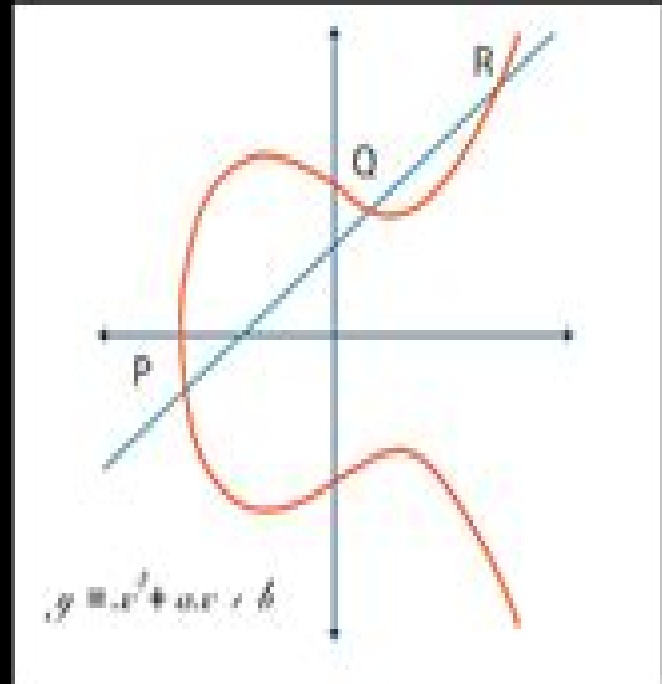


Understanding Elliptic Curve Cryptography



Elliptic Curve Cryptography Matlab Manual

**Vivian Siahaan, Rismon Hasiholan
Sianipar**



Elliptic Curve Cryptography Matlab Manual:

The Quick Tutorial to Learn Database Programming Using Python GUI with MariaDB and PostgreSQL Vivian Siahaan, Rismon Hasiholan Sianipar, 2020-01-15 In this book you will create two MariaDB and PostgreSQL driven projects using PyQt. The step by step guide in this book is expected to help the reader's confidence to become a programmer who can solve database programming problems. A progressive project is provided to demonstrate how to apply the concepts of MariaDB and PostgreSQL using Python. In second chapter you will learn PyQt that consists of a number of Python bindings for cross platform applications that combine all the strengths of Qt and Python. By using PyQt you can include all Qt libraries in Python code so you can write GUI applications in Python. In other words you can use PyQt to access all the features provided by Qt through Python code. Because PyQt depends on the Qt libraries at run time you need to install PyQt. In third chapter you will learn How to create the initial three tables project in the School database Teacher Class and Subject tables. How to create database configuration files. How to create a Python GUI for inserting and editing tables. How to create a Python GUI to join and query the three tables. In fourth chapter you will learn how to Create a main form to connect all forms. Create a project will add three more tables to the school database Student Parent and Tuition tables. Create a Python GUI for inserting and editing tables. Create a Python GUI to join and query over the three tables. In this chapter you will join the six classes Teacher TClass Subject Student Parent and Tuition and make queries over those tables. In chapter five you will create and configure PostgreSQL database. In this chapter you will create Suspect table in crime database. This table has eleven columns suspect_id primary key suspect_name birth_date case_date report_date suspect_status arrest_date mother_name address telephone and photo. You will also create GUI to display edit insert and delete for this table. In chapter six you will create a table with the name Feature_Extraction which has eight columns feature_id primary key suspect_id foreign key feature1 feature2 feature3 feature4 feature5 and feature6. The six fields except keys will have a VARCHAR data type 200. You will also create GUI to display edit insert and delete for this table. In chapter seven you will create two tables Police and Investigator. The Police table has six columns police_id primary key province city address telephone and photo. The Investigator table has eight columns investigator_id primary key investigator_name rank birth_date gender address telephone and photo. You will also create GUI to display edit insert and delete for both tables. In chapter eight you will create two tables Victim and Case_File. The Victim table has nine columns victim_id primary key victim_name crime_type birth_date crime_date gender address telephone and photo. The Case_File table has seven columns case_file_id primary key suspect_id foreign key police_id foreign key investigator_id foreign key victim_id foreign key status and description. You will create GUI to display edit insert and delete for both tables as well.

The Fast Tutorial to Learn Database Programming Using Python GUI with Access and SQL Server Vivian Siahaan, Rismon Hasiholan Sianipar, 2020-01-15 This book covers microsoft access and SQL Server based GUI programming using PyQt. Intentionally designed for various levels of interest and ability of learners.

this book is suitable for students engineers and even researchers in a variety of disciplines No advanced programming experience is needed and only a few school level programming skill are needed In the first chapter you will learn to use several widgets in PyQt5 Display a welcome message Use the Radio Button widget Grouping radio buttons Displays options in the form of a check box and Display two groups of check boxes In chapter two you will learn to use the following topics Using Signal Slot Editor Copy and place text from one Line Edit widget to another Convert data types and make a simple calculator Use the Spin Box widget Use scrollbars and sliders Using the Widget List Select a number of list items from one Widget List and display them on another Widget List widget Add items to the Widget List Perform operations on the Widget List Use the Combo Box widget Displays data selected by the user from the Calendar Widget Creating a hotel reservation application and Display tabular data using Table Widgets In third chapter you will learn How to create the initial three tables project in the School database Teacher Class and Subject tables How to create database configuration files How to create a Python GUI for inserting and editing tables How to create a Python GUI to join and query the three tables In fourth chapter you will learn how to Create a main form to connect all forms Create a project will add three more tables to the school database Student Parent and Tuition tables Create a Python GUI for inserting and editing tables Create a Python GUI to join and query over the three tables In chapter five you will join the six classes Teacher TClass Subject Student Parent and Tuition and make queries over those tables In chapter six you will create dan configure database In this chapter you will create Suspect table in crime database This table has eleven columns suspect_id primary key suspect_name birth_date case_date report_date suspect_status arrest_date mother_name address telephone and photo You will also create GUI to display edit insert and delete for this table In chapter seven you will create a table with the name Feature_Extraction which has eight columns feature_id primary key suspect_id foreign key feature1 feature2 feature3 feature4 feature5 and feature6 The six fields except keys will have VARBINARY MAX data type You will also create GUI to display edit insert and delete for this table In chapter eight you will create two tables Police and Investigator The Police table has six columns police_id primary key province city address telephone and photo The Investigator table has eight columns investigator_id primary key investigator_name rank birth_date gender address telephone and photo You will also create GUI to display edit insert and delete for both tables In the last chapter you will create two tables Victim and Case_File The Victim table has nine columns victim_id primary key victim_name crime_type birth_date crime_date gender address telephone and photo The Case_File table has seven columns case_file_id primary key suspect_id foreign key police_id foreign key investigator_id foreign key victim_id foreign key status and description You will create GUI to display edit insert and delete for both tables as well

