



DEGREE: Computer Science and Digitisation

Module: Database Design and Implementation

Assignment Title: Database Design for Healthcare system

Assignment Type: Individual report Word Limit: 2000 words (+/- 200)

Weighting: 50%

Issue Date: 12/07/2024

Submission Date: 02/09/2024

Feedback Date: 26/09/2024

Plagiarism:

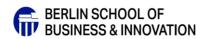
When submitting work for assessment, students should be aware of the InterActive/Canvas guidance and regulations in concerning plagiarism. All submissions should be your own, original work. Please note that you must not submit the same assignment for two different modules within your course.

You must submit an electronic copy of your work. Your submission will be electronically checked.

| Learner declaration | | | | | | |
|--|-------|--|--|--|--|--|
| I certify that the work submitted for this assignment is my own and research sources are fully acknowledged. | | | | | | |
| Student signature: | Date: | | | | | |

Harvard Referencing:

The Harvard Referencing System must be used. The Wikipedia, UKEssays.com or similar websites must **not** be used or referenced in your work.





Introduction

Learning Outcomes:

LO1. Learn the concepts of database and database management systems along with the concepts and approaches of database design, administration and management

LO2. Learn the principals and science behind querying the data from a database management system to use for business analytics and implement the queries to retrieve the data from MySQL

LO3. Write advanced SQL queries to manipulate, wrangle and derive insights from large database systems

Assessment Criteria: Weighting 50%

2000 words

Tasks:

Objective:

To design, implement, and manage a healthcare database using MySQL, enabling efficient data storage, retrieval, and analysis. This practical assignment will help you gain hands-on experience in creating a relational database, inserting data, and writing advanced MySQL queries for business analytics within a healthcare context.

Task 1: Create a Database and Tables

- Create a database named **HealthcareDB** in MySQL.
- Design and create the following tables with primary keys, foreign keys, and appropriate data types.
- Patients: PatientID, FirstName, LastName, DateOfBirth, ContactInfo
- Doctors: DoctorID, FirstName, LastName, Specialty, ContactInfo
- Appointments: AppointmentID, PatientID FK, DoctorID FK, AppointmentDate
- MedicalRecords: RecordID, PatientID FK, RecordDate, Diagnosis, Treatment
- Medications: MedicationID, MedicationName, Dosage
- Prescriptions: PrescriptionID, PatientID Fk, MedicationID Fk, PrescriptionDate

Task 2: Insert Sample Data





- Insert sample data into these tables. Ensure there are at least 10 records per table, with realistic data entries.
- Write a query to list all appointments for the upcoming week.
- Write a query to find all patients prescribed a specific medication (choose one from your sample data).
- Write a query to list all doctors along with their specialties.

Task 3: Business Analytics Queries

- Write a guery to calculate the average number of appointments per doctor.
- Write a query to determine the top 3 most commonly prescribed medications.
- Write a query to generate a monthly report of the number of new patients added to the system over the past year.

Submission Guidelines:

- Include SQL code for your queries and explain the purpose of each query within a banking context.
- Ensure that your report is clear, well-organized, and visually appealing.
- Prepare a document using the BSBI assignment template available in Canvas.
- Use Harvard referencing style for your bibliography.
- Refer to the Essay-Guide available in Canvas for further instructions.
- Submit your assignment electronically by the specified deadline.



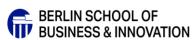


GUIDANCE ON ASSESSMENT

All materials must be properly referenced under Harvard conventions. The length required is 2000 with tasks equally weighted. The writing style should be formal academic / report writing style with in-text referencing to support your comments and observations. Originality, quality of argument and good structure are required. The report should demonstrate sound understanding and ability to apply knowledge and theory of Database Design and Implementation. Additional marks being awarded for juxtaposition and insight of issues.

