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# **Databases Project: Phase 1**

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CIIC 4060  
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## Database Project Phase I: E-R Model Report

### Entities description:

#### 1- Consumers:

Each consumers entity has a unique id called cid, which serves as a primary key. Attributes that will also be stored from each consumer include the consumer's first name as a string (cfirstname), the last name as a string (clastname), the location as a string (clocation), the consumer's age as an integer (cage) and the consumer's phone as a multi value attribute ({cphone}).

#### 2- Suppliers:

Each suppliers entity has a unique id called sid, which serves as a primary key. Attributes that will also be stored from each supplier includes the supplier's first name as a string (sfirstname), the last name as a string (slastname), the organization the supplier represents as a string (sorganization), the location as a string (slocation) and the supplier's phone as a multi value attribute ({cphone}).

#### 3- Fuel:

Each fuel entity has a unique id called fuelid, which serves as a primary key. Attributes that will also be stored from each fuel record includes the fuel type (fueltype) as a string, the number available as an integer (fuelnumavailable), the location as a multi value attribute ({fuellocation}) in which the fuel is available and the supplier as a multi value string which is a foreign key that points to the suppliers entity ({fuelsupplier}).

#### 4- Equipment:

Each equipment entity has a unique id called eid, which serves as a primary key. Attributes that will also be stored from each equipment record includes the equipment type (etype) as a string, the number available as an integer (enumavailable), the supplier as a multi value string which is a foreign key that points to the suppliers entity ({esupplier}), the brand of the equipment as a string (ebrand) and the location as a multi value string attribute ({elocation}) in which equipment is available.

#### 5- Medical Devices:

Each medical device entity has a unique id called mdid, which serves as a primary key. Attributes that will also be stored from each equipment record includes the medical device name (mdname) as a string, the number available as an integer (mdnumavailable), the supplier as a multi value string which is a foreign key that points to the suppliers entity ({mdsupplier}), the brand of the medical device as a string (mdbrand) and the location as a multi value string attribute ({mdlocation}) in which medical devices are available.

#### 6- Food:

Each food entity has a unique id called fid, which serves as a primary key. Attributes that will also be stored from each food record includes the food name (fname) as a string, the number available as an integer (fnumavailable), the supplier as a multi value string which is a foreign key that points to the suppliers entity ({fsupplier}), the brand of the food as a string (fbrand), the location as a multi value string attribute ({flocation}) in which the food type is available and the food expiration date as a string (fexpdate)

#### 7- Medications:

Each medication entity has a unique id called mid, which serves as a primary key. Attributes that will also be stored from each medication record includes the medication's name (mname) as a string, the number available as an integer (mnumavailable), the supplier as a multi value string which is a foreign key that points to the suppliers entity ({msupplier}), the brand of the medication as a string (mbrand), the location as a multi value string attribute ({mlocation}) in which the type of medication is available and the medication's expiration date as a string (mexpdate).

#### 8- Administrators:

Each administrator entity has a unique id called aid, which serves as primary key. Attributes that will also be stored from each administrator includes the administrator's first name as a string (afirstname), the last name as a string (alastname), the location as a string (alocation), the administrator's age as an integer (a\_age) and the administrator's phone as a multi value attribute ({aphone}).

### **Relationship explanations:**

#### 1- Medication consume (mconsumes):

A many to one relationship between the medications and consumers entities. The many part is in the medications side since each consumer can receive multiple medications and medications can only be assigned or sold to one specific consumer. The mconsumes relationship has the price in which the medication was sold, which is zero if it was donated, as a float (mconsume\_price), the quantity of it given to the consumer (mconsume\_quantity) and the date it was provided to the consumer (mconsume\_date).

#### 2- Food consume (food\_consume):

A many to one relationship between the food and consumers entities. The many relationships come from the food side since each consumer can receive multiple types of food and food can only be assigned or sold to one specific consumer. The food\_consume relationship has the price in which the food was sold, which is zero if it was donated, as a float (fconsume\_price), the quantity of it given to the consumer (fconsume\_quantity) and the date it was provided to the consumer (fconsume\_date).

### 3- Medical Devices consume (mdconsume):

A many to one relationship between the medical devices and consumers entities. The many relationships come from the medical devices side since each consumer can receive multiple devices and medications can only be assigned or sold to one specific consumer. The mdconsumes relationship has the price in which the devices were sold, which is zero if it was donated, as a float (mdconsume\_price), the quantity of it given to the consumer (mdconsume\_quantity) and the date it was provided to the consumer (mdconsume\_date).

### 4- Fuel consume (fuel\_consume):

A many to one relationship between the fuel and consumers entities. The many relationships come from the fuel side since each consumer can receive different quantities of fuel and fuel can only be assigned or sold to one specific consumer. The fuel\_consume relationship has the price in which the fuel was sold, which is zero if it was donated, as a float (fconsume\_price), the quantity of it given to the consumer (fconsume\_quantity) and the date it was provided to the consumer (fconsume\_date).

### 5- Equipment consume (econsume):

A many to one relationship between the equipment and consumers entities. The many relationships come from the equipment side since each consumer can receive different quantities of equipment and equipment can only be assigned or sold to one specific consumer. The econsumes relationship has the price in which the equipment was sold, which is zero if it was donated, as a float (econsume\_price), the quantity of it given to the consumer (econsume\_quantity) and the date it was provided to the consumer (econsume\_date).

### 6- Medication supplies (msupplies):

A many to many relationship between the medications and suppliers entities. It is Many to Many because there are many different suppliers that can supply the same medications. The msupplies relationship has the price in which the medication was bought, which is zero if it was donated, as a float (msupply\_price), the quantity of it given (msupply\_quantity) and the date it was provided (msupply\_date).

### 7- Food supplies (food\_supplies):

A many to many relationship between the food and suppliers entities. It is Many to Many because there are many different suppliers that can supply the same types of food. The food\_supplies relationship has the price in which the food was bought, which is zero if it was donated, as a float (fsupply\_price), the quantity of it given (fsupply\_quantity) and the date it was provided (fsupply\_date).

### 8- Medication Devices supplies (mdsupplies):

A many to many relationship between the medical devices and suppliers entities. It is Many to Many because there are many different suppliers that can supply the same devices. The mdsupplies relationship has the price in which the devices were bought, which is zero if it was donated, as a float (mdsupply\_price), the quantity of it given (mdsupply\_quantity) and the date it was provided (mdsupply\_date).

9- Fuel supplies (fuel\_supplies):

A many to many relationship between the fuel and suppliers entities. It is Many to Many because there are many different suppliers that can supply the same types of fuel. The fuel\_supplies relationship has the price in which the fuel was bought, which is zero if it was donated, as a float (fuelsupply\_price), the quantity of it given (fuelsupply\_quantity) and the date it was provided (fuelsupply\_date).

10- Equipment supplies (esupplies):

A many to many relationship between the equipment and suppliers entities. It is Many to Many because there are many different suppliers that can supply the same types of equipment. The esupplies relationship has the price in which the equipment was bought, which is zero if it was donated, as a float (esupply\_price), the quantity of it given (esupply\_quantity) and the date it was provided (esupply\_date).