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PROGRESSIVE TUTORIAL TO DATABASE PROGRAMMING WITH PYTHON GUI AND POSTGRESQL Vivian Siahaan, Rismon Hasiholan Sianipar, 2020-01-03 In this book you will create two desktop applications using Python GUI and PostgreSQL This book is a Python PostgreSQL version of the Python MySQL book which was written by the author What

underlies the writing of this book is the growing popularity of the PostgreSQL database server lately and more and more programmers migrating from MySQL to PostgreSQL. In this book you will learn to build a school database project step by step. A number of widgets from PyQt will be used for the user interface. In the first and second chapter you will get an introduction of postgresql. And then you will learn querying data from the postgresql using Python including establishing a database connection, creating a statement object, executing the query, processing the resultset object, querying data using a statement that returns multiple rows, querying data using a statement that has parameters, inserting data into a table using Python, updating data in postgresql database using Python, calling postgresql stored function using Python, deleting data from a postgresql table using Python, and postgresql Python transaction. In the fourth chapter you will study creating the initial three tables in the School database project: Teacher table, Class table, and Subject table. Creating database configuration files, creating a Python GUI for viewing and navigating the contents of each table, creating a Python GUI for inserting and editing tables, and creating a Python GUI to merge and query the three tables. In chapter five you will learn creating the main form to connect all forms, creating a project that will add three more tables to the school database: the Student table, the Parent table, and the Tuition table. Creating a Python GUI to view and navigate the contents of each table, creating a Python GUI for editing, inserting, and deleting records in each table, creating a Python GUI to merge and query the three tables, and all six tables. In chapter six you will create and configure PostgreSQL database. In this chapter you will create a Suspect table in a crime database. This table has eleven columns: suspect_id (primary key), suspect_name, birth_date, case_date, report_date, suspect_status, arrest_date, mother_name, address, telephone, and photo. You will also create a GUI to display, edit, insert, and delete for this table. In chapter seven you will create a table with the name Feature_Extraction which has eight columns: feature_id (primary key), suspect_id (foreign key), feature1, feature2, feature3, feature4, feature5, and feature6. The six fields except keys will have a VARCHAR data type 200. You will also create a GUI to display, edit, insert, and delete for this table. In chapter eight you will create two tables: Police and Investigator. The Police table has six columns: police_id (primary key), province, city, address, telephone, and photo. The Investigator table has eight columns: investigator_id (primary key), investigator_name, rank, birth_date, gender, address, telephone, and photo. You will also create a GUI to display, edit, insert, and delete for both tables. In chapter nine you will create two tables: Victim and Case_File. The Victim table has nine columns: victim_id (primary key), victim_name, crime_type, birth_date, crime_date, gender, address, telephone, and photo. The Case_File table has seven columns: case_file_id (primary key), suspect_id (foreign key), police_id (foreign key), investigator_id (foreign key), victim_id (foreign key), status, and description. You will create a GUI to display, edit, insert, and delete for both tables as well.

STEP BY STEP TUTORIAL:
JAVA/MYSQL With Object-Oriented Programming Using Apache NetBeans IDE PART 3 Vivian Siahaan, Rismon Hasiholan Sianipar, 2023-02-08. The sakila database consists of 15 tables including film, film_category, actor, customer, rental, payment, and inventory among others. The sakila sample database which is a fictitious database designed to represent a DVD

rental store is intended to provide a standard schema that can be used for examples in books tutorials articles samples and so forth Our books part 1 and part 2 had been published implementing the first eleven tables in sakila database actor language film category film_category film_actor country city address store and staff tables This book as part 3 develops step by step object oriented programming and Java GUI tutorial using NetBeans to implement the remaining four tables customer inventory rental and payment in the Sakila sample database which is a fictitious database designed to represent a DVD rental store

PART 1 - 3: STEP BY STEP TUTORIAL: JAVA/MYSQL With Object-Oriented Programming Using Apache NetBeans IDE Vivian Siahaan,Rismon Hasiholan Sianipar,2023-02-11 PART 1 This book uses six tables in the Sakila sample database which is a fictitious database designed to represent a DVD rental store The database consists of 15 tables including film film_category actor customer rental payment and inventory among others The Sakila sample database is intended to provide a standard schema that can be used for examples in books tutorials articles samples and so forth In this book as part 1 you will develop step by step tutorial object oriented programming and Java GUI using NetBeans to implement the first six tables in sakila database actor language film category film_category and film_actor tables PART 2 The sakila database consists of 15 tables including film film_category actor customer rental payment and inventory among others The sakila sample database which is a fictitious database designed to represent a DVD rental store is intended to provide a standard schema that can be used for examples in books tutorials articles samples and so forth Our previous book part 1 implements the first six tables in sakila database actor language film category film_category and film_actor tables This book as second part uses five tables in the sakila sample database country city address store and staff tables PART 3 Our books part 1 and part 2 had been published implementing the first eleven tables in sakila database actor language film category film_category film_actor country city address store and staff tables This book as part 3 develops step by step object oriented programming and Java GUI tutorial using NetBeans to implement the remaining four tables customer inventory rental and payment in the Sakila sample database which is a fictitious database designed to represent a DVD rental store