Grading Criteria

| | Generic Criteria | 90 - 100 | 80 - 89 | 70 - 79 | 60 - 69 | 50 - 59 | 40 - 49 | 30 - 39 | 0 - 29 |
|------|--|--|---|--|--|--|--|---|--|
| | Janaile Gilleria | JU 100 | 00 05 | 70 75 | 00 03 | 30 33 | 10 15 | 30 37 | U 23 |
| | Knowledge of contexts, concepts, technologies and processes The extent to which knowledge is demonstrated: | Outstanding breadth of knowledge of fundamental contextual and theoretical issues and critical concepts and their relationship to | Extensive knowledge of fundamental contextual and theoretical issues and critical concepts and a widening appreciation of historical | Significant knowledge of fundamental contextual and theoretical issues and critical concepts and a widening appreciation of historical | Confident familiarity with fundamental contextual and theoretical issues and critical concepts | Familiar with fundamental contextual and theoretical issues and critical concepts | Adequate knowledge of fundamental contextual and theoretical issues and critical concepts | Limited knowledge of fundamental contextual and theoretical issues and critical concepts | Little or no knowledge of fundamental contextual and theoretical issues or critical concepts |
| | relevant contextual or theoretical issues are identified, defined and described | historical and contemporary practices | and contemporary practices | and contemporary practices Significant knowledge of | | | | | |
| | historical or contemporary practices are identified, defined and described | Extensive knowledge of relevant and specialist technologies and | In depth and broadening knowledge of appropriate technologies and | appropriate technologies and processes | Thorough knowledge of appropriate | Sound knowledge of appropriate technologies and | Adequate knowledge of appropriate technologies and | Limited knowledge of appropriate technologies and | Little or no knowledge of appropriate technologies or |
| 4 | appropriate technologies, methods and processes are identified, defined and described | processes | processes | | technologies and processes | processes | processes | processes | processes |
| evel | Understanding through application of knowledge | Relevant knowledge is explored and | Deep level of comprehension and | Deep level of comprehension of | Strong comprehension of relevant knowledge | Sound comprehension of relevant knowledge | Surface-level comprehension of | Incomplete comprehension of | Little or no comprehension of |
| | The degree to which research methods are demonstrated: | interpreted when proposing solutions to projects and problems | exploration of relevant knowledge in seeking solutions to projects or | relevant knowledge in seeking solutions to projects or problems | in seeking solutions to projects or problems | in seeking solutions to projects or problems | relevant knowledge in seeking solutions to projects or problems | relevant knowledge in seeking solutions to projects or problems | relevant knowledge in seeking solutions to projects or problems |
| | relevant knowledge and information is compared, | which demonstrate evidence of | problems | projects or problems | Sound ability to apply | | projects or problems | projects or problems | projects or problems |
| | contrasted, manipulated, translated and interpreted | independent thought | Outstanding ability to analyse and synthesise | Strong ability to apply and analyse knowledge | and analyse knowledge to produce creative | Sound ability to apply knowledge to produce | Competent application of knowledge to the | Limited ability to apply knowledge to produce | Little or no ability to apply relevant |
| | knowledge and information is selected, analysed, synthesized and evaluated in order to | Outstanding ability to analyse and synthesise knowledge to produce | knowledge in order to produce creative practice in standard | to produce creative practice in standard situations, with some | practice in standard situations | creative practice in standard situations | production of creative practice in standard situations | creative practice in standard situations | knowledge to produce creative practice in standard situations |
| | generate creative ideas, practices, solutions, arguments or hypotheses | own creative practice in standard situations and to evaluate results | situations and to evaluate the results | evaluation of the results | | | Stations | | Standard Stadations |
| | Application of technical and professional skills | Accomplished and fluent application of | Relevant, accomplished and fluent application of | Relevant and accomplished | Strong application of basic practical and | Sound application of basic practical and | Competent application of practical and | Rudimentary application of basic practical and | Scant application of basic practical and |
| | The degree to which: | appropriate practical and technical skills | basic practical and technical skills | application of basic | technical skills | technical skills | technical skills | technical skills | technical skills |





| Creative Arts | | | | | | | | | | |
|---|-------------------------|-------------------------|--------------------------------|------------------------|-----------------------|-------------------------|------------------------|--------------------------|--|--|
| appropriate materials and media are selected, tested and | | | practical and technical skills | | | | | | | |
| utilised to realise and present | Outstanding application | Outstanding application | | Strong application of | Sound application of | Competent application | Limited application of | Ineffective application | | |
| ideas and solutions | of appropriate | of fundamental | Highly effective | fundamental | fundamental | of fundamental | fundamental | of fundamental | | |
| appropriate technologies, | transferable and | transferable and | application of | transferable and | transferable and | transferable and | transferable and | transferable and | | |
| methods and processes are | professional skills | professional skills | fundamental | professional skills | professional skills | professional skills | professional skills | professional skills | | |
| demonstrated | | | transferable and | | | | | | | |
| | | | professional skills | | | Adequate evidence of | | | | |
| transferable, professional skills | Significant ability to | Substantial ability to | | Evidence of developing | Evidence of beginning | beginning to develop as | Limited evidence of | Little or no evidence of | | |
| are effectively demonstrated | learn independently and | work independently and | Strong ability to work | well as an independent | to develop as an | an independent learner | ability to learn | ability to learn | | |
| self management and | critically evaluate own | use feedback to reflect | independently and use | learner | independent learner | | independently | independently | | |
| independent learning are | progress using a wide | critically on own | feedback to plan future | | | | | | | |
| demonstrated | range of feedback | progress | tasks effectively | | | | | | | |
| | sources | | | | | | | | | |