Coping with changes

Expansion Plan

There is an increasing number of tenants in Queens Accommodation and there are no longer enough rooms to fulfil all the requests. As a result of this Queens would like to add more buildings to their portfolio. They have decided to purchase space in a different area of Belfast where the rent for tenants would be cheaper as this was another concern. At this time there enough technicians and managers to cope with this change, however with there being more buildings queens will need employees to carry out trivial jobs such as cleaning empty apartments or helping new tenants move in. Due to the seasonal nature of these jobs they have decided to offer these as casual contracts to current tenants instead of year-round contracts. They would also like all their employees to be assigned to one area to ensure work can be carried out quickly and efficiently should problems arise.

System Changes

Firstly, there will need to be an area table created that would be connected to Building in the ERD with a one-to-many relationship. This allows prospective tenants to decide between different areas for their stay and they can research the advantages of them. The area table would contain a primary key of AreaID and contain the area name, e.g. “Malone Road” or “City Centre”. Additionally, AreaID will be used as a foreign key in the Building table and another which I’ll discuss later.

In order to allow tenants to be employees there needs to be some changes to the current ERD and the relationships modelled. Employee now needs to have PermanentEmployee and CasualEmployee under it with many-to-many relationships instead of Technician and Manager which will be directly under Permanent Employee with the same relationships to PermanentEmployee as was previously modelled when linked to Employee. In the same way as the Technician and Skills were modelled CasualEmployee will have a many-to-many ‘skilled in’ relationship with a new table called CasualSkills which will have a primary key of SkillID and skill names such as ’cleaning’ or ‘admin’. Due to this many-to-many relationship when it comes to implementing the database a table will need to be created called CasualEmployeeSkills which will have the same principle as the TechnicianSkills table with the primary keys of the participating entity sets - CasualEmployeeID and CasualSkillsID used as foreign keys in this table. I do not see any need for this table to be shown on the new ERD.

There would also be reason to include an EmployeeContract table that has a one to one relationship with Employee. Due to the expansion causing there to be jobs across Belfast this table should include the foreign key AreaID which means an employee is only specific to that area.

The salary attribute would be taken from employee and put in PermanentEmployee and CasualEmployee. The reason it’s not in EmployeeContract is because casual employees essentially have zero-hour contracts and will be paid an hourly rate as opposed to Technicians and Managers who will be paid a fixed salary. Below is a summary of the tables that would need to be created.

* Area (Primary key - AreaID, AreaName)
* EmployeeContract (Primary key - ContractID, type (perm/casual), salary, foreign keys - EmployeeID and AreaID)
* PermanentEmployee (primary key – CasualEmployeeID, foreign keys – EmployeeID)
* CasualEmployee (primary key – CasualEmployeeID, foreign keys – EmployeeID,)
* CasualSkills (Primary key – SkillID, SkillName)
* CasualEmployeeSkills – at creation stage (foreign keys – CasualEmployeeID and SkillID)