IT Service Maintenance

04.05.2016

Warren Hammock

CS530

Database Project

ER Diagram

Data Requirements Analysis

The Information Technology Department for Howard County has continuously encountered the problem of inventory maintenance mismanagement. The following is a proposed ER Diagram that will address the needs and adjustments .

The employee table and inventory will be populated by the established database used to house current employees and items of inventory. The new database will adopt the established employee id and inventory id to create consistency when working with and referencing items and employees. The information stored in the pre existing databases will be treated as a base class. The attributes in the new database will be added onto the preexisting attributes, such as a child class. Additional attributes will be able to be given a null value until data can be collected to replace the value.

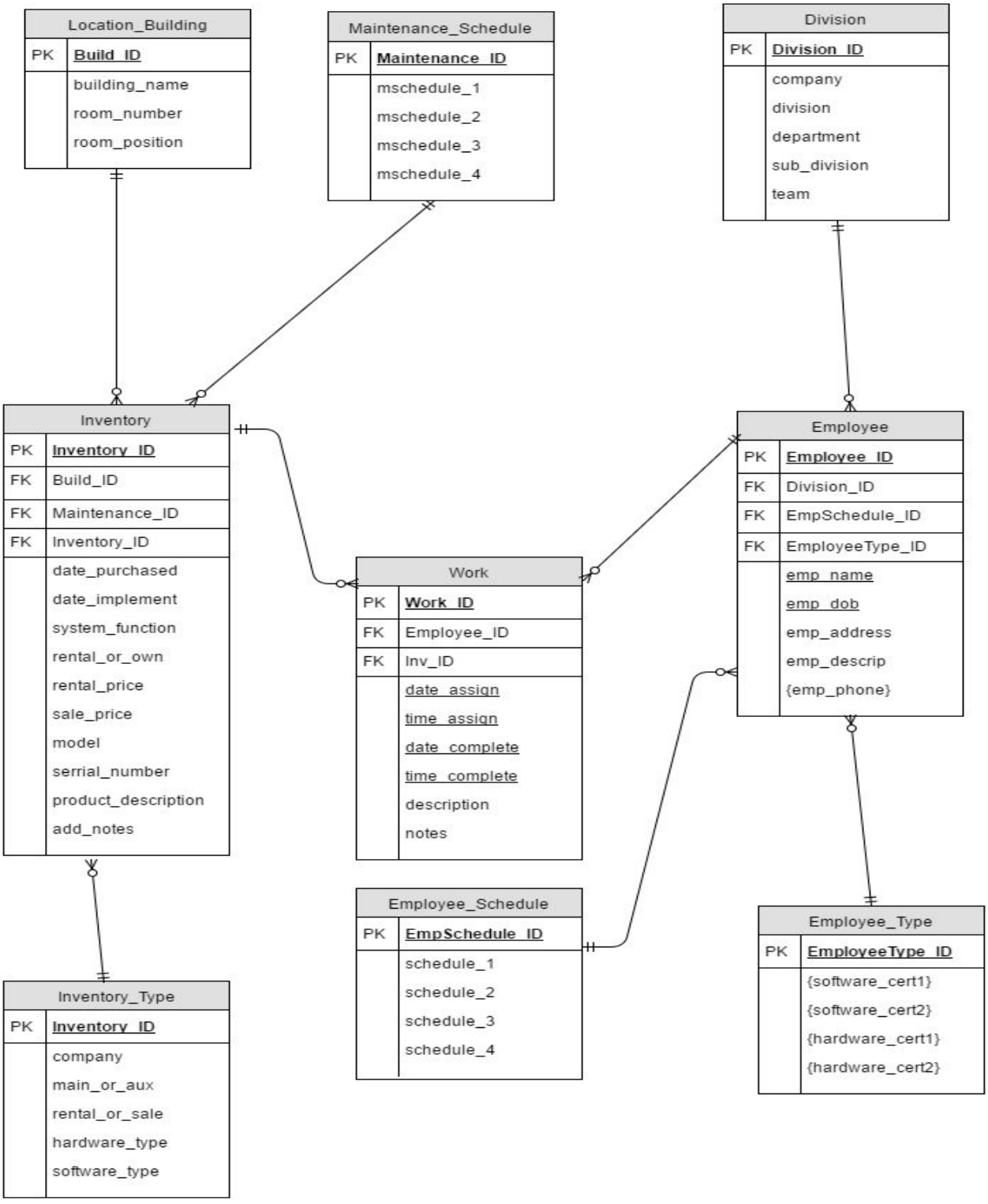
When a job is received from the help desk, the work is given a description, Inventory_ID and Work_ID. The inventory item is analyzed to determine its type and maintenance schedule. Once that information has been obtained, it is they matched with an employee who has the correct schedule and type for the job. Once the correct employee and inventory/description is matched, the Work_ID is updated to include the Employee_ID.

