Bilkent University

Department of Computer Engineering

CS353 - Database Systems: Term Project Proposal

Maintenance Data Management System
Project Group No: 9
Assigned TA: Arif Usta

Project short-name: MDSM

Project Specifications

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Contents

1. Introduction

As technology developed, people met with the Internet and started to use applications. Some of these applications require just local storage, where most of the applications and websites use a database to store large amounts of data.

Database is a collection of data that belongs to the certain applications. In other words database stores the data of the application(s) in a well organized way. Usually data is stored in electronic form, and it is very easy to access and use that data.

There are many reasons out there that encourages engineers to use a database in their system and companies to have one. One of them is, as mentioned above, to be able to manage and store large amounts of data. The other one is accuracy. By accuracy we mean that since data is stored electronically, in most cases, database can be updated on a daily basis, if needed, which makes that data reliable since the data is up to date. Moreover, one of the most important features of database is to secure the data. For instance, the access to the data stored in a database can be limited. Depending on the users data can be read only, write only or edited and so on.

Companies like Vestel, Beko and etc., which produce electronic technologies, care about customer satisfaction. Therefore, these companies guarantee their products. Under some circumstances repairments are done, even depending on the conditions the old products can be replaced with the new ones.

In our project we are implementing Maintenance Data Management System (MDSM). The purpose of this system is to help the companies to keep track of the customers' requests, such as repairments, renewal and etc. of the products.

This report demonstrates crucial aspects of our database management system to support all the requirements of Maintenance Data Management System. For better understanding, the E/R diagram is also included in the report. Thus, the limitation will be listed, for clarifying the limits of our system.

2. Project Description

Companies can do repairments and other necessary things even if they do not have a database in their hand, as it has been done decades ago. Our purpose here is to help companies to be able to keep their customers' satisfaction very high. So in order to do that, companies need to be in touch with their customers. Our system will be helpful to these companies since they have to keep track of repairments, complaints and products. Customers will be able to call customer service to file requests or complaints about a specific product. And products will be repaired and delivered back to the customers. The status of the repairments will be kept and will be monitored by customer service. Any product that is not repairable, the customer will get a new one according to guarantee. Besides, working parts of the gadget will be recycled by dismantling staff and will be assigned as a product for a tech staff to use these parts for other repairments.

Additionally, according to the data, which contains all the requests and complaints, companies can find out the weak parts of the products and replace those specific parts if necessary in order to make the products to live longer, at least until the last day of guarantee.

3. Requirements

3.1 Functional Requirements

1. Employees will be grouped into 4 groups like Tech staff, Delivery staff, Customer service, and dismantling staff each will have different tasks to do.
2. Employees will be able to login system with their ID and password.
3. Customers will be able to choose a language to talk with customer service.
4. Customers will be able to file complaints about special product to the customer service and conversations will be recorded.
5. Customers will be able to request repairments about special product to the customer service and conversations will be recorded.
6. Customer service will be able to assign new complaint about product.
7. Customer service will be able to assign new repairment request about product.
8. Each product will be assigned to categories or even subcategories.
9. Repairment staff will repair and change the status of the repairment.
10. Tech staff will be able to get spare parts from the stock.

11. Tech staff will be able to get new product for products that is unrepairable.
12. Employees will be able to monitor the status of the repairments.
13. Repaired gadgets will be delivered to the customers by delivery staff.
14. Working parts of the irreparable gadgets will be sent to recycling.
15. Working parts of the recycled gadget will be assigned to stock.
16. Products will have stock and their addresses.
17. Employees will be able to get info about existence of product/part of the product by searching their ID numbers.
18. Employees will be able to get info about the content of the complaint by searching with complaint ID.
19. Customer Service can search and get info about customer with TCK no.
20. Customer Service will be able to find complaint with customer TCK and product that is complained about.

