Endterm CS -2121

1. Creating a python database (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:
• Creation of the database of the online store "Clothes";
• Add two tables: Buyers and Products;
• The "Products" table should contain the following fields: ID, price, number of units, name, description;
• The "Buyers" table should contain the following fields: ID, surname, first name, patronymic, age, e-mail, phone number, purchase receipt number, purchase date, bonuses;
• Add 10 new products to the "Products" table;
• Adding 6 new entries to the blog table;
• Make a selection from the "Buyers" table and display the buyers who have made a purchase of goods in the last 3 days;
• Update the record in the "Buyers" table, whose ID is in the range from 1 to 3. Set them new values for the "Bonuses" field;
• Make a selection from the "Products" table and sort the products in ascending order of price

2. Creating a web page – FastApi

Using the Rest Api, you need to create 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, which is displayed in the list.
When the page is reloaded, the numbering data is lost and starts with 1.
The page should be dynamic, handle all actions without reloading. This means that when sending a message to the server via websocket, the page should not be reloaded.
Interaction with the server via websocket must be implemented using JSON. The format and names of the fields do not matter. you can use any one.

3. Implementation of K-nearest Neighbor Classification Model

Write a program to implement KNN classifier and classify given vector. (for k = 3)

Library:

```
from sklearn.neighbors import KNeighborsClassifier
```

Age	Loan	Class (Defaulter)
25	40000	N

Age	Loan	Class (Defaulter)
35	60000	N
45	80000	N
20	20000	N
35	120000	N
52	18000	N
23	95000	Y
40	62000	Y
60	100000	Y
48	220000	Y
33	150000	Y
48	142000	?