



Examination Answer Books

12 Pages

Instructions to Candidates

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.

Complete, fold and seal
(see note 2 below)

SURNAME: Glanville

FORENAME(S): Jane, Joseph

Office Use	List the numbers of the questions you have attempted
1	22
2	11
3	11
Office Use	Office Use
44	

1	Student Number	11298
2	Title of Examination Paper	DBMS
3	Module Code	ACCA5014
4	Date and Time of Examination	ACCA5014 09/05/2019
5	Examination Venue	Pembroke Shire College
6	Seat Number	13
7	Number of Answer Books handed in	

Q1(a)

1) CREATE TABLE TutorBooking

BookingRef CHAR(5) NOT NULL,
 BookingDate INT NOT NULL,
 TutorNo INT NOT NULL,
 StudentNo INT NOT NULL,
 SubjectId CHAR(5) NOT NULL,
 SubjectLevel VARCHAR(6) NOT NULL,
 HourlyRate DECIMAL(2,2) NOT NULL,

);

2)

ALTER TABLE TutorBooking

ADD CONSTRAINT [PK-BookingRef] PRIMARY KEY (BookingRef);

3)

ALTER TABLE TutorBooking

ADD CONSTRAINT [FK-TutorBooking-Tutor]

FOREIGN KEY (TutorNo) REFERENCES Tutor (TutorNo);

ADD CONSTRAINT [FK-TutorBooking-Student]

FOREIGN KEY (StudentNo) REFERENCES Student (StudentNo);

ADD CONSTRAINT [FK-TutorBooking-Subject]

FOREIGN KEY (SubjectId) REFERENCES Subject (SubjectId);

4)

CREATE TABLE TutorSubject

TutorNo INT NOT NULL,

SubjectId CHAR(5) NOT NULL,

ksLevel VARCHAR(6),

AlLevel VARCHAR(16),

HeLevel VARCHAR(16),

MinHourlyRate DECIMAL(2,2) NOT NULL,

MaxHourlyRate DECIMAL(2,2) NOT NULL,

CONSTRAINT [FK-TutorSubject FOREIGN KEY (TutorNo)

REFERENCES Tutor (TutorNo),

CONSTRAINT [FK-Subject-TutorSubject FOREIGN KEY (SubjectId)

REFERENCES Subject (SubjectId),

CONSTRAINT [PK-TutorSubject] PRIMARY KEY (TutorNo, SubjectId);

);

7

No check

3

1

7

(Carried on on other side)

2) It is important to check analyse Transactions before implementing them as if chosen wrong it can end up slowing down the performance of the database. Create, update and delete ~~method~~ methods are indexes that will slow down the Performance the most.

b) B-tree Index is a structure that is implemented to speed up the processing on Rows of data based on one or more columns.

Conceptual - is to do with the way the database is ~~viewed~~ viewed by the computer and helps with the storage of data.

Internal - is the part of the database that handles the structure of the database and the relations between Tables.

a) External - is in charge of creating and distributing views to all users.

3) Min(HourlyRate) Minimum Rate, Max(HourlyRate) Max Rate, Avg(HourlyRate) Average Rate, FROM -

2) ALTER TABLE Tutor
UPDATE Status = 'Pending DBS Check'
WHERE (DBSExpiryDate < GETDATE());

WHERE (DBSExpiryDate = '06/2019')
ORDER BY 'DBSExpiryDate';

b) SELECT (TutorialId, Title, FirstName, Surname, Email, PhoneNo, DBSExpiryDate) FROM Tutor

We use a "Transaction/Relations Cross Reference Matrix" and a "Transaction usage map" to help decide what indexes are needed and which are not.

3) In my opinion the appropriate clustering index for this table is on "OBSExpiry" ~~as this would be a ~~Bad~~ field~~ be mainly used for a read statement therefore is more likely to enhance performance. as I would imagine it would be queried regularly this will speed up the process.

b) CREATE INDEX Expiry Clusred on Tutor (DBSEXPY):

& Tutors

4) In my opinion the Secondary index could be beneficial to have on the "City" column as it may be frequently queried because the student may want to know what tutor is closest to him and again it is a field that wouldn't be updated regularly

ALTER TABLE

5)

11

2

1

b) i) Authentication is the process or act of confirming that the user attempting to access the database is authorised to do so. Thus ensuring that only trusted employees are able to access and/or make changes

(23) a) there are many examples of threats on a database whether it's accidental or malicious.

- Power outages can affect the database if in the middle of inserting data which can cause data corruption
- Another is someone changing Read only data when it shouldn't be allowed to

ii) users of a database are able to be given user privileges as well as access controls. these privileges and access controls can also be revoked if needed.

this is to ensure that the database is only affected in authorised ways. and ensuring database integrity.

iii) Views are used to hide certain pieces of data whether it's due to Private Information or irrelevant information. ~~it can be~~ this is mainly used for security as it will restrict the user from being able to interfere with certain data or have access to

c) Create View ActiveInfo.Subjects AS ✓
 Select (Title, first Name, Surname, Email, City) ✓
~~from Information (Database)~~
~~from Information (Strings "Active")~~
 from Tutor Inner Join Id

11

2

2

2

[illegible]