Chapter Three Questions

1. existing data, from the development of new information systems, and from the redesign of existing databases.
2. The premise of Chapters 3 and 4 is that you have received one or more tables of data from some source that are to be stored in a new database.
3. The table is having multiple values across columns so are are to use multivalue dependency.
4. Relation=A relation is a two-dimensional table that has the following characteristics(mentioned in no. 5):

-Functional dependency = A functional dependency occurs when the value of one (set of) attribute(s) determines the value of a second (set of)

attribute(s)

-Determinant = a determinant of a functional dependency that consists of more than one attribute

-Candidate key = A candidate key is a key with no repeated values.

-Composite key = A composite key is a key that consists of two or more columns.

-Primary key = A primary key is a candidate key selected as the primary means of identifying rows in a relation.

-Surrogate key = A surrogate key is an artificial column added to a relation to serve as a primary key.

-Foreign key = A foreign key is a column or composite of columns that is the primary key of a table other than the one in which it appears.

-Referential integrity constraint = A referential integrity constraint is a statement that limits the values of the foreign key to those already existing as primary key values in the corresponding relation

-Normal form = normal form based on which modification anomalies or other problems they are subject to:

-Multi-valued dependency = A multivalued dependency occurs when a determinant is matched with a particular set of values:

5.Rows contain data about an entity.

Columns contain data about attributes of the entities.

All entries in a column are of the same kind

Each column has a unique name.

Cells of the table hold a single value.

The order of the columns is unimportant.

The order of the rows is unimportant

No two rows may be identical.

6.The employers table fig 3.6 and fig3.7

1. We can use the AS keyword known as alias to change the name of one column so that they wont be the same.
2. No they don’t have the same length but the same type

9.Three sets of terms are used to describe relation structure: (relation, attribute, tuple); (table, column, row); and (file, field, and record).

1. The difference between functional dependencies that arise from equations and those that do not is because the one that require equations are the tables that require calculation to get an actual value but a table that has its value attached to it already does not need any equation.
2. PartNumber -> PartWeight this means that PartWeight depends on PartNumber(its the identifier for Partweight).
3. “The only reason for having relations is to store instances of functional dependencies.” means when each row of a table is unique.
4. (FirstName, LastName) -> Phone this means that both FirstName and LastName are the unique identifier for Phone .
5. Determinants that have more than one attribute are called composite determinants.
6. If (A, B) -> C, then can we also say that A -> C cant work because A and B combined determines C because its a composite key
7. If A -> (B, C), then can we also say that A -> B can determines B because its a primary key not a composite key
8. For the SKU\_DATA table in Figure 3-1, the reason why Buyer determines Department but Department does not determine Buyer because its not unique.
9. SKU\_Description -> (SKU, Department, Buyer) the reason SKU\_Description is the determinant its because its the primary key and the only unique column
10. yes, PartNumber will be unique in a relation
11. In truth, a determinant is unique in a relation only if it determines every other column in the relation.
12. Writing a scrip using the determinant to get all the whole table then if it does that means its unique.
13. A composite key is a key that consists of two or more columns.

23 A candidate key is a determinant that determines all of the other columns in a relation.

24. When designing a database, one of the candidate keys is selected to be the primary key. The requirement that, in order to function properly, the primary key must have unique data values inserted into every row of the table.

25 . Candidate key = A candidate key is a key with no repeated values.

1. Surrogate key is generated implicitly by the database.
2. The surrogate key comes from the database itself
3. We will only need a surrogate key if there is no unique field in a table.
4. A foreign key is the reference of a primary key from another table to become a unique identifier.and foe the referential integrity constraint that a foreign must have exist as a primary key in another table before it can be referenced.
5. domestic key maybe it would have mean a key temporarily used for some period of actions
6. Relations are categorized into normal forms based on the kinds of problems that they have.
7. The reason why duplicated data lead to data integrity problems is that duplicated data can cause anomalies when performing some actions
8. The relations in 1NF is that there must be a primary key and each records must be unique.
9. 1Nf, 2NF, 3NF,BCNF
10. It must have passed 1NF,so that its primary key can be used as a unique identifier
11. in 3NF if, and only if, it is in 2NF and there are no non-key attributes determined by another non-key attribute.
12. A relation is in BCNF if, and only if, it is in 3NF and every determinant is a candidate key.
13. 4NF