1st Sit Coursework Question Paper **Year Long 2025/2026**

Module Code:	**CC6012NT**
Module Title:	**Data and Web Development**
Module Leader:	**Mr. Binaya Koirala / Ms. Pratibha Gurung**

Coursework Type:	Individual Coursework
Coursework Weight:	This coursework accounts for ***40%*** of the overall module grades.
Submission Date:	**Milestone 1: Week 9 (Dec 24, 2025)** **Milestone 2: Week 17 (Mar 4, 2026)** **Final Submission: Week 19 (Mar 18,2026)**
Coursework given out:	**Week 8, (Dec 11,2025)**
Submission Instructions:	Submit the following to Itahari International College's RTE department before the due date: ● A report (document) in .pdf format in the MST or through any medium which the RTE department specifies. ● Project in the ZIP file - SQL Queries - Script File
Warning:	London Metropolitan University and Itahari International College take plagiarism very seriously. Offenders will be dealt with sternly.

PLAGIARISM

You are reminded that there exist regulations concerning plagiarism. Extracts from these regulations are printed overleaf. Please sign below to say that you have read and understand these extracts:

Extracts from University *Regulations on Cheating, Plagiarism and Collusion*

Section 2.3: *"The following broad types of offence can be identified and are provided as indicative examples ….*

(i) Cheating: including taking unauthorised material into an examination; consulting unauthorised material outside the examination hall during the examination; obtaining an unseen examination paper in advance of the examination; copying from another examinee; using an unauthorised calculator during the examination or storing unauthorised material in the memory of a programmable calculator which is taken into the examination; copying coursework.

(ii) Falsifying data in experimental results.

(iii) Personation, where a substitute takes an examination or test on behalf of the candidate. Both candidate and substitute may be guilty of an offence under these Regulations.

(iv) Bribery or attempted bribery of a person thought to have some influence on the candidate's assessment.

(v) Collusion to present joint work as the work solely of one individual.

(vi) Plagiarism, where the work or ideas of another are presented as the candidate's own.

(vii) Other conduct calculated to secure an advantage on assessment.

(viii) Assisting in any of the above.

Some notes on what this means for students:

1. Copying another student's work is an offence, whether from a copy on paper or from a computer file, and in whatever form the intellectual property being copied takes, including text, mathematical notation, and computer programs.

2. Taking extracts from published sources *without attribution* is an offence. To quote ideas, sometimes using extracts, is generally to be encouraged. Quoting ideas is achieved by stating an author's argument and attributing it, perhaps by quoting, immediately in the text, his or her name and year of publication, e.g. "$e = mc^2$ (Einstein 1905)". A *reference* section at the end of your work should then list all such references in alphabetical order of authors' surnames. (There are variations on this referencing system which your tutors may prefer you to use.) If you wish to quote a paragraph or so from published work then indent the quotation on both left and right margins, using an italic font where practicable, and introduce the quotation with an attribution.

Coursework Details

The coursework assignment is an individual assessment weighted 40% of the marks for the module. It is designed mainly to assess students' practical problem-solving skills and critical thinking/evaluation on the design and development of database systems. It requires the student to analyse, design, and implement a web-based database application based on a given business case study. You are asked to provide a software solution as well as appropriate documentation detailing the design and implementation of the system.

1. Case Study

KumariCinemas is attempting to establish a cinema chain in Nepal. But there are existing problems and discrepancies within the organization like location, hall number, capacity and high operational costs and preexisting problems like poor customer experience with other movie halls. Kumari cinemas wants to build sophisticated halls and a centralized system that will improve ticket management efficiently, resolve communication issues, implement automation. The company decides to implement a robust system for it. So, the users can experience a revolutionizing movie watching experience.

A registered user can book or buy one or many ticket for a particular hall. There is a cancellation policy for booked ticket. If a ticket is not bought within 1hr before show time, a ticket is automatically cancelled and the seat reserved is free. Some theaters may charge different ticket charge on public holiday and new movie release week.

Your prototype of the system will be developed using Oracle SQL Developer Data Modeler and ASP.NET with C#.

Fig 1: Example of Movie Ticketing System

Username	Pratibha Gurung
Address	Pokhara

Movieid	Title	Duration	Language	Genre	Theaternam e	Theatrecityhall	Hallcapacity	releasedate	showtimes	Ticket price	showdate
1	Avatar: Fire and Ash	n/a	English	Fiction	KumariCinemas	Pokhara Cineplex	326,231,	Dec 19, 2025	Morning, day, evening	390	Dec 21,2025
						Labim Mall	182,180,183	Dec 19, 2025	Morning, day, evening	420	Dec 21,2025
						Kumari cinemasBiratnagar	200	Dec 19, 2025	Morning, day, evening	200	Dec 21,2025

2. Requirements of the Coursework

Marks are awarded for producing a working and properly documented system that meets the requirements specified below as **deliverables**:

2.1 Contents Page

A list of sections/subsections of the document, including page numbers.