The Best Tutorial to Learn Database Programming with Java GUI, MariaDB, and SQL Server Vivian Siahaan,Rismon Hasiholan Sianipar,2020-01-08 This book explains relational theory in practice and demonstrates through two projects how you can apply it to your use of MariaDB and SQL Server databases This book covers the important requirements of teaching databases with a practical and progressive perspective This book offers the straightforward practical answers you need to help you do your job This hands on tutorial reference guide to MariaDB and SQL Server is not only perfect for students and beginners but it also works for experienced developers who aren't getting the most from MariaDB and SQL Server As you would expect this book shows how to build from scratch two different databases MariaDB and SQL Server using Java In designing a GUI and as an IDE you will make use of the NetBeans tool In chapter one you will learn the basics of cryptography using Java Here you will learn how to write a Java program to count Hash MAC Message Authentication Code

store keys in a KeyStore generate PrivateKey and PublicKey encrypt decrypt data and generate and verify digital prints You will also learn how to create and store salt passwords and verify them In chapter two you will create a PostgreSQL database named Bank and its tables In chapter three you will create a Login table In this case you will see how to create a Java GUI using NetBeans to implement it In addition to the Login table in this chapter you will also create a Client table In the case of the Client table you will learn how to generate and save public and private keys into a database You will also learn how to encrypt decrypt data and save the results into a database In chapter four you will create an Account table This account table has the following ten fields account_id primary key client_id primarykey account_number account_date account_type plain_balance cipher_balance decipher_balance digital_signature and signature_verification In this case you will learn how to implement generating and verifying digital prints and storing the results into a database In chapter five you create a table named Client_Data which has seven columns client_data_id primary key account_id primary_key birth_date address mother_name telephone and photo_path In chapter six you will be taught how to create a SQL Server database named Crime and its tables In chapter seven you will be taught how to extract image features utilizing BufferedImage class in Java GUI In chapter eight you will be taught to create Java GUI to view edit insert and delete Suspect table data This table has eleven columns suspect_id primary key suspect_name birth_date case_date report_date suspect_status arrest_date mother_name address telephone and photo In chapter nine you will be taught to create Java GUI to view edit insert and delete Feature_Extraction table data This table has eight columns feature_id primary key suspect_id foreign key feature1 feature2 feature3 feature4 feature5 and feature6 In chapter ten you will add two tables Police_Station and Investigator These two tables will later be joined to Suspect table through another table File_Case which will be built in the seventh chapter The Police_Station has six columns police_station_id primary key location city province telephone and photo The Investigator has eight columns investigator_id primary key investigator_name rank birth_date gender address telephone and photo Here you will design a Java GUI to display edit fill and delete data in both tables In chapter eleven you will add two tables Victim and File_Case The File_Case table will connect four other tables Suspect Police_Station Investigator and Victim The Victim table has nine columns victim_id primary key victim_name crime_type birth_date crime_date gender address telephone and photo The File_Case has seven columns file_case_id primary key suspect_id foreign key police_station_id foreign key investigator_id foreign key victim_id foreign key status and description Here you will also design a Java GUI to display edit fill and delete data in both tables Finally this book is hopefully useful and can improve database programming skills for every Java MariaDB SQL Server programmer

STEP BY STEP TUTORIAL: Java/MySQL with Object-Oriented Programming Using Apache NetBeans IDE PART 1 Vivian Siahaan,Rismon Hasiholan Sianipar,2023-01-22 This book uses six tables in the Sakila sample database which is a fictitious database designed to represent a DVD rental store The database consists of 15 tables including film film_category actor customer rental payment and inventory among others The Sakila sample database is intended to

provide a standard schema that can be used for examples in books tutorials articles samples and so forth In this book as part 1 you will develop step by step tutorial object oriented programming and Java GUI using NetBeans to implement the first six tables in sakila database actor language film category film_category and film_actor tables **Step by Step Tutorial**

IMAGE CLASSIFICATION Using Scikit-Learn, Keras, And TensorFlow with PYTHON GUI Vivian Siahaan,2023-06-21

In this book implement deep learning based image classification on classifying monkey species recognizing rock paper and scissor and classify airplane car and ship using TensorFlow Keras Scikit Learn OpenCV Pandas NumPy and other libraries In chapter 1 you will learn how to use TensorFlow Keras Scikit Learn OpenCV Pandas NumPy and other libraries to perform how to classify monkey species using 10 Monkey Species dataset provided by Kaggle <https://www.kaggle.com/slothkong/10-monkey-species-dataset> Here s an overview of the steps involved in classifying monkey species using the 10 Monkey Species dataset Dataset Preparation Download the 10 Monkey Species dataset from Kaggle and extract the files The dataset should consist of separate folders for each monkey species with corresponding images Load and Preprocess Images Use libraries such as OpenCV to load the images from the dataset Resize the images to a consistent size e g 224x224 pixels to ensure uniformity Split the Dataset Divide the dataset into training and testing sets Typically an 80 20 or 70 30 split is used where the larger portion is used for training and the smaller portion for testing the model s performance Label Encoding Encode the categorical labels monkey species into numeric form This step is necessary to train a machine learning model as most algorithms expect numerical inputs Feature Extraction Extract meaningful features from the images using techniques like deep learning or image processing algorithms This step helps in representing the images in a format that the machine learning model can understand Model Training Use libraries like TensorFlow and Keras to train a machine learning model on the preprocessed data Choose an appropriate model architecture in this case MobileNetV2 Model Evaluation Evaluate the trained model on the testing set to assess its performance Metrics like accuracy precision recall and F1 score can be used to evaluate the model s classification performance Predictions Use the trained model to make predictions on new unseen images Pass the images through the trained model and obtain the predicted labels for the monkey species In chapter 2 you will learn how to use TensorFlow Keras Scikit Learn OpenCV Pandas NumPy and other libraries to perform how to recognize rock paper and scissor using dataset provided by Kaggle <https://www.kaggle.com/sanikamal/rock-paper-scissors-dataset> download Here s the outline of the steps Step 1 Dataset Preparation Download the rock paper scissors dataset from Kaggle by visiting the provided link and clicking on the Download button Save the dataset to a local directory on your machine Extract the downloaded dataset to a suitable location This will create a folder containing the images for rock paper and scissors Step 2 Data Preprocessing Import the required libraries TensorFlow Keras NumPy OpenCV and Pandas Load the dataset using OpenCV Iterate through the image files in the dataset directory and use OpenCV s cv2 imread function to load each image You can specify the image s file extension e g PNG and directory path Preprocess the images Resize the loaded

