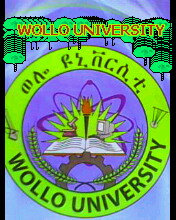
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DATABASE PROJECT FOR INFORMATION SYSTEM

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**Acknowledgement**

First we thanks to college of informatics and our instructor for helping us to know a lot of things about system analysis and design by teaching this course effectively and efficiently and by giving these project.

Then we would like to thank to the manager and employees of the supermarket for giving us information about the supermarket which helps us to design this information management system.

And lastly we would like to thank the group member for their group spirit and scarifying their time to complete this project on time.

1. **Introduction**

The aim this proposal is to make the manual paper based recording system to computerized and make easily to get information of the customer and to avoids paper work and also minimize the time maximized the modern service*.*

## Back ground

Super market was established or began in Ethiopia in the few past years.This Super market provide an important material for the user like packed food, soft food and soft drinks, cosmetics, and oils. But there is a problem with the organization itself in terms of security, life time of the product and consumes much more power since they have file (manual) based system to perform their activities.

Then these projects groups are mainly concerned to solve those problems by gathering information from the users of the system by developing computerize data base system. Then, this is much more important to solve the problems which are listed above.

1. **Statement of problem**

The problems that we tried to discuss are stated below individually with their justification.

* **Security**: as the organization uses manual based system it leads to different unwanted activities. For example, if one material is sold by same amount, the person who sold it can be uses it the money for him/herself and also, he/she can change the price of the material. means he/she increase or decrease the price to fulfill his/her profit by deleting the first price of the material since it is manual system not only that but also it can lead to un believe each other (between the manager and employee).
* **Take much more power(human power):**since there is no data based system the manager and the employee can force to lose much more time on checking on the material that are expired and replacement of goods and to know in which category are the goods(materials) need replacement.
* It is too difficult to replace the expired goods by the new goods
* Difficult to prepare report: because the system is manual.
* Lose of data integrity: there was chances for incorrect (inappropriate) information are recorded.

## 4. Objective of the project

### 4.1 general objective of the project

The general objective of this project is to develop computerized system toall super markets in Ethiopia.

### 4.2. Specific objective of the project

* To develop system that record and store goods/materials according to their categories.
* To manage the goods that are inserted and removed (due to expiration and sold) by attaching to the system to the main store and supper market.
* To reduce man power that develops computerized system.

## 5. Scope and Limitations of the project

## Scope of the project

To develop database system to perform detail requirement gathering which would be the existing and enhanced functionality of the data base system for super markets.

**Limitations of the project**

* *The system works in English* language only.
* *The system works with the help of electricity only.*

**6. Methodology**

**6.1. Data collection**

**Interview**: We use interview and document analysis in order to obtain the information about the practices and problems or the strength and weakness of minimarket.

**Document analysis**: Consulted and analyzed written materials/documents that describe the operations conducted in the mini market further the strength and support the information that applied the technique.

**Observation**: Used to gather additional data by observing the actual work being done by the stakeholders with what was obtained through interview.

**6.2. System Analysis and design (System development technique)**

* Structured system analysis and design approach is used for both analysis and design phases.
* We follow this approach because we believe that it helps us:
* To simplify the design and implementation phase.
* To play a major role in avoiding time wastage.

**6.3. Development tools**

**A. Software Tools**

* Database software
* MY\_SQL for database purpose
* Documentation
* MS-word 2007
* E-draws UML Diagram
* Operating system
* Window 7
* Interface language: English Language

**B. Hardware Components**

* CPU
* Flash:16 GB
* Hard disk:300 GB
* Monitor: LCD

**7. Significance and beneficiaries of the project**

**7.1. Significance for the project**

* Ensures data accuracy and integrity
* Minimize time need for various data process.
* To provide better service.
* To minimize data duplication/redundancy.
* To avoid manual based data required.
* To provide cost efficient.
* Data security and reliability.
* Fast data insertion and retrieval.