The next step is to document the start time of the job. After the employee is assigned a job the Work_ID populates the date_assign and time_assign attributes. The employee is they dispatched to the job with the pertinent information on the inventory/job. While onsite, the tech will be able to access all information about the product and contact the supplier if needed.

Upon completion of the job, the tech will populate the notes attribute with any information they feel is relevant to the completion of the job and/or any future interactions with the item/job. The date_complete and time_complete will now populate to establish the date and time the tech has submitted the jobs completion.

The implementation of the new database will allow the following allow techs to have a greater individual accountability for jobs. Techs will be able to quickly access their current jobs, finished, and unfinished jobs. Customer support will be able to quickly access the information to answer customers questions pertaining to the progress of the job. Customer service will also be better equipped to send the right tech to handle the right assignment. Management will have an accurate account of work assigned and complete, which will result in a more efficient assessment of future needs.

ER Diagram


Location_Building
PK Build_ID
building_name
room_number
room_position
Maintenance_Schedule
PK Maintenance_ID
mschedule_1
mschedule_2
mschedule_3
mschedule_4
Division
PK Division_ID
company
division
department
sub_division
team
Inventory
PK Inventory_ID
FK Build_ID
FK Maintenance_ID
FK Inventory_ID
date_purchased
date_implement
system_function
rental_or_own
rental_price
sale_price
model
serrial_number
product_description
add_notes
Work
PK Work_ID
FK Employee_ID
FK Inv_ID
date_assign
time_assign
date_complete
time_complete
description
notes
Employee
PK Employee_ID
FK Division_ID
FK EmpSchedule_ID
FK EmployeeType_ID
emp_name
emp_dob
emp_address
emp_descrip
{emp_phone}
Employee_Schedule
PK EmpSchedule_ID
schedule_1
schedule_2
schedule_3
schedule_4
Employee_Type
PK EmployeeType_ID
{software_cert1}
{software_cert2}
{hardware_cert1}
{hardware_cert2}
Inventory_Type
PK Inventory_ID
company
main_or_aux
rental_or_sale
hardware_type
software_type

ER Diagram Assumptions

The following are assumptions during the development of the ER Diagram:

- Inventory_ID, Work_ID, and Employee_ID are unique.
- Employee_ID and Inventory_ID are populated by a table not shown.
- A Work_ID can and must be only linked to one Employee_ID and one Inventory_ID.
- Additional employees working on the same inventory will receive their own unique Work_ID.
- Outside vendors will be treated as employees that of a different company.
- Foreign Keys corresponding to the Inventory and Employee table could be established individual matrixes being give ID's or tables could be further broken down.
- Employees will have different schedule rotations per season.
- Maintenance schedule will be established by the season and type of item.
- Tables attributes are not exhaustive and will be updated.
- Inventory only has one type, one location, and one schedule, but can have several instances of work done to it.
- An employee only has one type, one schedule, and one division he/she works for, but an employee could work on several pieces of inventory.
- Subdivision, team, software_cert2, and hardware_cert2 are new attributes.
- Hardware_type, software_type, system_function, rental_or_own, rental_price, sale_price, and room_position are new attributes.
- Inventory_Type(company) will have an additional table added to supply the address and contact number for the company.