images to a consistent size using OpenCV's cv2 resize function. You may choose a specific width and height suitable for your model. Prepare the labels: Create a list or array to store the corresponding labels for each image: rock, paper, or scissors. This can be done based on the file naming convention or by mapping images to their respective labels using a dictionary.

Step 3: Model Training

Create a convolutional neural network (CNN) model using Keras. Define a CNN architecture using Keras Sequential model or functional API. This typically consists of convolutional layers, pooling layers, and dense layers. Compile the model: Specify the loss function (e.g., categorical cross entropy) and optimizer (e.g., Adam) using Keras compile function. You can also define additional metrics to evaluate the model's performance. Train the model: Use Keras fit function to train the model on the preprocessed dataset. Specify the training data, labels, batch size, number of epochs, and validation data if available. This will optimize the model's weights based on the provided dataset. Save the trained model: Once the model training is complete, you can save the trained model to disk using Keras save or save_weights function. This allows you to load the model later for predictions or further training.

Step 4: Model Evaluation

Evaluate the trained model: Use Keras evaluate function to assess the model's performance on a separate testing dataset. Provide the testing data and labels to calculate metrics such as accuracy, precision, recall, and F1 score. This will help you understand how well the model generalizes to new unseen data. Analyze the model's performance: Interpret the evaluation metrics and analyze any potential areas of improvement. You can also visualize the confusion matrix or classification report to gain more insights into the model's predictions.

Step 5: Prediction

Use the trained model for predictions: Load the saved model using Keras load_model function. Then pass new unseen images through the model to obtain predictions. Preprocess these images in the same way as the training images: resize, normalize, etc. Visualize and interpret predictions: Display the predicted labels alongside the corresponding images to see how well the model performs. You can use libraries like Matplotlib or OpenCV to show the images and their predicted labels. Additionally, you can calculate the accuracy of the model's predictions on the new dataset.

In chapter 3, you will learn how to use TensorFlow, Keras, Scikit Learn, OpenCV, Pandas, NumPy, and other libraries to perform how to classify airplane, car, and ship using Multiclass image dataset: airplane, car, ship dataset provided by Kaggle (<https://www.kaggle.com/abtaabm/multiclassimage-dataset-airplane-car>). Here are the outline steps:

- Import the required libraries: TensorFlow, Keras, Scikit Learn, OpenCV, Pandas, NumPy.
- Load and preprocess the dataset: Read the images from the dataset folder. Resize the images to a fixed size. Store the images and corresponding labels.
- Split the dataset into training and testing sets: Split the data and labels into training and testing sets using a specified ratio.
- Encode the labels: Convert the categorical labels into numerical format.
- Perform one-hot encoding on the labels.
- Build MobileNetV2 model using Keras: Create a sequential model. Add convolutional layers with activation functions. Add pooling layers for downsampling. Flatten the output and add dense layers. Set the output layer with softmax activation.
- Compile and train the model: Compile the model with an optimizer and loss function. Train the model using the training data and labels. Specify the number of epochs and batch size.
- Evaluate the model: Evaluate the

trained model using the testing data and labels Calculate the accuracy of the model Make predictions on new images Load and preprocess a new image Use the trained model to predict the label of the new image Convert the predicted label from numerical format to categorical

STEP BY STEP TUTORIAL: JAVA/MYSQL With Object-Oriented Programming Using Apache NetBeans IDE PART 2 Vivian Siahaan,Rismon Hasiholan Sianipar,2023-01-30 The sakila database consists of 15 tables including film film_category actor customer rental payment and inventory among others The sakila sample database which is a fictitious database designed to represent a DVD rental store is intended to provide a standard schema that can be used for examples in books tutorials articles samples and so forth Our previous book part 1 implements the first six tables in sakila database actor language film category film_category and film_actor tables This book as second part uses five tables in the sakila sample database country city address store and staff tables

STEP BY STEP TUTORIAL: SQL SERVER FOR DATA SCIENCE WITH PYTHON GUI Vivian Siahaan,Rismon Hasiholan Sianipar,2022-11-13 This book uses the SQL SERVER version of MySQL based Northwind database The Northwind database is a sample database that was originally created by Microsoft and used as the basis for their tutorials in a variety of database products for decades The Northwind database contains the sales data for a fictitious company called Northwind Traders which imports and exports specialty foods from around the world The Northwind database is an excellent tutorial schema for a small business ERP with customers orders inventory purchasing suppliers shipping employees and single entry accounting The Northwind database has since been ported to a variety of non Microsoft databases including SQL SERVER The Northwind dataset includes sample data for the following Suppliers Suppliers and vendors of Northwind Customers Customers who buy products from Northwind Employees Employee details of Northwind traders Products Product information Shippers The details of the shippers who ship the products from the traders to the end customers and Orders and Order_Details Sales Order transactions taking place between the customers the distribution of amount by year quarter month week day and hour the distribution of bottom 10 sales by product top 10 sales by product bottom 10 sales by customer top 10 sales by customer bottom 10 sales by supplier top 10 sales by supplier bottom 10 sales by customer country top 10 sales by customer country bottom 10 sales by supplier country top 10 sales by supplier country average amount by month with mean and ewm average amount by every month amount feature over June 1997 amount feature over 1998 and all amount feature