## 8. Description of the existing system

The super markets proved important goods to community like packed foods, soft and alcoholic drinks, cosmetics etc. this minimarket has employees that works in different position example manager to manage the overall activities of the organization and casher. This minimarket use manual base system to store information about the goods.

## 8.1 Strength and weakens of the existing system

### 8.1.1 Strength of existing system

* The organization provides necessary goods to society.
* It gives proper service to the customers.
* In the super market materials are organized in ordered form by their item categories. This helps the customers to access items without help of others.
* Each item has its name and price on its cover it is helpful for the users to pay easily.

### 8.1.2 Weakens of existing system

* The organization has no computerized file recorded system.
* It doesn’t have database system that tells weather the goods are being expired or not.
* Difficult to add, delete, search and update the data of available goods.

## 9. Overview of the new system

The new system works based on the requirements that we have defined in the requirement specification methodology .the system works on computerized based system. There must be stored data in data storage, then the manager checks the super market if the goods are finished or not, whether the goods are expired or not by looking on the stored data in the new computerized system. Generally the new system is the most flexible, one from the formersystem to perform the activities. What we mean is that the new system has higher speed, uses low human power.

**10. Feasibility Study**

**10.1. Economic feasibility**

* The system does not require much more money and materials for implementing and expanding.
* The actual tangible costs that we demand are described below

**Cost break down (Table 1.1)**

|  | | |
| --- | --- | --- |
| Type | Quantity | Cost in birr |
| **Computer and its hardware peripherals** | **-** | **Available in our laboratory** |
| **Software** | **-** | **Available in our laboratory** |
| **Flash(16GB)** | **1** | **200** |
| **Pen and paper** | **-** | **15** |
| **Transport** | **-** | **50** |
| **Total** |  | **265** |

*Conclusion: feasible*

**10.2. Time feasibility**

| **Project scheduling(table1.2)** | |
| --- | --- |
| **Task name** | **Year/Month/date** |
| **Problem Analysis** | **nov 2010/3/21** |
| **Analysis requirement** | **dec 2010/4/12** |
| **Design analysis** | **Dec 2010/4/15** |
| **Physical design and implementation** | **Jun 2010/4/20** |

**10.3. Operational feasibility**

* Members of the office require the database to facilitate their day-to-day activities with considering resource.
* The System’s interface is easily understandable both by Staff members and customers

*We conclude that our project is operational feasible!*

**10.4. Technical feasibility**

* The project is practically applicable with in the current technology that is available today.
* All stakeholders are trained and hence we believe that there will be no damage in technical aspects.

*We can conclude that our project is technically feasible*

**CHAPTER 2**

**CONCEPTUAL DATA BASE DESIGN**

## 11. List of entities

The new system has 6 entities.

* Manager
* Employee
* Customer
* Item
* Supplier
* Store

**12. Lists of entities with their attributes**

* Manager has the attributes id, name, address, sex and age.
* Employee has the attributes id, name, address, salary, sex and age.
* Customer has the attributes id, name, sex, address and age.
* Item has the attributes type, price, address, code, expired date and name.
* Supplier has the attributes id, name, address and license.
* Store has the attributes number and location.

13. **ER-Diagram**

**Customer**

**Employee**

Receive **price**

Address

1-\*

1-\* 1-\* 1-\* 1-\*

Manages

Address

1-\*

**Sells**

Takes

 1-1

**Manager**

1-\*

Address

**Item**

1-\* 1-1

1-\*

**Ordered**

1-\*

**Checks**

Address

**Stored in**

1-\*

**Supplier**

1-\* 1-\*

**Store**

**CHAPTER 3**

**LOGICAL DATA BASE DESIGN**

**14. Converting ER-Diagram in to tables**

MAPPING Managertable

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | Mgid | Fname | Lname | Sex | Age |  | |  |  |  |

