U3O2: Dogs All Groomed Sweetly

****Background**

Dogs All Groomed Sweetly (DAGS) is a pet grooming salon and mobile service run by Harry McLary (formerly of Donaldson’s Dairy) based in the leafy green suburbs of Ivanhoe. After spending several years grooming in in Paris under the tutelage of Tommy Holedigger the famous grooming artist, Harry finally achieved his Canine Coiffures Certificate and returned to Melbourne with hopes as grand as his silver & diamanté clippers.

Instead of the current practice of groomers (and just about anybody else) making changes to a grooming spreadsheet, Harry would like to see a number of mobile devices being used that will allow the groomers to access and change the grooming session lists with ease.

Another happy customer

**The Proposed Software Solution**

After analysing the practices that were in place to allocate dogs to grooming sessions, a SRS was written containing the following requirements:

**General description**

The software solution will be used to allocate dogs to grooming sessions for the current day. Harry will be the only one able to add new dogs and will do so via a separate module that manages dogs and their contact details. Otherwise, any employee of *DAGS* will be able to access the software and perform the task of allocating or moving dogs.

On startup, the software solution will read a text file (or files) that contain the details of the grooming sessions (there can be a maximum of 10). This includes the name of the groomer taking the session and the time in the day of the session. The software solution also reads in a list of client’s names for these sessions. You can determine the format of the text file(s) and the way in which the program interacts with it (or them). On exiting the program, all of the information (including grooming session information and client’s names) needs to be written back to text files.

Anyone accessing the program should be able to move dogs from one session to another or remove a student from a session (placing them in a ‘bad parent’ group). It should not be possible to add or remove dogs entirely.

**Functional (F) and non-functional (NF) requirements**

* Read text files with grooming session information and student names on startup (F)
* Produce and save text files on program close (F)
* Display all of the clients names in a particular session (F)
* All required information is displayed in a logical fashion (NF)
* Moving and removing dogs should be able to be performed easily (NF)
* No session should be able to contain more than 10 dogs (NF)

**Constraints**

* The software solution will be running on a mobile computing device yet to be determined. There are a number of candidates – and all are tablets or notebooks capable of running at least a screen size of 1024 x 768. For this reason, the interface should be confined to a screen size of 1024 x 768 (landscape) and should be designed with touch interaction in mind.
* All input will be via touch (as this is a prototype, single mouse clicks will simulate touches of the display).
* Storage space on the device will be limited, so the software solution should take this into account.

**Scope**

* Will need to cater for a maximum of 10 grooming sessions, however, it is forseable that in the future there may be more offered during the day (the maximum of 10 is a based on the number of clippings any groomer can do in one day – see chart below for optimal work hours).

|  |  |
| --- | --- |
| **Job Number** | **Time Start** |
| 1 | 9:00:00 AM |
| 2 | 9:45:00 AM |
| 3 | 10:30:00 AM |
| Morning Tea | 10:45:00 AM |
| 4 | 11:30:00 AM |
| 5 | 12:15:00 PM |
| Lunch | 1:00:00 PM |
| 7 | 1:45:00 PM |
| 8 | 2:30:00 PM |
| Afternoon Tea | 2:45:00 PM |
| 9 | 3:30:00 PM |
| 10 | 4:15:00 PM |
| Knock Off | 5:00:00 PM |

**Some additional notes specific to the software solution**

* The data that you place in the text file can be considered to already be validated. Validation is not a part of this task.
* The user interface design is also not a part of this task – the focus is on function at this stage.
* For testing purposes, it is only necessary to include a sampling of dogs at *DAGS*, although you should be careful that the data you do include covers the situations / combinations necessary to fully test the functioning of your program.

## The staff at DAGS are:

* Harry McLary : Owner and Primary Grooming Artist
* Lassie Collie : Receptionist
* Clifford Rose (Big Red to his friends) : Senior Clipper
* Frank Benji : Mobile Clipping Artist
* Clarice Precious : Mobile Grooming Artist (formerly specialist lamb groomer)
* Santos L. Helper : Trainee Grooming Artist

*Dog names taken at random from* [*http://www.dognameswoof.com/*](http://www.dognameswoof.com/)

**The Task (60 marks)**

Represent a software design and apply a range of functions and techniques using a programming language to develop a prototype solution to meet a specific need.

**Complete the following:**

**Identify** **evaluation criteria** appropriate to the solution requirements.

**Create** a **data dictionary** to describe the format of the text files that will be read in and produced by the software solution.

**Construct** a **pseudo-code algorithm** to represent the operation of the software solution.

**Construct** a **prototype software solution** that meets the specifications in the SRS, ensuring that the prototype solution:

* contains efficient and effective programming techniques.
* contains efficient and effective use of data types and data structures.
* contains efficient use of file input and output techniques.
* contains clear and appropriate internal documentation.
* produces the correct output.
* displays the required information.

**Create** a **testing table** that contains a number of tests, the expected outcome of each test and the actual results of the tests.