AAM: a simplified Asset Management system

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1 task

Acme Asset Management (AAM) maintains a set of Assets belonging to establishments such as care homes, hospitals, catering companies or residential homes for older people. This includes maintenance of electricity, plumbing, heating and various home appliances. Examples of Assets are kitchen appliances such as dishwashers and cookers, boilers, TV sets, microwave, alarms, etc. These Assets belong to the customers (care homes, hospitals,...), but AAM has a contract to look after them (Assets). There are two types of maintenance carried out by AAM, Regular maintenance, such as yearly servicing of a boiler or Reactive maintenance such as fixing a blockage or repairing a broken TV. All Assets which are managed by AAM are registered in the system. At this point, to keep the system small, we only focus on developing a system to allow the Reactive maintenance.

To do a maintenance job, AAM relies on tradesmen which AAM refers to as the Resources. As a result, some of the Resources are Internal (i.e. employed by the company) and some are External (i.e. contracted as needed).

In this worksheet, you will be expected to write and alter program code designed to address the requirements of this application. The specific tasks are listed below.

2 Purpose

This document provides the specification for the provided example code. It provides an overview of the intended system and a description of the functions that are implemented in the example code. Use this document to help your understanding of the provided code.

3 Background Information

3.1 Definitions

The following definitions apply to the interpretation of this scenario:

1. Customer: the person who interacts with AAM - the employee of the company who deals with reporting of the problems, a point of contact. For example, in a care home, the customer can be one of the managers

2. Asset: An appliance or device belonging to a customer for which a maintenance agreement with AAM exists.

3. Resource: A tradesman such as a plumber or electrician who will perform the repair work on behalf of AAM.

4. Work: A maintenance task that has been initiated as the result of a Customer call and assigned to a Resource to carry out the work.

5. Work Detail: Details of the work completed by the Resource. This may relate to the complete Work or to part of the Work.
3.2 Typical Scenario

The following describes a typical scenario that is to be recorded by the system:

1. An Asset at a Customer location develops a fault (i.e. a boiler stops working).
2. The Customer telephones AAM to report the problem and to ask for maintenance to be completed.
3. AAM raises a Work, entering the date of the call as the start date for the Work.
4. The secretary at AAM, uses the system to identify the Asset that the Work relates to, and the appropriate Resources who will be responsible for ensuring the Work is completed. The Work is allocated to the Resources. A maintenance task (Work) may require one or more Resources to complete the Work.
5. The Customer can monitor the progress of the Work by logging into the system through a browser.
6. Each allocated Resource can access the system to add details of the Work (Work Detail) that needs to be completed. They may add one or more WorkDetail entries depending on the complexity of the Work.
7. When a Resource completes their allocated work, they will access the system and enter a completion date for their allocated work.
8. When all allocated work is completed, the Work will have its completion date set thus signalling the completion of the Work.

Notes The system in its current form does not keep track of the time taken and costs involved in completing a Work. As a result, it does not implement any billing related functionality. These are extensions that will be required in a later release of the system.

3.3 Database Schema