Manager Address table

|  |  |  |
| --- | --- | --- |
| |  |  | | --- | --- | | Mgid | Address | |

MAPPING Employee table

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | | Eid |  | Fname | lname |  | Age | salary | Sex | |

Employee Address table

|  |  |
| --- | --- |
| Eid | Address |

MAPPINGCustomer table

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Cid |  | Fname |  | Lname |  | sex | Age |

CustomerAddress table

|  |  |  |
| --- | --- | --- |
| Cid |  | Address |

MAPPINGItem table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Icode | Name | expire date | Price | Type |

ItemAddress table

|  |  |
| --- | --- |
| Icode | Address |

MAPPING Supplier table

|  |  |  |  |
| --- | --- | --- | --- |
| Suid | Fname | lname | License |

Supplier Address table

|  |  |
| --- | --- |
| Suid | Address |

MAPPING Store table

|  |  |
| --- | --- |
| Stno | Location |

***RELATION SHIP TABLE***

***Mapping TAKES relation ship***

***Many-many relation ships***

***“Customer takes in an item”***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Cid** |  | **Icode** |  | **Price** |
|  | |  | |  |

***Mapping STORED IN relation ship***

***Many-many-relation ships***

***“Items stored in a store”***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Icode |  | Stno |  | *number* | |
|  | | | | |

***Mapping CHECKS relation ship***

***Many-many-relation ships***

***“Employee’s checks an item”***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Eid |  | Stno |  | *NO of item* |  | | *Expire date* | |
|  | |  | |  | |  | |

***Mapping SELLS relation ship***

***Many-many-relation ships***

***“Employee’s sells an item”***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Eid |  | Icode |  | *price* |

***Mapping MANAGES relation ship***

***One-many-relation ships***

***“Manager manages Employee”***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Eid | Fname |  | lname |  | Age |  | salary |  | Sex |  | Mgid |

***Mapping ORDERED relation ship***

***One-many-relation ships***

***“Manager order supplier”***

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Suid |  | Fname |  | lname | License | Mgid |

***Mapping RECEIVE PRICE relation ship***

***Many-many-relation ships***

***“Employees receive price in a customer”***

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Eid |  | Cid |  | *price* |
|  | |  | |  |

**Testing normalization**

The above schemas full fill the first, second and third normalization form .in all the above schemas there is no;

* Multivalve dependency
* Partial dependency and
* Transitive dependency, so it is in normalized form.

***CHAPTER 4***

**Physical data base design**

15.**Implementation**

CreatedatabaseNEIMA\_MINIMARKET;

CREATETABLEemployee (

E\_IDnvarchar (20)notnullprimarykey,

E\_salarymoneynotnull,

E\_sexnvarchar (20)notnull,

E\_fnamenvarchar (20)notnull,

E\_lnamenvarchar (20)notnull,

E\_addressnvarchar (20)notnull

);

CREATETABLEStore (

St\_nointPRIMARYKEYnotnull,

Locationchar (20)notnull,

E\_IDnvarchar (20)FOREIGNKEYREFERENCESemployee (E\_ID)

);

CREATETABLEitem (

I\_addressnvarchar (20)notnull,

I\_codenvarchar (20)PRIMARYKEY,

I\_pricemoneynotnull,

I\_expirdatenvarchar (20) notnull,

I\_TYPEnvarchar (20) notnull,

I\_namenvarchar (20) notnull,

E\_IDnvarchar (20)FOREIGNKEYREFERENCESemployee (E\_ID),

St\_nointFOREIGNKEYREFERENCESstore (St\_no)

);

CREATETABLEcustomer(

C\_IDNVARCHAR (20)PRIMARYKEYnotnull,

C\_fnamechar (20)notnull,

C\_lnamechar (20)notnull,

C\_SexNVARCHAR (20)notnull,

C\_addressNVARCHAR (20)notnull,

C\_ageintnotnull,

E\_IDnvarchar (20)FOREIGNKEYREFERENCESemployee (E\_ID),

I\_codenvarchar (20)FOREIGNKEYREFERENCESitem (I\_code)