2.2 Normalisation

[15 Marks]

Produce a set of fully normalised tables for the system:

- You may use Figure 1 as a starting point for normalisation.
- You may also add additional attributes where appropriate.
- Show clearly all the steps of normalisation, up to the 3rd normal form.
- Two separate normalisation is done showing the correct transition between UNF to 3NF.
- Proper identification of Primary/Foreign Key, Repeating Groups, Partial Dependency, and Transitive Dependency

2.3 E-R Model

[10 Marks]

Use *Oracle SQL Developer Data Modeler* to produce an Entity Relationship Diagram. The final ERD should be consistent with the outcome of your normalisation. Submit a copy of the ERD:

- Proper ERD of the textual description with proper entities and correct cardinality (entities must show all primary keys and foreign keys involved).
- Explanation of assumptions made in order to make the ERD (must show the process to remove the duplication of entities(relations) from Relational Model, Normalization 1 and Normalization 2)

2.4 Data Dictionary

[5 Marks]

Use *Oracle SQL Developer Data Modeler* to produce a list of attributes for each entity. Submit a print-out copy of these lists:

- Data Dictionary must contain well-defined Name of Tables, Attributes, Appropriate Data Type and Size of Attributes, Constraints of Each attribute, Reference Tables and Attributes along with Example Data

2.5 Generation of Database

[3 Marks+ 4 Marks+ 3 Marks]

- Use *Oracle SQL Developer Data Modeler* to convert the E-R diagram into a set of database tables. Provide a print-out of the DDL script for generating the tables (relevant 'CREATE statements only).

- Use *Oracle SQL Developer* to populate these tables with suitable data values (using 'INSERT' statements), at least 5 rows for SETUPS, and 10 rows for CONFIGURATION and TRANSACTION tables with proper screenshot.

- Provide a print-out of contents for all the tables (using 'SELECT' statements) with a proper screenshot.

2.6 Implementation of Web-based Database Application

❑ Implementation of a web-based database application which includes the following webforms (web pages) using ASP.NET with C#:

- **Basic Webforms:**

[15 Marks]

  - User Details
  - Theatercityhall Details
  - Showtimes Details
  - Movie Details
  - Ticket Details

  All these forms should facilitate input, update, and delete of information.

- **Complex Webforms:**
  (Provide SQL Queries and Complex forms)

[6+14 Marks]

  - **User Ticket**(for any user, show details of the user and the tickets he had bought during a period of six month.)

  - **TheaterCityHall Movie** (For any theatercityhall, show the detail of movie and showtime)

  - **MovieTheatherCityHallOccupancyPerformer** (for any movie, show the details of top 3 theatercityhall who has maximum seat occupancy based on percentage). NOTE: Only paid tickets would be counted as seat occupancy.

❑ Implementation of a homepage website that includes an options menu with an Attractive Graphical Dashboard.

[5 Marks]

2.7 Documentation of the system (as implemented in 3.6)

FOR EACH FORM

Implementation document

- Provide a set of screen dumps for all the web pages (webforms) you have produced.
- Basic Forms to show CRUD operation (form view and list view screens with Template Fields for Foreign Keys))
- Complex Forms (Proper Filter Demonstration using List Box/Grid and Template Field (foreign keys))

Testing Document

[10 Marks]

- Provide a copy of the initial data (table contents) in your system.
- For each form implemented, list the individual tests that have been carried out together with their results.
- Proper test cases with Before and After Screenshots of data
- At least 2 failure cases with proper correction measures

FOR THE APPLICATION

The URL address for the uploaded website (connected with the Oracle database)

User Manual (up to 5 pages)

[5 Marks]

- The User Manual should have a contents page and separate sections for each form provided.
- The User Manual should contain clear instructions on how to use the system and how to run each of the forms available to it.
  - Easy to read user manual with Arrows and Graphics to explain the process

2.8 Further Discussion

[5 Marks]

Your discussion should summarise your experience in undertaking this coursework with the mention of 5 tools/techniques learned during coursework.

Milestone 1 (Dec 24, 2025)

- Normalization

Create an ERD from the case study with proper identification of relation and cardinality.

Normalize the given table with proper key identification and show all the steps for identification of dependency.

- Final ERD

From the result set acquired from case study ERD and normalized table. Combine all the entities and create final ERD using Data Modeler.

Create table in Oracle using the script generated from Data Modeler and insert data as required by coursework.

Milestone 2 (Mar 4, 2026)

Create basic and complex web from required by coursework using ASP.NET.

Test Cases

Final Submission (Mar 18, 2026)

Create a final report

----------End of the Coursework----------