**Dominique’s Driving School** is a small local company that offers car, truck and motorcycle driving classes to students. The company plans to expand and offer classes for large trucks next year. The company currently uses spreadsheets and contact lists to document much of its business data and transactions.

About six weeks before the start of each semester, Dominique compiles a ‘draft’ master class list that displays the classes that could be offered to students during the upcoming semester if he can find instructors to teach them. He uses ‘instructor courses taught’ information from the Instructor file, and class information from the Class datastore to develop this ‘draft’ master list. Once he has ‘fleshed out’ the ‘draft’ master class list, he emails each instructor on the Instructor file a copy, asking them if they would be interested in teaching any of the courses on the ‘draft’ class list proposed for the upcoming semester. Instructors have one week to respond. When he receives their response, Dominique updates the draft master Class list for the current semester.

Dominique only uses instructors who are under contract to the company. Each contract lasts for the duration of the semester. Each instructor who accepts will need to sign a new contract for each course taught for the upcoming semester. For each course the instructor agrees to teach this semester, Dominique sends a contract to be signed by the instructor who must return the signed contract to Dominique before the semester commences.

The **master class list** includes a description of each class, including the knowledge level of the student (i.e. beginner, intermediate, etc.), vehicle type to be used (E.g. car, motorcycle, truck, etc.), instructor name, course hours, pre-requisites, start time and start date of course, the day of week course will be held, and student cost for the course.

Information maintained for all driving **instructors** includes, but is not limited to: full name, mailing address, phone numbers – home, bus, res; Driver’s License number, email address, credentials, years of experience, courses taught.

Instructor **contract** information includes, but is not limited to: contract number, class id, contract date, course name and number, instructor availability [days of week and hours of day], and instructor contract fee.

Dominique emails the updated master Class list to all students in the Student database and to each driving instructor in the Instructor database who is scheduled to teach this coming semester. He also sends the Class list to community newspapers and updates the company’s website.

Currently, students either phone or come to the office to register for a scheduled driving class. A student must be in the database to register for any classes. Therefore, the clerk determines if the student is an existing student on the database. IF a new student, the student is added to the database before beginning the registration process. For existing students, the clerk updates student information, if necessary, before beginning the registration process.

When the registration process is completed, the clerk sends an electronic confirmation of registration to the student, prints an invoice for the student and invokes the system to send an electronic copy to Accounting. The student will receive one invoice for each course for which they register. The clerk directs the student to make payment directly to the Accounting department.

Some students pay their fees at the time of registration, by cheque, cash or credit card. However, most students pay their fees on the first day of classes. After the first day of class, students cannot attend class or reserve a vehicle until payment for the class has been received in full by Accounting.

Each week, until the semester commences, Dominique accesses the Master Class File to determine if there are enough student numbers in each class to run the class. Dominique cancels those classes with low attendance, notifies instructors and students of the cancellations, and informs these students that a refund, if applicable, will be sent in the mail. Dominique notifies Accounting about the cancelled classes and any refunds outstanding. Finally, he posts the updated Class list to the website and voids the instructor contract for that specific course.

Classes are held weekly. Some students register for more than one class in a semester if their schedule permits. For example, a student may take a Beginner Motorcycle on Mondays and Intermediate Car on Thursdays. If fewer than 6 students register for a class, the class is cancelled. Any fees paid by the students whose classes are cancelled are refunded by mail. The maximum class size is 14.

The company maintains a small inventory of vehicles that students may reserve if need be. Many students have their own vehicle so the vehicle inventory is relatively small. All vehicles are reserved on a ‘first-come’ basis for the semester and remain reserved for that student for that day and time slot for the entire semester. Students must pay for the course in full before being eligible to reserve a vehicle.

To reserve a vehicle, the student must come to the office. The clerk ensures the student has paid in full before proceeding further. If there is an outstanding balance, the clerk directs the student to the Accounting department to pay in full before a vehicle can be registered for this student for this course. If there is no outstanding balance for the class, the vehicle reservation process begins. Each vehicle reservation is assigned a unique vehicle reservation number. The information included in the **vehicle** file includes, but is not limited to, the following fields: application date, student name, class name, vehicle type, Dominique’s Vehicle ID [DOM\_V\_ID], VIN, course start and end date, time of day, damage deposit amount, and last day of course.

A damage deposit is required for each vehicle reserved. When the reservation process is completed, the clerk forwards damage deposit information to Accounting; hands the student a completed vehicle reservation form that the student uses to begin the damage deposit process in the Accounting department. At this point the damage deposit status is given a value of ‘O’ for ‘outstanding’ until the student pays the damage deposit. A damage deposit must be paid in full before the student can use a vehicle. A vehicle list by course ID, section and semester, and student id is emailed to the instructor to inform him/her about which reserved vehicles are to be used for his/her particular course.

