), Degree: Binary, Cardinality Ratios: N:1, Participation constraints: Total for both. Every SERVICE_PROVIDER has to produce at least one bill.



- Relational model after conversion to 1NF
    - We took care of all composite and multi-valued attributes while mapping to relational schema. So, there is no need to convert to 1NF.

- Relational model after conversion to 2NF
    - After following the seven steps of the algorithm to map to relational schema, we have obtained a schema where every non prime attribute is fully functionally dependent on the primary key of the relation in addition to satisfying the properties of 1NF. So, there is no need to convert to 2NF.

- Relational model after conversion to 3NF

- Since Age is transitively functionally dependent on the primary key of the corresponding relation through the intermediate attribute DOB, we are deleting it to remove the transitive dependency in line with 3NF.