Quawan

IST 659

Final Project 2nd Installment: Business Rules and ERD

March 11, 2015.

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|  | **Business Rule** | **Implementation** |
| 1 | Each Location must supply at a minimal of the store name, address, zipcode, and city | Within the entity Location these fields cannot be null. |
| 2 | Each Location will have their own bikes in stock | BikeInventory entity there is a one to many relationship from Location to BikeInventory |
| 3 | Bikes in the shop can used or old must have an inventory number | BikeInventory entity uses the bikeInventoryID Number as the primary key. |
| 4 | All customers that come in are asked what category of Bikes they are looking for. The most popular categories are Hybrids, Mountain Bikes, and Road bikes | The BikeType entity will have all 3 categories populated |
| 5 | The bike shops buy used bikes and advertise the bike as used. | The BikeInventory Entity relates to the BikeCondition. The relationship is many bikes can either be new or used.  This table will always only have 3 rows new, used, or external. A constraint will be implemented to enforce this. BikeInventory will have attribute to the store the selling price of the used bike |
| 6 | Bike Shops can change bike prices of any bike new or old. | Current Prices can be updated in the BikeInventory Table. |
| 7 | Bike shops offer a variety of different services: including tune-ups, tire repairs, Derailleur adjustments, etc. Each service has different prices that can be subject to change. | The Service entity has a many to many relationships with the Location entity. The associative entity LocationService store the many-to-many relationship and have an attribute for price |
| 8 | When a customer brings in a bike to be serviced it is considered to be the category of “external” | The bike that is brought in is stored in the BikeInventory table and it will point to “external” in the BikeType table. This bike then can be associated with the services needed. The data model supports the nature of a bike needing multiple services and multiple services can be applied to many bike. BikeInventoryService is the Bridge table |
| 9 | A bike brought in may not have a serial number that can be deciphered. An inventory number will automatically be assigned in this case. | bikeSerialNum is an optional field since there are cases where the serial number is impossible to read |
| 10 | One bike shop can refer a customer to another bike shop if the first bike shop does not have the bike in stock the customer needs | All references are stored in the Reference table. The customer involved and the bike being referred will be stored in the Reference table as well. referLocationID identifies the bikeshop doing the referring and referToLocation is the bike shop being referred |