)

CREATETABLEmanager(

Mg\_lnameVARCHAR (20) notnull,

Mg\_fnameVARCHAR (20) notnull,

Mg\_salaryMONEYnotnull,

Mg\_sexnvarchar (20) notnull,

Mg\_addressVARCHAR (20) notnull,

Mg\_ageintnotnull,

Mg\_idNVARCHAR (20) PRIMARYKEYnotnull,

E\_IDnvarchar (20) FOREIGNKEYREFERENCESemployee (E\_ID)

)

CREATETABLEsuplier (

Su\_fnamechar (20) notnull,

Su\_lnamechar (20) notnull,

Su\_idNVARCHAR (20) PRIMARYKEYnotnull,

Su\_licenseNVARCHAR (20)notnull,

Su\_addressNVARCHAR (20)notnull,

Mg\_idnvarchar (20) FOREIGNKEYREFERENCESmanager (Mg\_id)

);

Insertintoemployee (E\_ID,E\_salary,E\_sex,E\_fname,E\_lname,E\_address)

Values ('emp1',15434,'male','SILABATE','ENDALE','+2516987754')

Insertintoemployee (E\_ID, E\_salary,E\_sex,E\_fname, E\_lname,E\_address)

Values ('emp2', 2300,'female','SARA','Kebede','+251716754')

Insertintoemployee (E\_ID,E\_salary,E\_sex,E\_fname,E\_lname,E\_address)

Values ('emp3', 3500,'female','rewda','seid','+2517168768')

Insertintoemployee (E\_ID,E\_salary,E\_sex,E\_fname,E\_lname,E\_address)

Values ('emp4',3800,'male','jemal','endris','+2517168779')

Insertintoemployee (E\_ID,E\_salary,E\_sex,E\_fname,E\_lname,E\_address)

Values ('emp5',4500,'female','zna','belete','+2517168780');

Insertintostore (St\_no,Location,E\_ID)

Values (11,'dessie','emp2')

Insertintostore (St\_no,Location,E\_ID)

Values (12,'kemisie','emp5')

Insertintostore (St\_no,Location,E\_ID)

Values (13,'kocha','emp3')

Insertintostore (St\_no,Location,E\_ID)

Values (14,'kocha','emp4');

insertintoitem(I\_address,I\_code,I\_price,I\_expirdate,I\_TYPE,I\_name,E\_ID,St\_no)

VALUES ('a.a','it121',3000,'12/09/2019','cosmotics','shampoo','emp1',11)

insertintoitem(I\_address,I\_code,I\_price,I\_expirdate,I\_TYPE,I\_name,E\_ID,St\_no)

VALUES ('b.dar','it122',500,'18/09/2018','cosmotics','soap','emp5',14)

insertintoitem(I\_address,I\_code,I\_price,I\_expirdate,I\_TYPE,I\_name,E\_ID,St\_no)

VALUES ('a.a','it123',1000,'10/09/2017','fruit','orange','emp2',11)

insertintoitem(I\_address,I\_code,I\_price,I\_expirdate,I\_TYPE,I\_name,E\_ID,St\_no)

VALUES('dessie','it124',1500,'12/09/2017','soft drink','water','emp1',12);

insertintocustomer(C\_ID,C\_fname,C\_lname,C\_sex,C\_address,C\_age,E\_ID,I\_code)

Values ('cu1','melkam','yihun','female','+251459076',13,'emp2','it123')

insertintocustomer(C\_ID,C\_fname,C\_lname,C\_sex,C\_address,C\_age,E\_ID,I\_code)

Values ('cu2','meseret','zelalem','female','+25145000',23,'emp4','it121')

insertintocustomer(C\_ID,C\_fname,C\_lname,C\_sex,C\_address,C\_age,E\_ID,I\_code)

