**Database system**

**Assignement 1 Solution 3**

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# Write each statements as a functional dependency

**Explaning the passage (line by line)**

1. Each manufacturer manufactures many disk-drives, and the manufacturer assigns each disk-drive a serial number.

**manufacturers↛ serialNum (one to many relationships)**

1. The serial number is unique within a manufacturer, but not across all other manufacturers.

* **serialNum, manufacturer 🡪 DiskDrive ( one to one relationship)**

1. The manufacturer registers the model of the disk-drive it produces to the intellectual property Office of Singapore (IPOS) so that the model of the disk drive is protected and cannot be used by other manufacturer.

**Manufactures ↛ model ( one to many relationships)**

1. manufactured in a batch are of the same model, and all the disk- drives of the same model have the same capacity.

**Batch 🡪 model (one to one relationship)**

**Model ↛ capacity (many to one relationship)**

**Manufacturer & Model -> Capacity (many to one relationship)**

1. A distributor collaborates with many manufacturers to help the manufacturers to distribute the disk-drives the distributor receives to retailers.

**Retailer ↛ manufacturer**

**Manufacturers ↛ diskDrive**

**Write each statements as a functional dependency**

1. The manufacturer and serial number uniquely identify the drive.

(Manufacturer, serialNum) 🡪 all diskDrive attributes

**ANS: (manufacturer, serialNum) 🡪 model, batch, capacity, retailer**

1. A model number is registered by a manufacturer and therefore cannot be used by another manufacturer.

**ANS: model 🡪manufacturer**

1. All disk drives in a particular batch are the same model.

**ANS: batch 🡪 model**

1. All disk drives of a certain model of a particular manufacturer have exactly the same capacity.

**ANS: (model, manufacturer) 🡪capacity**