Cable City NZ is a nationally recognized electronic store chain in New Zealand known for its 24/7 service with 50 stores nationwide providing anything from basic cables and components to hardware, gaming, TV’s, music equipment and more. The store chain is in a period of growth and are looking ahead for a more robust system to hold their data. Cable City is requiring a 2-person team to head the migration of their old data into the new system including a DBA that will be required to design and maintain the database with an emphasis on security and a developer to create the resulting database according to the design. To demo the system they require all products, dispatch and customer data be loaded as well as a sample of the sales transactions.

**Customer table**

The electronic store currently has 9000 unique customers on record each having a distinct ID number to identify them in the stores database. The company also needs to maintain a profile on the customers which include their name, phone number and physical address (which would be required in the event of mailing out orders). The electronic store also would like to know when the customer first joined so that they can easily identify their dedicated customers for promotions. The company runs a frequent catalogue that details promotions, discounts and upcoming events held by local stores which needs to be emailed to customers therefore the store would need to maintain a customer’s email address so that they can be informed. Of course a customer may opt out of the emailing list and so each customer may optionally give their email address. The company also runs a customer rewards promotion where customers may collect points from purchases they have made and earn rewards based on the amount of points they have accumulated at the end of the stores 13-week business period and so it is necessary to maintain the number of points each customer has. A customer who purchases products over $100 will receive one point and a bonus of three points if they spend over $300.

The electronic store also allows customers to maintain an online account and make purchases from their online store and so consequently customers require a password in order to log into their respective account. The electronic store cares about the security of their customers and as a precaution they don’t store the customer’s passwords in plain text and instead they maintain the encrypted passwords. The customer tables will include both frequent insertions whereby customers register as members and also updates of existing customers will be a common occurrence as customers may need to update contact details and profile information.

**Product table**

The electronic store needs to maintain an inventory of products each uniquely identifiable by a product number. The store currently has 5000 distinct products and varying stock across all stores. Product details need to be maintained including the products name, description, price and stock count. The date at which the product was added should also be maintained so that the store can easily identify new and old products. When a product is dispatched the products quantity on hand should be updated according to the number of units dispatched. The product table will experience all activities as there will be regular insertions for new product additions and deletions of old and unwanted products, updates to existing products for changes in prices/details and inventory.

**Sales table**

Sales transactions need to be maintained where by customer purchases of a product are recorded. To allow for convenient lookups, sales records need to hold the unique ID number of the sales transaction, the ID of the customer who purchased the product, the ID of the product that was purchased and the ID of the dispatcher. The date of when the sale was made also needs to be recorded so that staff can see the history of the sales and allows for analytics of sales data by management. To ensure the data is meaningful, the number of units of the product sold as well as the total value of the sale needs to be maintained.

The table’s activities will almost exclusively be insertions and deletions with infrequent updates that won’t affect the size of the table. There will be 200 expected sales transactions each day at each of the 50 stores. The store is open all 7 days and we can therefore expect up to 910,000 sales transactions recorded by the end of the 13-week cycle and so the size of the sales transaction ID must support the substantially large values and account for future growth.

When a sale is made the dispatching inventory quantity should be updated according to the number of units that were purchased. As part of the customer rewards program, after each sale the customer’s points should be updated where necessary based on the value of the purchase.

**Final schema**

**Customer table**

Cust\_id Number(4)

Cust\_name Varchar2(30)

Cust\_add varchar2(30)

Phone varchar2(10)

Email varchar2(40)

Join\_date date

Password varchar2(32)

**Product table**

Prod\_id Number(4)

Prod\_name varchar2(30)

Prod\_desc varchar2(40)

QOH Number(5)

Prod\_Price Number(8, 2)

Added\_date date

**Sales table**

Sale\_id Number(6)

Cust\_id Number(4)

Prod\_id Number(4)

Disp\_id Number(4)

Units\_sold Number(5)

Sale\_date date

Total\_price number(8, 2)

**Despatch table**

Desp\_id Number(4)

Prod\_name Varchar2(30)

ShelfLoc Varchar2(6)

Quantity Number(5)