The Database will be about a gas station, the user has provided some specifications for the database
requirements description:

1- The gas station is given the name Al-Rayan and is located in Taiz Street, it operates 24 hours during the day, next to the gas station exists a Mini Market that is owned by the gas station. Just an individual employee works there as a cashier. In addition, the gas station owns 3 pumps and, on each pump, there are 2 counters, the pumps are also connected to the tanks, the tanks are 6 and they are guarded by 2 employees responsible for managing the supplies coming from suppliers and watching for sabotage attempts or accidental fires, the station deals with 2 suppliers , one is from the official Government, and the other is from the supplier but they force to take the shipment, the supplier delivers the shipment by the trucks the station owns , which are 4 trucks are owned.

2- On the first time Employees getting a job, a warrantor must provide a guarantee of that employee.

3- most of the employees are working on the pumps, and each one of them is registered on one counter, therefore 2 employees are working on one pump, each must write down the value of the counter on the beginning of working and by the end of the day he must provide the value of the counter on his start of work and the current value at the end of work to the cashier, they also can issue bills for clients, The cashier must check the counters and the money and deposit it to the safe.

4- the station gets supplied most of the time from the YPC And the YPCM companies, and when they cannot supply the station, we take from the suppliers shipments when they force us to take them

5- 4 Employees working on trucks deliver the materials from the suppliers.

RELATIONS and ENTITY TYPES:

WORK_ON, a 1: N relationship type between COUNTER and EMPLOYEE. The participation of COUNTER is total, whereas that of EMPLOYEE is determined to be partial, after consultation with the users indicates that not all Employees work just on counter.

WORK_ON, 1:1 between (EMPLOYEE and MINI_MARKET), and between (TRUCK and EMPLOYEE), and between (CASHIER and EMPLOYEE), The EMPLOYEE is of partial participation as the reason that just few employees work on previous other entity types, total participation of MINI-Market, TRUCK, and Cashier entity types.

WORKS_IN, a 1: N (one-to-many) relationship type between GAS_STATION and EMPLOYEE. Both participations are total.

GUARANTEE, a 1: N (one-to-many) relationship type between WARRANTOR and EMPLOYEE, which is An Employee must have one Warrantor when getting the job. a warrantor can guarantee many employees, both participations are total.

GENERATE, a 1: N (one-to-many) relationship type between COUNTER and TANK, of that the employee take materials from the tank and write down the value taken. Both participations are total.

POST, a 1: N (one-to-many) relationship type between COUNTER and CASHIER, of that the employee on each counter every day provide the values of the counter, the counter is of partial participation as not all of them work every day and the cashier is of total participation.

ISSUE, a 1: N (one-to-many) relationship type between COUNTER and BILL, of that the employee working on each counter can issue bills for clients, the COUNTER is of partial participation as not all of them work on counters and the Bill is of total participation.

SUPERVISE, 1:1 between TANK and EMPLOYEE, the TANK and EMPLOYEE, as of the mini-world rules states that an employee watch and guard the tanks. Tank is of total participation and EMPLOYEE is partial.

HAS a: 1:1 between GAS_STATION and MINI_MARKET as it is owned by the station, the mini-market and the station both are of total participation, also between the Cashier and GAS_STATION and both of total participation.

HAS a: 1: N between (TANK and GAS_STATION) and between (COUNTER and GAS_STATION) as the miniworld states that it has 6 tanks, both are of total participation, in addition, between the TRUCK and GAS_STATION both are of total participation, between the PRODUCT and MINI-MARKET also and both are of total participation.

FSUPPLY: M:N between FOREIGN_PROVIDER and TANK , FOREIGN_PROVIDER is of a total participation, and the Tank is partial.

TSUPPLY: TERNARY RELATIONSHIP between SUPPLIER,TANK,TRUCK.