

Endterm CS-2111

1. Creating a database in python (Postgresql)

Write down several SQL commands, on the basis of which you will build a full-fledged database containing tables, fields and records.

What you need to do:

- * Create an Online Shop database;
- Add two tables: Products and Blog;
- The Products table should contain the following fields: id, price, number of units, name, description;
- The Blog table should contain the following fields: id, title, intro text, text, author's name, publication date;
- Add a new 10 products to Products;
- Add new entries to Blog 6;
- * Make a selection from the Blog table and get only those articles that contain the characters "c" in the title and "oc" in the intro text.
- Update the blog entry that has an id in the range from 1 to 3. Set them new values for the "Author" field.

2. Creating a web page – FastApi

Using FastApi, you need to make a web page that combines:

1. Forms with a text field
2. List of messages numbered from 1

The page connects to the server via WebSocket.

Using the form, you can send a message to the server, where it will be accepted and the serial number of this message will be added.

Next, a message with a serial number is sent to the page and displayed in the list.

When the page is reloaded, the numbering data is lost and starts at 1.

The page should be dynamic, handle all actions without reloading. This means that when sending a message to the server via a websocket, the page should not be reloaded.

Interaction with the server via websocket must be implemented using JSON. The format and naming of the fields is not important. you can use any.

3. Single-level neural network of direct communication (perceptron).

Develop a python application to implement a perceptron for the following dataset. Use a learning rate of 0.1 with zero bias factor and initialize all weights from 0:

x0	x1	x2	class
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

Library:

```
From sklearn.neural_network import MLPClassifier  
from sklearn.metrics import accuracy_score
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