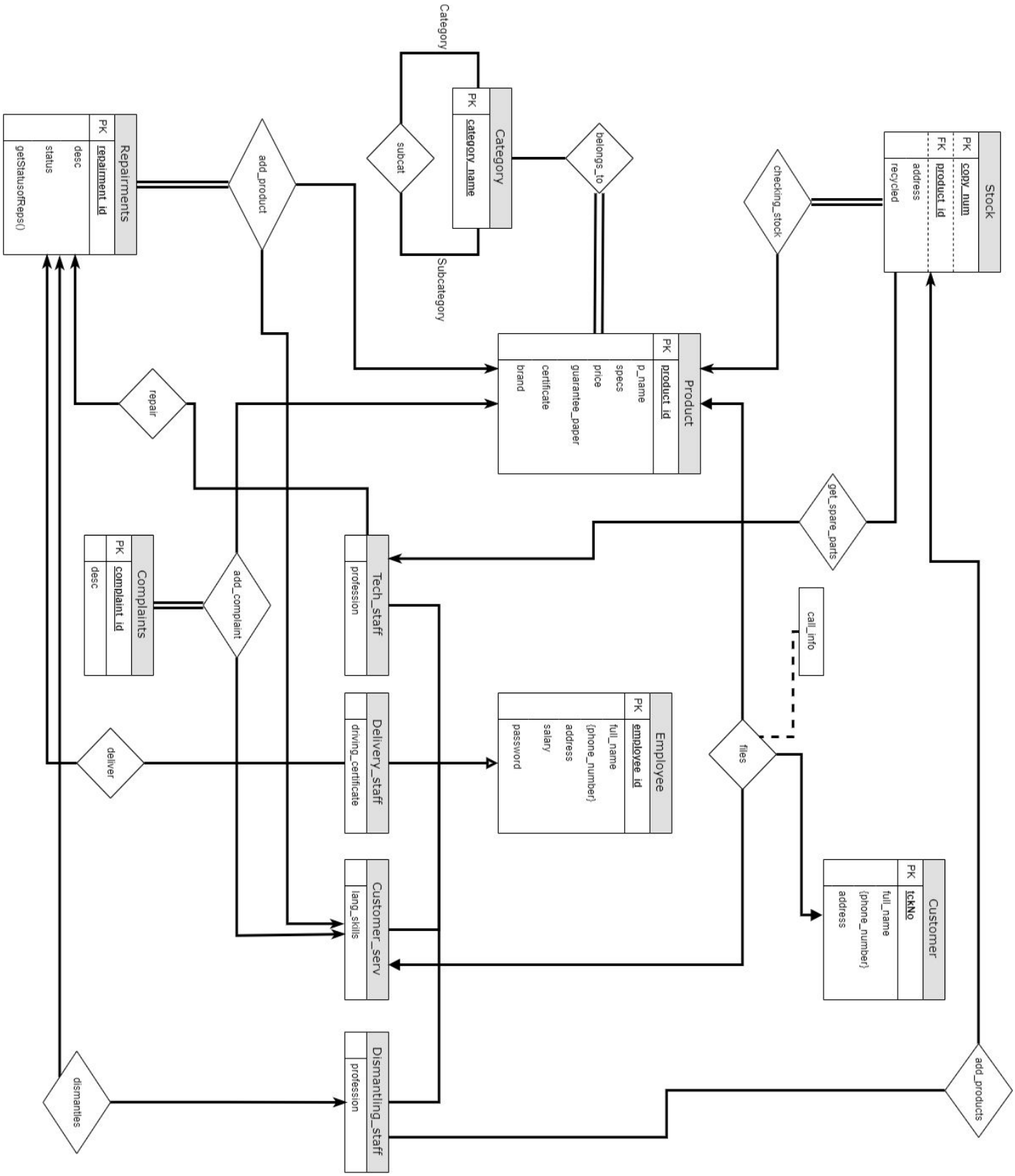
3.2 Non-functional Requirements

1. The user interface should be user friendly for employees.
2. The system should be able to work on multiple platforms.
3. Employees data and data entered by the consumer(i.e. complaints about products) must be protected.
4. The system should be scalable as in the case of growing number of products, complaints and monitoring infos to allow to work without any slowdown.
5. Responses from the system should be fast for user friendliness (<= 3s)
6. The system will be created so that it is maintainable.

3.3 Pseudo Requirements

1. Database will be implemented in MySQL.
2. Frontend will be done using HTML and CSS.
3. Dijkstra will be used as a server.
4. PHP will be used as a backend programming language.

4. Entity-Relation Diagram



5. Limitations

All software has scalability and resource usage limitations, including database servers.
We will try to handle this scalability problem.

- Customers can not see other customers complaints about product if complaint is not acknowledge
- Conversation between customers and employees only can examine when legal issues happen.
- Only customer service and tech staff can see customer complaints about product.
- Only dismantling staff can add parts to stock.
- Only tech staff can get spare parts from the stock.