**LOGO suggestions required**

**INTERFACE 1: Reservation Screen/Report specs**

**SORT 1:** Want it sorted by instructor, by course, by day sequence, by hour sequence. Students should be in alpha sequence. Need to be able to scroll and need to be able to print by instructor, one page per course if so desired.

**SORT 2:** Sort by vehicle then course then students in alpha sequence.

Vehicles: currently 30 vehicles – 20 cars; 5 motorcycles; 5 trucks

Instructors per semester: 30

**INTERFACE 2: Class List by instructor – interview instructor**

**Factors considered in Prototype marks:**

**1. Knowledge and application of the guidelines outlined in the following:**

* **GUI Interface Guidelines followed**
* **Reports/screens explained**
  + **Type of report**
  + **Column headings and alignment and spacing**
  + **User friendly flow**
* **User Interface Design**
  + **Logo design options for client**
  + **Color theory applied**
  + **Methods of highlighting**
  + **Data entry**
  + **Prompting cues**
  + **Error messages**
* **Screen Layout – Whitten**
  + **Common GUI controls**
* **Screen Layout Theory applied**
  + **Organization of screen elements used** 
    - **Balance**
    - **Symmetry**
    - **Regularity**
    - **Sequential**
    - **Economy**
    - **Unity**
    - **Proportion**
    - **Simplicity**
    - **Groupings**

**2. Purpose of: Screen, Report, GUI**

**3. Frequency of use: who uses; how often**

**4. Narrative about design: rationality for this specific design**

**5. Target audience; attributes of audience**

**Required:**

**[1] Create a Use Case Diagram for the existing system [10]**

**[2] Create the necessary number of Use Case Narratives based upon your use case diagram [45]**

**[3] Create a Data Dictionary based upon the information provided. Hint: doing a simple ERD with relationships may help with the needed fields in the files; also could provide valuable insight into finding relevant business rules. [40]**

**[4] Identify at least 5 Business Rules you have uncovered that may impact the design of your database [10]**

**[5] Create a Prototype of the Class List that would be displayed on the website and document how it would work and explain why you designed it the way you did [30]**

The clerk searches a course via the combo-dropdown box. It can be typed in as a partial search or selected through dropdown. Once the course is in the search bar, they hit select. The search results table is populated, displaying all the classes teaching the searched course. The results can be sorted by clicking the arrows by the column titles. The clerk can select a class in the search results table to have the class displayed on the weekly class schedule calendar. This class selection auto-populates the class-list information under the calendar. The clerk can sort and/or view students present within the class. Students can be sorted by date, time, name, or vehicle via the arrows beside each column title. This class-list can be printed by clicking the ‘print’ button.

**[6] Create a Prototype of the Vehicle Reservation Screen that would be displayed on the website and document how it would work and explain why you designed it the way you did [30]**

**Note: The report format must meet specifications. The report must be written in a sans-serif font [see instructor for details]. Listed are some of the more common formatting deficiencies. Deductions are not restricted to the following: use of a serif font [-30]; no header and footer [-15]; no page numbers – bottom right hand side [-5]; no Table of Contents page [-10]; spelling & grammar errors [can be up to 25% of the value of the lab]; no cover page – subject title, course number and name, instructor name, date of submission, team name and member names [-10]; no report headings [-10]; double-sided pages [-20]; improper margins – 1” all four sides [-10].**

**Mark Sheet – lab 1**

**team name**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Team Members:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| --- | --- | --- | --- | --- |
| **Specification** | **Possible**  **Penalty** | **Comments** | **Penalty**  **Earned** |  |
|  |  |  |  |  |
| **Sans Serif font** | **30** |  |  |  |
| **Header/footer** | **15** |  |  |  |
| **No T of C** | **10** |  |  |  |
| **No page #s** | **5** |  |  |  |
| **Spelling/grammar** | **38** |  |  |  |
| **No cover page** | **10** |  |  |  |
| **Double sided** | **20** |  |  |  |
| **No headings** | **10** |  |  |  |
| **Report margins** | **10** |  |  |  |
| **paragraphing** | **10** |  |  |  |
|  |  |  |  |  |
| **Totals** | **158** |  |  |  |

**Summary – Mark Sheet:**

|  |  |  |
| --- | --- | --- |
| **Section** | **Possible**  **Mark** | **Earned**  **Mark** |
| **Use Case Diagram** | **10** |  |
| **Use Case Narratives** | **45** |  |
| **Data Dictionary** | **40** |  |
| **Business rules** | **10** |  |
| **Class List Prototype** | **30** |  |
| **Vehicle Reservation Screen & Report** | **30** |  |
| **Formatting Deductions** |  |  |
|  |  |  |
|  | **165** |  |