FULL SOURCE CODE: SQLITE FOR STUDENTS AND PROGRAMMERS WITH PYTHON GUI Vivian Siahaan,Rismon Hasiholan Sianipar,2022-07-26 In this project we provide you with a SQLITE version of an Oracle sample database named OT which is based on a global fictitious company that sells computer hardware including storage motherboard RAM video card and CPU You can find the detailed structures of the database <https://www.oracletutorial.com/getting-started/oracle-sample-database/> The company maintains the product information such as name description standard cost list price and product line It also tracks the inventory information for all products including warehouses where products are available Because the company operates globally it has

warehouses in various locations around the world The company records all customer information including name address and website Each customer has at least one contact person with detailed information including name email and phone The company also places a credit limit on each customer to limit the amount that customer can owe Whenever a customer issues a purchase order a sales order is created in the database with the pending status When the company ships the order the order status becomes shipped In case the customer cancels an order the order status becomes canceled In addition to the sales information the employee data is recorded with some basic information such as name email phone job title manager and hire date In this project you will write Python script to create every table and insert rows of data into each of them You will develop GUI with PyQt5 to each table in the database You will also create GUI to plot case distribution of order date by year quarter month week and day the distribution of amount by year quarter month week day and hour the distribution of bottom 10 sales by product top 10 sales by product bottom 10 sales by customer top 10 sales by customer bottom 10 sales by category top 10 sales by category bottom 10 sales by status top 10 sales by status bottom 10 sales by customer city top 10 sales by customer city bottom 10 sales by customer state top 10 sales by customer state average amount by month with mean and EWM average amount by every month amount feature over June 2016 amount feature over 2017 and amount payment in all years

FULL SOURCE CODE: PRACTICAL DATA SCIENCE WITH SQLITE AND PYTHON GUI Vivian Siahaan,Rismon Hasiholan Sianipar,2022-08-08 In this project we provide you with the SQLite sample database named chinook The chinook sample database is a good database for practicing with SQL especially SQLite The detailed description of the database can be found on <https://www.sqlitetutorial.net/sqlite-sample-database/> There are 11 tables in the chinook sample database The employee table stores employees data such as employee id last name first name etc It also has a field named ReportsTo to specify who reports to whom customers table stores customers data invoices The artist table stores artists data It is a simple table that contains only the artist id and name The album table stores data about a list of tracks Each album belongs to one artist However one artist may have multiple albums The media_type table stores media types such as MPEG audio and AAC audio files genre table stores music types such as rock jazz metal etc The track table stores the data of songs Each track belongs to one album playlist the distribution of amount by year quarter month week day and hour the bottom top 10 sales by employee the bottom top 10 sales by customer the bottom top 10 sales by customer the bottom top 10 sales by artist the bottom top 10 sales by genre the bottom top 10 sales by play list the bottom top 10 sales by customer city the bottom top 10 sales by customer city the bottom top 10 sales by customer city the payment amount by month with mean and EWM the average payment amount by every month and amount payment in all years

SUPERMARKET SALES ANALYSIS AND PREDICTION USING MACHINE LEARNING WITH PYTHON GUI Vivian Siahaan,Rismon Hasiholan Sianipar,2022-04-15 The dataset used in this project consists of the growth of supermarkets with high market competitions in most populated cities The dataset is one of the historical sales of supermarket company which has recorded in 3 different branches for 3 months

data Predictive data analytics methods are easy to apply with this dataset Attribute information in the dataset are as follows Invoice id Computer generated sales slip invoice identification number Branch Branch of supercenter 3 branches are available identified by A B and C City Location of supercenters Customer type Type of customers recorded by Members for customers using member card and Normal for without member card Gender Gender type of customer Product line General item categorization groups Electronic accessories Fashion accessories Food and beverages Health and beauty Home and lifestyle Sports and travel Unit price Price of each product in Quantity Number of products purchased by customer Tax 5% tax fee for customer buying Total Total price including tax Date Date of purchase Record available from January 2019 to March 2019 Time Purchase time 10am to 9pm Payment Payment used by customer for purchase 3 methods are available Cash Credit card and Ewallet COGS Cost of goods sold Gross margin percentage Gross margin percentage Gross income Gross income and Rating Customer stratification rating on their overall shopping experience On a scale of 1 to 10 In this project you will perform predicting rating using machine learning The machine learning models used in this project to predict clusters as target variable are K Nearest Neighbor Random Forest Naive Bayes Logistic Regression Decision Tree Support Vector Machine LGBM Gradient Boosting XGB and MLP Finally you will plot boundary decision distribution of features feature importance cross validation score and predicted values versus true values confusion matrix learning curve performance of the model scalability of the model training loss and training accuracy

