User Volume Table

The table below shows the list of user groups who will use the system.

|  |  |  |
| --- | --- | --- |
| User Group | Country/Location/Count | Remarks |
| Branch Manager | Singapore/Office /01 | Branch Manager is stationed at the office and needs to use the system frequently. |
| Promoter | Singapore/Supermarket/10 per shift | Promoters are in charge of a set of products and designated shelves and in the shift sometimes need to access the system. |
| Cashier | Singapore/ Cash Counter/03 per shift | Cashiers are stationed at the cash counter and in the shift need to use the system every day. |
| Store Man | Singapore/Storage/02 per shift | Store men are stationed at the storage and in the shift need to use the system every day. |
| Owner | Singapore/Office/01 | Owner is not office bounded and sometimes needs to use the system. |

Note: When it comes to user volume requirement, the number of user is the number of concurrent users. In GetFreshFood Supermarket, there are two shifts, 7am to 3pm and 3pm to 10pm. And here assumes that every staff worked on the same floor-level 1 of the GetFreshFood Supermarket.

Business Txn Volume Table 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Business Transaction** | **Business criticality** | **No. of User** | **Transaction information** | **Concurrently Important Activities** |
| Log in | C | 32\*\*\* | 7/week/staff |  |
| Log out | C | 32 | 7/week/staff |  |
| Change Login Details | L | 32 | 1/week/ staff |  |
| Generate Label | M | 20 | 2/week/ staff |  |
| Record Damaged/Expired goods | M | 20 | 4/week/staff |  |
| Maintain Shelf Inventory | C | 20 | 2times/day/staff |  |
| Manage Supplier | C | 2 | 3/week/staff |  |
| Manage Product Price | C | 1 | 3times/month |  |
| Notify supplier | C | 4 | 2/month/staff |  |
| Maintain Store Inventory | C | 4 | 1/week/staff |  |
| Place Order | C | 4 | 3/week/staff |  |
| Do Billing | C | 6 | 350billing/day\* | 350/15=23/hr\*\* |
| Generate End-of-Day sale | C | 6 | 6/shift |  |
| Maintain user Account | M | 1 | 1/month |  |
| Check Sales Report | C | 2 | 1/shift |  |
| Manage Product | C | 1 | 4times/month/staff |  |

\*Do billing=200/1st-shift+150/2nd-shift

\*\*supermarket has been operating for 15hrs per day

\*\*\*6 cashier+20 promoter+4 storeman+1 branch manager+1 owner=32 users

C->critical, m->moderate, L->low

Data Volume Table

The table below shows the significant data stored and retain for each business entity when the system starts operating. Data volume requirement will affect the database server configuration.

|  |  |  |  |
| --- | --- | --- | --- |
| Entity Class | Source Document | Retention Period | Target Volume |
| Product Information | Product Form | 8 years. Need to keep for 8 years. | The supermarket has 80,000 kinds of products now and we assume that each product has a product form.  And we assume that each year the supermarket will take in 1000 new products.  Now: 80,000 product Information  8yr: (80,000+1000)× 8=648,000 product Information |
| User Profile | User account form | 5 years | Assume growth of employee is 12.5% and this system is only used for internal workers.  Now: 32 user account  5yr: 32+4×5=52 user account |
| Supplier Profile | Supplier form | 8 years | Assumption 1: Because some of the products are from the same supplier, we assume that average 2 product has 1 supplier.  Assumption 2:  The supermarket has 80,000 kinds of products now.  Assumption 3:  Every year the growth of new products of the supermarket is 3%.  Now: 40,000 supplier  forms  8yr: 40,000×3%×8+40,000=49,600 |
| Order | Order form | 8 year | Assume every year each product needs to be ordered for 6 times.  1yr: 80,000×6=48,000 order form  8yr: 48,000×8=384,000 order form |
| Cash Register | End-of-Day sales form | 8 years | End-of-Day sales form each shift: 1  End-of-Day sales form every day: 2  1yr: 2×365=730 End-of-Day sales form  8yr: 730×8=5,840 End-of-Day sales form |
| Billing Details | Receipt | 3 years | Assume 700 customers will place order each day in this supermarket and the annual growth of the customer is 10%.  1yr: 700×365=255,500  3yr: 255,500(1+10%)=281,050 |
| Classification Details | Product Form | 4 years | 1 week: 1 Classification Details  1yr: 52×1=52  4 yr: 52×4=208 |
| Price Change | Price Form | 4 years | Assume the owner will change the price of some certain products twice every month.  1yr: 2×12=24 Price Change form  4yr: 24×4=96 Price Change form |
| Shelf Inventory | Shelf form | 3 years | Assume every shift of the promoter will record a shelf inventory.  1 day: 2 Shelf Inventory record  1yr: 2×365=730 Shelf Inventory record  3yr: 730×3=2,190 Shelf Inventory record |
| Store Inventory | Store form | 8 years | The supermarket has 80,000 kinds of products now. Assume every product needs a store inventory record.  1yr: 80,000 store inventory records  8yr: 648,000 store inventory records |
| Category | Product Form | 8 years | Assume every 2 year there will be 2 category added.  Now: 10  8yr: 18 |
| Subcategory | Product Form | 8 years | The supermarket has 80,000 kinds of products now.  Subcategory: 80,000/10=8,000  8yr: 640,000/18=35,556 |

Data Access Profile

Different actors have different access to the system database. The table below from data point of view shows the ability of various actors to create, update, read and delete information of each entity classes.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| User Role(actor)  Data(entity class) | Cashier | Promoter | Store Man | Branch Manager | Owner |
| Product Information | r | r | r | c,u,r,d | c,u,r,d |
| User Profile | r,u | r,u | r,u | c,r,d | c,r,d |
| Supplier Profile |  |  | r,u | c, r,d | c,r,d |
| Order |  | r | c,u,r,d | r | r |
| Cash Register | c,u,r,d | r | r | r | r |
| Billing Details | c,u,r,d | r |  | r | r |
| Classification Details |  | r | r | c,u,r,d | c,u,r,d |
| Price Change | r | r | r | r | c,u,r,d |
| Shelf Inventory |  | c,u,r,d |  | r | r |
| Store Inventory | r | r | c,u,r,d | r | r |
| Category | r | r | c,u,r,d | r | r |
| Subcategory | r | r | c,u,r,d | r | r |

c: Create u: Update r: Read d: Delete

Use Case Access Profile

The table below shows that different system actors process various use cases and get different access to the functions of the system. These access rights will be automatically allocated when an account is created in the system as the following user role.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| User Role(Actor)  Biz Txn(use case) | Cashier | Promoter | Store Man | Branch Manager | Owner |
| Log In | × | × | × | × | × |
| Log Out | × | × | × | × | × |
| Change Login Details | × | × | × | × | × |
| Do Billing | × |  |  |  |  |
| Generate End-of-Day sales | × |  |  |  |  |
| Generate Label |  | × |  |  |  |
| Record Damage/Expired Goods |  | × |  |  |  |
| Maintain Shelf Inventory |  | × |  |  |  |
| Notify Suppliers |  |  | × |  |  |
| Place Order |  |  | × |  |  |
| Maintain Store Inventory |  |  | × |  |  |
| Manage Product |  |  |  | × (main user\*) | × |
| Check Sales Report |  |  |  | × (main user\*) | × |
| Manage User Account |  |  |  | × (main user\*) | × |
| Manage Supplier |  |  |  | × (main user\*) | × |
| Manage Product Price |  |  |  |  | × |

Note: \*Main user – highest ranking users