Do **NOT** press Submit Assignment button until you are ready to submit your exam for grading.
Your progress is saved automatically, and you can resume an already started exam if your session resets or browser is closed.

You can only make one (1) submission in the final exam. Your progress will be submitted automatically on the deadline if you have not yet submitted.

Part 1

01000103

You have been hired to design a web application for an online shop that sells books.

The system requires the following features:

- Users can search the different books available
- Books can be searched/filtered by:
    - Genre/Category
    - Author
    - Cover type (hard/soft)
    - Price
- Users can sign-up and log-in
- Users can order books
- Users can view their order history

Thinking about such a system, complete the following tasks:

Task 1.1

Design a database schema diagram for the system described.

- Be sure to include appropriate relationships and cardinalities.
- Be sure to normalise the schema to at least 3rd normal form.

Upload the file as an image or pdf

选择文件 未选择任何文件 上传

Allowed Extensions: jpeg jpg pdf png

[30 marks]

Task 1.2

When building a database schema, N-N relationships need to be properly reduced/decomposed.

Briefly discuss how this applies to the system you've designed in Task 1.1 and, specifically in terms of your system and its relationships, explain how this relates to database normalisation.

[10 marks]

Task 1.3

Implement your database schema from Task 1.1 in MySQL

When you create the database

- Ensure appropriate tables, data types, keys and integrity constraints are present.
- Add at least 1 row of test data to each table.

Download a backup/dump of the database and upload as a zip file

选择文件 未选择任何文件 上传

Allowed Extensions: zip

[30 marks]

Task 1.4

Write a SQL query to retrieve the name and email address of all users who bought a given item in the last 30 days.

You can assume the item's unique indentifying information is provided.

[10 marks]

Task 1.5

Implement a basic web application for the search feature of this online shop.

- Use only the technologies covered in this course:
  - HTML & CSS
  - JavaScript, AJAX, & basic client-side Vue.js
  - NodeJS/Express
  - MySQL
- Only implement the search page/feature and any necessary supporting code on the server.
- Users should also be able to filter search results by:
  - Genre/Category
  - Author
  - Cover type (hard/soft)
  - Price
- Be sure to follow best practices as discussed throughout the course.

Excluding the node_modules folder, submit/upload your implementation as a zip file

选择文件 未选择任何文件 上传

Allowed Extensions: zip

[160 marks total]
Consisting of

- 30 marks for functionality
- 20 marks for HTML & CSS
- 20 marks for client side JS and Vue
- 20 marks for AJAX requests
- 20 marks for server side routes
- 20 marks for MySQL integration
- 30 marks for good UX, standard compliance, maintainability & security practices

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Task 1.6

Dymocks (https://www.dymocks.com.au/books/) is an example of an online shop that sells books.

Identify a feature present in both the Dymocks website, and your implementation from Task 1.5.

Specifically in terms of perceivability and operability, discuss how these two systems compare.

[15 marks]