FOUR PROJECTS: MySQL and SQLite For Data Science with Python GUI Vivian Siahaan, Rismon Hasiholan Sianipar, 2022-06-29 PROJECT 1 SQLITE AND DATA SCIENCE QUERIES AND VISUALIZATION WITH PYTHON GUI In this project you will develop GUI with PyQt5 to utilize Push Button Combo Box Table Widget Line Edit and Widget read and create SQLite database and every table in it plot case distribution of film release year film rating rental duration and categorize film length plot rating variable against rental_duration variable in stacked bar plots plot length variable against rental_duration variable in stacked bar plots read payment table plot case distribution of Year Day Month Week and Quarter of payment plot which year month week days of week and quarter have most payment amount read film list by joining five tables category film_category film_actor film and actor plot case distribution of top 10 and bottom 10 actors plot which film title have least and most sales plot which actor have least and most sales plot which film category have least and most sales plot case distribution of top 10 and bottom 10 overdue costumers plot which customer have least and most overdue days plot which store have most sales plot average payment amount by month with mean and EWM and plot payment amount over June 2005 This project uses the Sakila sample database which is a fictitious database designed to represent a DVD rental store The tables of the database include film film_category actor film_actor customer rental payment and inventory among others You can download the SQLite from <https://dev.mysql.com/doc/sakila/en/> PROJECT 2 MYSQL AND DATA SCIENCE QUERIES AND VISUALIZATION WITH PYTHON GUI In this project you will write Python script to create every table and insert rows of data into each of them You will

develop GUI with PyQt5 to each table in the database You will also create GUI to plot case distribution of film release year film rating rental duration and categorize film length plot rating variable against rental_duration variable in stacked bar plots plot length variable against rental_duration variable in stacked bar plots read payment table plot case distribution of Year Day Month Week and Quarter of payment plot which year month week days of week and quarter have most payment amount read film list by joining five tables category film_category film_actor film and actor plot case distribution of top 10 and bottom 10 actors plot which film title have least and most sales plot which actor have least and most sales plot which film category have least and most sales plot case distribution of top 10 and bottom 10 overdue costumers plot which customer have least and most overdue days plot which store have most sales plot average payment amount by month with mean and EWM and plot payment amount over June 2005 This project uses the Sakila sample database which is a fictitious database designed to represent a DVD rental store The tables of the database include film film_category actor film_actor customer rental payment and inventory among others You can download the MySQL from <https://dev.mysql.com/doc/sakila/en>

PROJECT 3 MYSQL FOR DATA ANALYSIS AND VISUALIZATION WITH PYTHON GUI

In this project you will use the Northwind database which is a sample database that was originally created by Microsoft and used as the basis for their tutorials in a variety of database products for decades The Northwind database contains the sales data for a fictitious company called Northwind Traders which imports and exports specialty foods from around the world The Northwind database is an excellent tutorial schema for a small business ERP with customers orders inventory purchasing suppliers shipping employees and single entry accounting The Northwind dataset includes sample data for the following Suppliers Suppliers and vendors of Northwind Customers Customers who buy products from Northwind Employees Employee details of Northwind traders Products Product information Shippers The details of the shippers who ship the products from the traders to the end customers Orders and Order_Details Sales Order transactions taking place between the customers the distribution of amount by year quarter month week day and hour the distribution of bottom 10 sales by product top 10 sales by product bottom 10 sales by customer top 10 sales by customer bottom 10 sales by supplier top 10 sales by supplier bottom 10 sales by customer country top 10 sales by customer country bottom 10 sales by supplier country top 10 sales by supplier country average amount by month with mean and ewm average amount by every month amount feature over June 1997 amount feature over 1998 and all amount feature

PROJECT 4 SQLITE FOR DATA ANALYSIS AND VISUALIZATION WITH PYTHON GUI

In this project you will use SQLite version of Northwind database which is a sample database that was originally created by Microsoft and used as the basis for their tutorials in a variety of database products for decades The Northwind database contains the sales data for a fictitious company called Northwind Traders which imports and exports specialty foods from around the world The Northwind database is an excellent tutorial schema for a small business ERP with customers orders inventory purchasing suppliers shipping employees and single entry accounting The Northwind dataset includes sample data

for the following Suppliers Suppliers and vendors of Northwind Customers Customers who buy products from Northwind Employees Employee details of Northwind traders Products Product information Shippers The details of the shippers who ship the products from the traders to the end customers Orders and Order_Details Sales Order transactions taking place between the customers the distribution of amount by year quarter month week day and hour the distribution of bottom 10 sales by product top 10 sales by product bottom 10 sales by customer top 10 sales by customer bottom 10 sales by supplier top 10 sales by supplier bottom 10 sales by customer country top 10 sales by customer country bottom 10 sales by supplier country top 10 sales by supplier country average amount by month with mean and ewm average amount by every month amount feature over June 1997 amount feature over 1998 and all amount feature

DATA SCIENCE WITH MYSQL, SQLITE, POSTGRESQL, AND SQL SERVER USING PYTHON GUI Vivian Siahaan, Rismon Hasiholan Sianipar, 2022-10-03 Book 1

MYSQL AND DATA SCIENCE QUERIES AND VISUALIZATION WITH PYTHON GUI In this project you will write Python script to create every table and insert rows of data into each of them You will develop GUI with PyQt5 to each table in the database You will also create GUI to plot case distribution of film release year film rating rental duration and categorize film length plot rating variable against rental_duration variable in stacked bar plots plot length variable against rental_duration variable in stacked bar plots read payment table plot case distribution of Year Day Month Week and Quarter of payment plot which year month week days of week and quarter have most payment amount read film list by joining five tables category film_category film_actor film and actor plot case distribution of top 10 and bottom 10 actors plot which film title have least and most sales plot which actor have least and most sales plot which film category have least and most sales plot case distribution of top 10 and bottom 10 overdue costumers plot which customer have least and most overdue days plot which store have most sales plot average payment amount by month with mean and EWM and plot payment amount over June 2005 This project uses the Sakila sample database which is a fictitious database designed to represent a DVD rental store The tables of the database include film film_category actor film_actor customer rental payment and inventory among others You can download the MySQL from <https://dev.mysql.com/doc/sakila/en> Book 2

