Storing and Retrieving Data – Final project

Max. Group members: 5

Percentage for the final score: 35%

Delivery date:

- December 18, 2024, until 23H59.

Deliverables:

- A video of **maximum** 10 minutes that shows the steps followed to do the project.
- **One** single SQL script to recreate the database and the existing data on it.

NOTES:

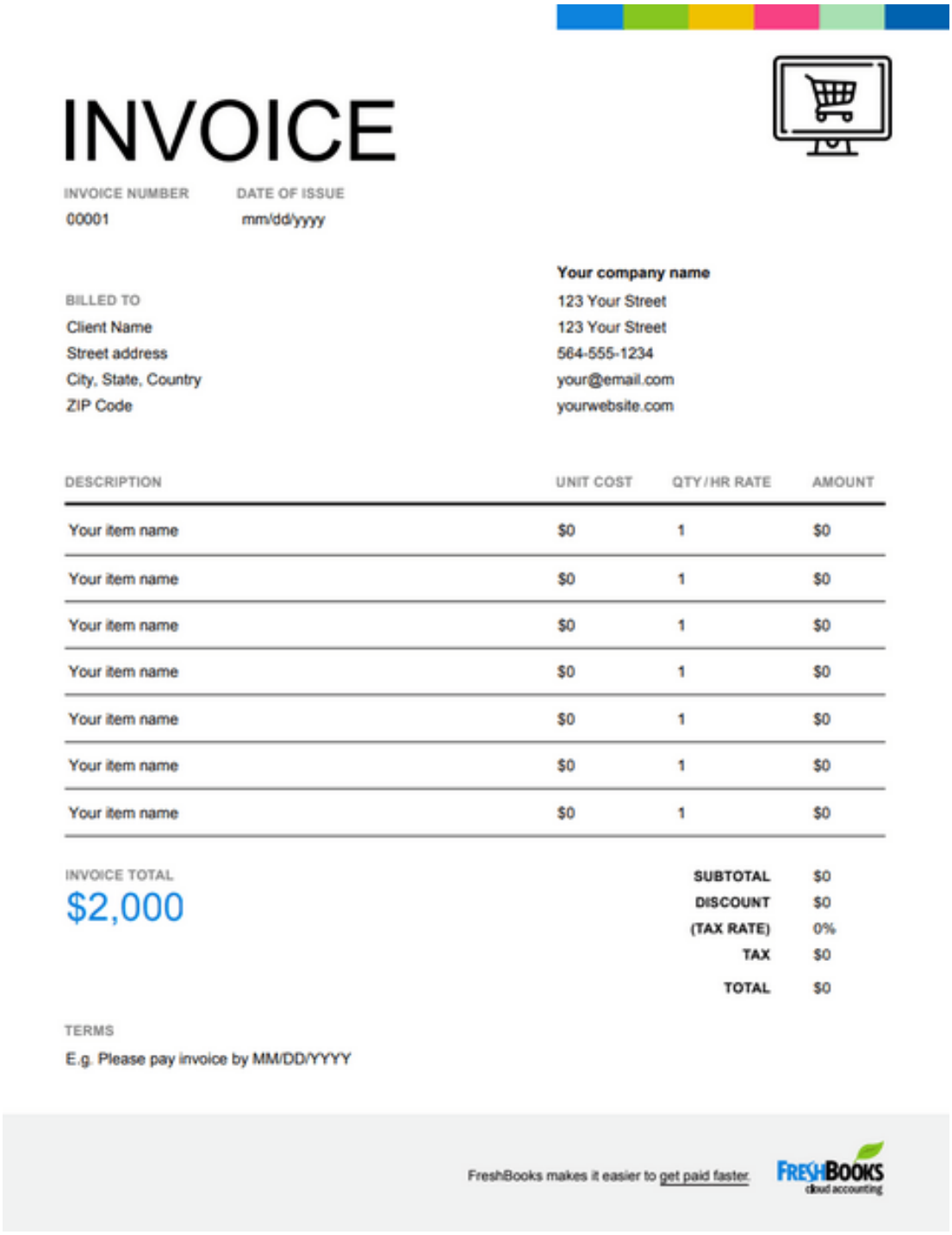
- Deliveries is via Moodle, not via email. Only one group member should make the submission. For the video you just need to submit a text file with a link to the video. Make sure you the link opens the video without requiring any type of permissions.
- A reference solution for this project will not be available.
- The video should clearly show all the steps followed to implement the points in the description.
- For every day delayed in the delivery you will be penalized 1 point (up to 5).
- The names of the team members and student numbers should be clearly stated in the video. Missing this point will imply a penalization of 1 point.
- The ERD must be clearly visible and legible in the video.
- A **spoken** description of small fictitious business of any kind of products and/or services.
- Please **do not** use background music in the video!

The video should contain:

A. **The names and student numbers of all the members of the team.**
B. A spoken description of small fictitious business of any kind of products and/or services that needs a relational database to work (e.g., online shops, booking systems, food delivery apps, restaurant management, etc).
C. The steps to create an ERD in MySQL workbench. Do not forget to consider the three normal forms when you design your database model. The names of the entities and its attributes must be clearly visible in the ERD. **Your ERD should not have less than 8 tables**. The customers should be able to rate the product or service.
D. Create two triggers: (1) one for updates (you can choose any updating process, for example, if a product is sold, the trigger may update the available stock of products). And (2) a trigger that inserts a row in a "log" table (your ERD should include a log table). **The video should demonstrate that the trigger works**.
E. Insert some data into you newly created database (20 or 30 rows of transactions would be enough). Make sure that you have transactions that involve **at least 2 consecutive years**. If you want to add more than just a few rows, feel free to look for openly available dataset and/or generate random data.
F. Make a list of 5 business questions that the CEO of the fictitious company may be interested to know and then, write or generate/tune queries for those 5 business questions. NOTE: From the 5 queries, at least 3 of them must use joins and grouping.

G. You need to generate an INVOICE (the invoice in next page is just an example, feel free to have a different invoice) **using VIEWS** in MySql. Create two views to recreate the information on the INVOICE, one view for the head and totals, one view for the details. **Important**: having the invoices as tables to later map them in the views is not accepted. The main idea of the invoice is that is generated from the data in other tables.

H. **Feel free to use AI tools** to generate the schema, queries, and mock data. Just keep in mind that you are the only responsible for the quality of your project and to provide justification for datatypes, table and column names, relationships, and any other technical decision made.



INVOICE

INVOICE NUMBER
00001

DATE OF ISSUE
mm/dd/yyyy

Your company name
123 Your Street
123 Your Street
564-555-1234
your@email.com
yourwebsite.com

BILLED TO
Client Name
Street address
City, State, Country
ZIP Code

DESCRIPTION	UNIT COST	QTY / HR RATE	AMOUNT
Your item name	$0	1	$0
Your item name	$0	1	$0
Your item name	$0	1	$0
Your item name	$0	1	$0
Your item name	$0	1	$0
Your item name	$0	1	$0
Your item name	$0	1	$0

INVOICE TOTAL
$2,000

SUBTOTAL	$0
DISCOUNT	$0
(TAX RATE)	0%
TAX	$0
TOTAL	$0

TERMS
E.g. Please pay invoice by MM/DD/YYYY

FreshBooks makes it easier to get paid faster.

Figure 1: Invoice example 1 (Source: https://www.freshbooks.com/invoice-templates/e-commerce)