1. **Week 11 Individual Assignment**

*[Individual Hand-In] Relational database*

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Some of the more common database systems used today are those utilising the relational database model (e.g., MySQL, MS SQL Server, Oracle and MS Access). One of the core reasons is because of how these systems store data, which allows one to quickly extract, compare or even add information. Due to this efficiency, relational database popularity has only continued to grow, meaning that many software engineering roles require experience in databases like MySQL.

In light of the growing usage of relational databases, this Hand-In Assignment will challenge you with designing your own. In this Assignment, you will design a relational database containing information about Western classical music composers and their compositions.

**To prepare for this Assignment:**

* Review your Weekly Learning Resources with a focus on relational databases. Pay particular attention to Figure 9.4 in the required reading for this Week.
* Research at least six Western classical music composers and their compositions. Identify the following:
  + Composer name, nationality, birth date and death date.
  + Composition name, type (genre), year of publication and opus.
  + Note that a composition can have multiple composers.
* Reflect on your database design and consider how to avoid redundancies similar to Figure 9.4 in your required readings for this Week.

**To complete this Assignment:**  
Submit a database design in which you address the following:

* Design a relational database containing the following information about Western classical music:
  + Composers
    - identificationNumber
    - name
    - nationality
    - date of birth
    - date of death
  + Compositions
    - identificationNumber
    - name
    - type
    - year of publication
    - opus
  + Avoid any redundancies in your database design.

Your database design should consist of at least 6 composers and at least 3 of their compositions.

By Wednesday, **combine the documents from all the questions that your instructor selected for this week into one single file** and upload using the Turnitin submission link.

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| To submit your Individual Assignment, click the link below for Week 11 Individual Assignment. |

1. **Week 11 Individual Assignment**

*[Individual Hand-In] User roles in a database system*

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One of the first steps in developing any kind of software is identifying who your users are. This then allows you to incorporate elements that are important to them, and grants you insights into how your target audience would use, or attempt to use, your program. In the case of database systems, however, the gamete of users varies dramatically.

Some of the users of a database system could be any of the following: An end-user, a programmer of application software, a database administrator or a designer of database management system. Clearly, each of these users have very different concerns when they access a database, and one of the key skills necessary to both understanding and designing databases is to understand these roles. In this Assignment, you will identify what types of users are concerned with specific scenarios noted in the Assignment instructions.

**To prepare for this Assignment:**

* Review your Weekly Learning Resources with a focus on database characteristics and access conditions**.**
* Analyse the concerns of the following database system users: end-user, programmer of application software, database administrator, and designer of database management system software**.**
* Analyse the characteristics of a database and infer how each user type would utilise them**.**
* Reflect on the following questions, and which user would be most concerned with each:
  + How should data be stored on a disk to maximise efficiency?
  + Is there a vacancy on flight 243?
  + Could a relation be stored as a sequential file?
  + How many times should a user be allowed to mistype a password before the conversation is terminated?
  + How can the PROJECT operation (of the relational model) be implemented?

**To complete this Assignment:**

Submit a 2-3 paragraph paper in which you address the following:

* Identify the user (end-user, programmer of application software, database administrator, and designer of database management system software) who would be most concerned with the following scenarios:
  + How data could be most efficiently stored on a disk.
  + If there is a vacancy on Flight 243.
  + How a relation could be stored as a sequential file.
  + How many times a user should be allowed to mistype a password before a conversation is terminated.
  + How the PROJECT operation (of the relational model) can be implemented.
* Explain why each identified user is most applicable to each scenario and how you came to your conclusions.
* Fully state and justify any choices, assumptions or claims that you make using the suggested Learning Resources for this Week and/or your own research.

Your document should have 2-3 paragraphs (not including the list of works cited), but it is the quality of the answer that matters, not the number of words. Cite and reference all sources use the Harvard Liverpool Referencing System.

By Wednesday, **combine the documents from all the questions that your instructor selected for this week into one single file** and upload using the Turnitin submission link.

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| To submit your Individual Assignment, click the link below for Week 11 Individual Assignment. |