SQLITE FOR DATA ANALYST AND DATA SCIENTIST WITH PYTHON GUI In this project we will use the SQLite version of BikeStores database as a sample database to help you work with MySQL quickly and effectively The stores table includes the store s information Each store has a store name contact information such as phone and email and an address including street city state and zip code The staffs table stores the essential information of staffs including first name last name It also contains the communication information such as email and phone A staff works at a store specified by the value in the store_id column A store can have one or more staffs A staff reports to a store manager specified by the value in the manager_id column If the value in the manager_id is null then the staff is the top manager If a staff no longer works for any stores the value in the active column is set to zero The categories table stores the bike s categories such as children bicycles comfort bicycles and electric bikes The products table

stores the product's information such as name brand category model year and list price. Each product belongs to a brand specified by the `brand_id` column. Hence a brand may have zero or many products. Each product also belongs to a category specified by the `category_id` column. Also each category may have zero or many products. The customers table stores customer's information including first name last name phone email street city state zip code and photo path. The orders table stores the sales order's header information including customer order status order date required date shipped date. It also stores the information on where the sales transaction was created store and who created it staff. Each sales order has a row in the `sales_orders` table. A sales order has one or many line items stored in the `order_items` table. The `order_items` table stores the line items of a sales order. Each line item belongs to a sales order specified by the `order_id` column. A sales order line item includes product order quantity list price and discount. The stocks table stores the inventory information i.e. the quantity of a particular product in a specific store.

Book 3 ZERO TO MASTERY THE COMPLETE GUIDE TO LEARNING POSTGRESQL WITH PYTHON GUI

This book uses the PostgreSQL version of MySQL based Northwind database. The Northwind database is a sample database that was originally created by Microsoft and used as the basis for their tutorials in a variety of database products for decades. The Northwind database contains the sales data for a fictitious company called Northwind Traders which imports and exports specialty foods from around the world. The Northwind database is an excellent tutorial schema for a small business ERP with customers orders inventory purchasing suppliers shipping employees and single entry accounting. The Northwind database has since been ported to a variety of non Microsoft databases including PostgreSQL. The Northwind dataset includes sample data for the following:

- Suppliers: Suppliers and vendors of Northwind.
- Customers: Customers who buy products from Northwind.
- Employees: Employee details of Northwind traders.
- Products: Product information.
- Shippers: The details of the shippers who ship the products from the traders to the end customers.
- Orders and Order_Details: Sales Order transactions taking place between the customers, the distribution of amount by year, quarter, month, week, day, and hour; the distribution of bottom 10 sales by product, top 10 sales by product, bottom 10 sales by customer, top 10 sales by customer, bottom 10 sales by supplier, top 10 sales by supplier, bottom 10 sales by customer country, top 10 sales by customer country, bottom 10 sales by supplier country, top 10 sales by supplier country; average amount by month with mean and ewm, average amount by every month, amount feature over June 1997, amount feature over 1998, and all amount feature.

Book 4 ZERO TO MASTERY THE COMPLETE GUIDE TO LEARNING SQL SERVER AND DATA SCIENCE WITH PYTHON GUI

In this project we provide you with a SQL SERVER version of an Oracle sample database named OT which is based on a global fictitious company that sells computer hardware including storage, motherboard, RAM, video card, and CPU. The company maintains the product information such as name, description, standard cost, list price, and product line. It also tracks the inventory information for all products including warehouses where products are available. Because the company operates globally, it has warehouses in various locations around the world. The company records all customer

information including name address and website Each customer has at least one contact person with detailed information including name email and phone The company also places a credit limit on each customer to limit the amount that customer can owe Whenever a customer issues a purchase order a sales order is created in the database with the pending status When the company ships the order the order status becomes shipped In case the customer cancels an order the order status becomes canceled In addition to the sales information the employee data is recorded with some basic information such as name email phone job title manager and hire date In this project you will write Python script to create every table and insert rows of data into each of them You will develop GUI with PyQt5 to each table in the database You will also create GUI to plot case distribution of order date by year quarter month week and day the distribution of amount by year quarter month week day and hour the distribution of bottom 10 sales by product top 10 sales by product bottom 10 sales by customer top 10 sales by customer bottom 10 sales by category top 10 sales by category bottom 10 sales by status top 10 sales by status bottom 10 sales by customer city top 10 sales by customer city bottom 10 sales by customer state top 10 sales by customer state average amount by month with mean and EWM average amount by every month amount feature over June 2016 amount feature over 2017 and amount payment in all years

Hands-On Guide To IMAGE CLASSIFICATION Using Scikit-Learn, Keras, And TensorFlow with PYTHON GUI Vivian Siahaan, 2023-06-20 In this book implement deep learning on detecting face mask classifying weather and recognizing flower using TensorFlow Keras Scikit Learn OpenCV Pandas NumPy and other libraries In chapter 1 you will learn how to use TensorFlow Keras Scikit Learn OpenCV Pandas NumPy and other libraries to perform detecting face mask using Face Mask Detection Dataset provided by Kaggle <https://www.kaggle.com/omkargurav/face-mask-dataset-download> Here s an overview of the steps involved in detecting face masks using the Face Mask Detection Dataset Import the necessary libraries Import the required libraries like TensorFlow Keras Scikit Learn OpenCV Pandas and NumPy Load and preprocess the dataset Load the dataset and perform any necessary preprocessing steps such as resizing images and converting labels into numeric representations Split the dataset Split the dataset into training and testing sets using the `train_test_split` function from Scikit Learn This will allow us to evaluate the model s performance on unseen data Data augmentation optional Apply data augmentation techniques to artificially increase the size and diversity of the training set Techniques like rotation zooming and flipping can help improve the model s generalization Build the model Create a Convolutional Neural Network CNN model using TensorFlow and Keras Design the architecture of the model including the number and type of layers Compile the model Compile the model by specifying the loss function optimizer and evaluation metrics This prepares the model for training Train the model Train the model on the training dataset Adjust the hyperparameters such as the learning rate and number of epochs to achieve optimal performance Evaluate the model Evaluate the trained model on the testing dataset to assess its performance Calculate metrics such as accuracy precision recall and F1 score Make predictions Use the trained model to make predictions on new images or video

