

For the scenario below identify the entities, their attributes and appropriate keys

The Angel Warehouse

The Angel Warehouse stores items for its parent company. The warehouse is organised into bays, which are storage areas, but the items themselves are stored in bins. Each bay contains a number of bins. Each bay is identified by a unique bay number and the bay location and the height of the bay are recorded. Each bin has a different number within the bay, always starting with bin no. 1, and while some bays have only 5 bins some have over 50. The size of each bin is recorded.

Some bays have a parking spot for one fork lift to help move items round the warehouse and lift items into bins. Each fork lift is allocated to a bay. Each fork lift has a unique equipment number and the maximum carrying weight of the fork lift needs to be known. Some fork lifts are petrol driven while some are electric.

For all bins the maximum loaded weight must be known.

When an item is taken into the warehouse it is assigned a unique number and the date is recorded as well as the item weight. Bins can store a number of items and when an item is put in a particular bin this date is also recorded. Items can be moved back and forth between bays and bins to optimise the warehouse storage.

A. Entity: Bay

- **Attributes:**
 - Bay Number (Unique, Primary Key)
 - Location (descriptive location of the bay)
 - Height (height of the bay)
 - Forklift Parking Spot (Boolean, true if bay has parking for a forklift)
- **Primary Key:** Bay Number

B. Entity: Forklift

- **Attributes:**
 - Equipment Number (Unique, Primary Key)
 - Maximum Carrying Weight
 - Type (Electric or Petrol)
 - Bay Number (Foreign Key referencing Bay, where the forklift is parked)
- **Primary Key:** Equipment Number

C. Entity: Bin

- **Attributes:**
 - Bin Number (Primary Key with Bay Number)
 - Bay Number (Foreign Key referencing Bay)
 - Size (size of the bin)
 - Maximum Loaded Weight
- **Primary Key:** (Bin Number, Bay Number)

D. Entity: Item

- **Attributes:**
 - Item Number (Unique, Primary Key)
 - Date Received (date the item was brought into the warehouse)
 - Weight (weight of the item)
- **Primary Key:** Item Number

E. Entity: Item_Bin_Assignment (Tracks item storage in bins and any movement between bins)

- **Attributes:**
 - Item Number (Foreign Key referencing Item)
 - Bin Number (Foreign Key referencing Bin)
 - Bay Number (Foreign Key referencing Bay to link with Bin)
 - Date Placed in Bin (date the item was placed in this bin)
 - Date Removed from Bin (nullable, indicating if the item has been moved or is still in the bin)
- **Primary Keys:** Item Number, Bin Number, Bay Number, Date Placed in Bin