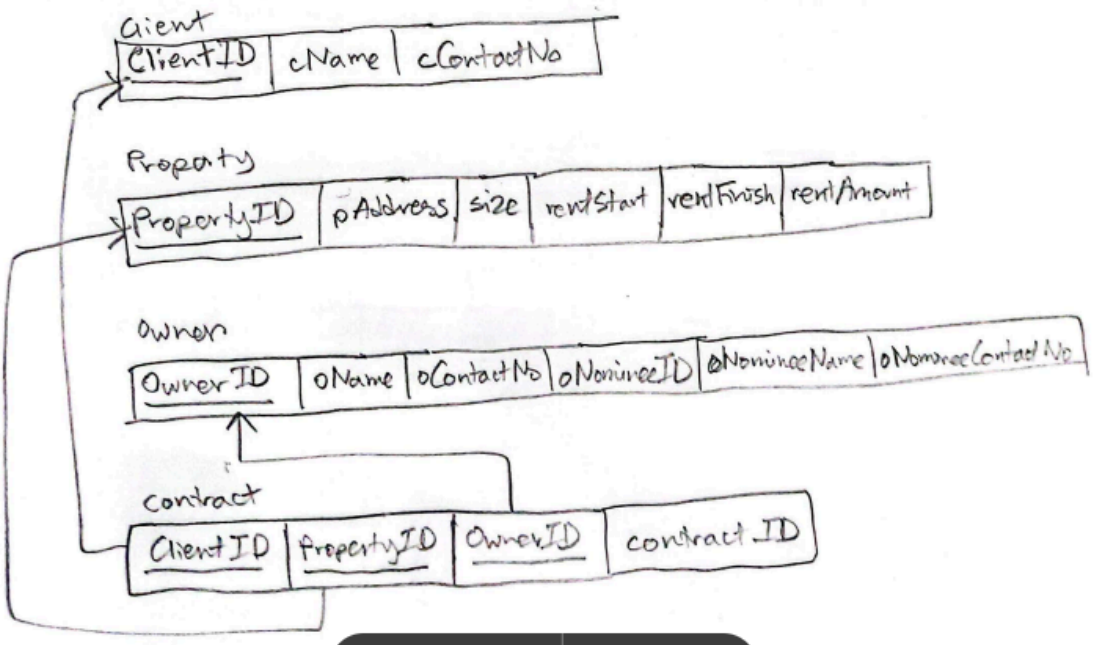
2. [CO4] Consider the following relation: **RentalService (<u>clientID</u>, <u>propertyID</u>, <u>ownerID</u>, cName, cContactNo, pAddress, size, rentStart, rentFinish, rentAmount, oName, oContactNo, oNomineeID, oNomineeName, oNomineeContactNo, contractID)** The primary key of the relation is underlined. The relation has the following additional functional dependencies (FDs): **FD1:** clientID → cName, cContactNo **FD2:** propertyID → pAddress, size, rentStart, rentFinish, rentAmount **FD3:** ownerID → oName, oContactNo, oNomineeID, oNomineeName, oNomineeContactNo **FD4:** size, rentStart, rentFinish → rentAmount **FD5:** oNomineeID → oNomineeName, oNomineeContactNo	**10**
a. **Explain** if the above relation is in the first normal form (1NF) or not? If not, **apply** 1NF normalization.	**2**
b. **Explain** if the relation(s) of no (a) is/are in the second normal form (2NF) or not? If not, **apply** 2NF normalization.	**4**
c. **Explain** if the relation(s) of no (b) is/are in the third normal form (3NF) or not? If not, **apply** 3NF normalization.	**4**

2) a) Yes, the relation is in 1NF. This is because there is no composite attribute or multivalued attribute or nested relation here.

b) No, the relation is not is 2NF. This is because FD1, FD2, FD3 are examples of partial dependency since None of clientID, propertyID, ownerID are individually ~~# key att~~ Primary key and are only part of primary key.

Applying 2NF



2 c) No, ~~the~~ it is not in 3NF because transitive dependency can be seen in FD4 and FD5. This means a non key attribute is derived from a key attribute, and then from that non key attribute another non key attribute is derived.

Applying 3NF