Values ('cu3','abdu','mohamed','male','+251459077',33,'emp3','it124')

insertintocustomer(C\_ID,C\_fname,C\_lname,C\_sex,C\_address,C\_age,E\_ID,I\_code)

Values ('cu4','brhanu','taye','male','+251459078',44,'emp1','it122')

insertintocustomer(C\_ID,C\_fname,C\_lname,C\_sex,C\_address,C\_age,E\_ID,I\_code)

Values ('cu5','wudu','neby','male','+251459079',73,'emp2','it123');

Insertintomanager (Mg\_lname,Mg\_fname,Mg\_salary,Mg\_sex,Mg\_address,Mg\_id,E\_ID)

Values ('zelalem','temesgen',4000,'male','+251464738','mg001','emp2')

Insertintomanager (Mg\_lname,Mg\_fname,Mg\_salary,Mg\_sex,Mg\_address,Mg\_id,E\_ID)

Values ('mengst','alemu',4500,'male','+251464766','mg002','emp1')

Insertintomanager (Mg\_lname,Mg\_fname,Mg\_salary,Mg\_sex,Mg\_address,Mg\_id,E\_ID)

Values ('lemlem','teme',6000,'female','+251464740','mg003','emp5');

Insertintosuplier (Su\_fname,Su\_lname,Su\_id,Su\_license,Su\_address,Mg\_id)

Values ('Abebe','habtamu','su01','give','+251923437','mg003')

Insertintosupplier (Su\_fname,Su\_lname,Su\_id,Su\_license,Su\_address,Mg\_id)

Values ('mulu','habtam','su02','give','+25192355','mg002')

Insertintosupplier (Su\_fname,Su\_lname,Su\_id,Su\_license,Su\_address,Mg\_id)

Values ('ale','birku','su03','not','+251923466','mg001')

Insertintosupplier (Su\_fname,Su\_lname,Su\_id,Su\_license,Su\_address,Mg\_id)

Values ('beletu','hayle','su04','give','+251923556','mg002');

Select\*fromemployee;

Select E\_ID,E\_salaryfromemployeewhereE\_sex='female';

Select\*fromemployeewhereE\_salary>300;

Select\*fromcustomer;

SelectC\_ID,I\_codefromcustomerwhereC\_sex='male';

Selectcount (\*)fromemployee;

Selectsum ('E\_salary'),max('E\_salary'), avg('E\_salary')fromemployee;

SelectMg\_lname,Mg\_fname,Mg\_salaryfromsuplier,managerwhereSu\_fname='mulu'andsuplier.Mg\_id=manager.Mg\_id;

SelectSu\_fname,Su\_idfromsupplier;

Select\*fromitemorderbyI\_codeasc;

Select\*fromitemwhereI\_TYPE='cosmotics';

Select\*fromitemwhereI\_price>1000 orderbyI\_nameasc;

UpdateitemsetI\_price=300,I\_expirdate='14/06/2011'whereI\_code='it123';

Select\*fromstore;

Select\*fromstorewhereLocation='dessie';

Select\*fromstore, employeewherestore.E\_Id=employee.E\_Id;

Select\*from manager orderbyMg\_lnamesac;

Select ‘Mg\_lname','Mg\_fname','Mg\_salary'frommanagerwhere'Mg\_sex'='female';

DeletefromemployeewhereE\_lname='Alma';

Deletefromcustomer;

16.**Conclusion**

In this project, the project team tries to develop computerized system formini market. Todesign this database the project team has made allot of efforts like collecting information to know what the current system looks like and what data base system should be designed to solve the problems of the minimarket. And lastly the database was designed to full fill the requirements and this project also use different software’s like Microsoft access, SQL, to design the database effectively. Theproject group hope that this data base system will be help full to minimize the burden of employees and the manager.