streams Apply the face mask detection algorithm to identify whether a person is wearing a mask or not Visualize the results Visualize the predictions by overlaying bounding boxes or markers on the images or video frames to indicate the presence or absence of face masks In chapter 2 you will learn how to use TensorFlow Keras Scikit Learn OpenCV Pandas NumPy and other libraries to perform how to classify weather using Multi class Weather Dataset provided by Kaggle <https://www.kaggle.com/pratik2901/multiclass-weather-dataset-download> To classify weather using the Multi class Weather Dataset from Kaggle you can follow these general steps Load the dataset Use libraries like Pandas or NumPy to load the dataset into memory Explore the dataset to understand its structure and the available features Preprocess the data Perform necessary preprocessing steps such as data cleaning handling missing values and feature engineering This may include resizing images if the dataset contains images or encoding categorical variables Split the data Split the dataset into training and testing sets The training set will be used to train the model and the testing set will be used for evaluating its performance Build a model Utilize TensorFlow and Keras to define a suitable model architecture for weather classification The choice of model depends on the type of data you have For image data convolutional neural networks CNNs often work well Train the model Train the model using the training data Use appropriate training techniques like gradient descent and backpropagation to optimize the model's weights Evaluate the model Evaluate the trained model's performance using the testing data Calculate metrics such as accuracy precision recall or F1 score to assess how well the model performs Fine tune the model If the model's performance is not satisfactory you can experiment with different hyperparameters architectures or regularization techniques to improve its performance This process is called model tuning Make predictions Once you are satisfied with the model's performance you can use it to make predictions on new unseen data Provide the necessary input e.g. an image or weather features to the trained model and it will predict the corresponding weather class In chapter 3 you will learn how to use TensorFlow Keras Scikit Learn OpenCV Pandas NumPy and other libraries to perform how to recognize flower using Flowers Recognition dataset provided by Kaggle <https://www.kaggle.com/alxmamaev/flowers-recognition-download> Here are the general steps involved in recognizing flowers Data Preparation Download the Flowers Recognition dataset from Kaggle and extract the contents Import the required libraries and define the dataset path and image dimensions Loading and Preprocessing the Data Load the images and their corresponding labels from the dataset Resize the images to a specific dimension Perform label encoding on the flower labels and split the data into training and testing sets Normalize the pixel values of the images Building the Model Define the architecture of your model using TensorFlow's Keras API You can choose from various neural network architectures such as CNNs ResNet or InceptionNet The model architecture should be designed to handle image inputs and output the predicted flower class Compiling and Training the Model Compile the model by specifying the loss function optimizer and evaluation metrics Common choices include categorical cross entropy loss and the Adam optimizer Train the model using the training set and validate it using the testing set Adjust the hyperparameters such

as the learning rate and number of epochs to improve performance

Model Evaluation Evaluate the trained model on the testing set to measure its performance Calculate metrics such as accuracy precision recall and F1 score to assess how well the model is recognizing flower classes

Prediction Use the trained model to predict the flower class for new images Load and preprocess the new images in a similar way to the training data Pass the preprocessed images through the trained model and obtain the predicted flower class labels

Further Improvements If the model's performance is not satisfactory consider experimenting with different architectures hyperparameters or techniques such as data augmentation or transfer learning Fine tuning the model or using ensembles of models can also improve accuracy

ANALYSIS AND PREDICTION PROJECTS USING MACHINE LEARNING AND DEEP LEARNING WITH PYTHON Vivian Siahaan, Rismon Hasiholan Sianipar, 2022-02-17

PROJECT 1 DEFAULT LOAN PREDICTION BASED ON CUSTOMER BEHAVIOR Using Machine Learning and Deep Learning with Python In finance default is failure to meet the legal obligations or conditions of a loan for example when a home buyer fails to make a mortgage payment or when a corporation or government fails to pay a bond which has reached maturity A national or sovereign default is the failure or refusal of a government to repay its national debt The dataset used in this project belongs to a Hackathon organized by Univ AI All values were provided at the time of the loan application Following are the features in the dataset Income Age Experience Married Single House_Ownership Car_Ownership Profession CITY STATE CURRENT_JOB_YRS CURRENT_HOUSE_YRS and Risk_Flag The Risk_Flag indicates whether there has been a default in the past or not The machine learning models used in this project are K Nearest Neighbor Random Forest Naive Bayes Logistic Regression Decision Tree Support Vector Machine Adaboost LGBM classifier Gradient Boosting XGB classifier MLP classifier and CNN 1D Finally you will plot boundary decision ROC distribution of features feature importance cross validation score and predicted values versus true values confusion matrix learning curve performance of the model scalability of the model training loss and training accuracy

PROJECT 2 AIRLINE PASSENGER SATISFACTION Analysis and Prediction Using Machine Learning and Deep Learning with Python The dataset used in this project contains an airline passenger satisfaction survey In this case you will determine what factors are highly correlated to a satisfied or dissatisfied passenger and predict passenger satisfaction Below are the features in the dataset Gender Gender of the passengers Female Male Customer Type The customer type Loyal customer disloyal customer Age The actual age of the passengers Type of Travel Purpose of the flight of the passengers Personal Travel Business Travel Class Travel class in the plane of the passengers Business Eco Eco Plus Flight distance The flight distance of this journey Inflight wifi service Satisfaction level of the inflight wifi service 0 Not Applicable 1 5 Departure Arrival time convenient Satisfaction level of Departure Arrival time convenient Ease of Online booking Satisfaction level of online booking Gate location Satisfaction level of Gate location Food and drink Satisfaction level of Food and drink Online boarding Satisfaction level of online boarding Seat comfort Satisfaction level of Seat comfort Inflight entertainment Satisfaction level of inflight entertainment On board service Satisfaction level of On

board service Leg room service Satisfaction level of Leg room service Baggage handling Satisfaction level of baggage handling Check in service Satisfaction level of Check in service Inflight service Satisfaction level of inflight service Cleanliness Satisfaction level of Cleanliness Departure Delay in Minutes Minutes delayed when departure Arrival Delay in Minutes Minutes delayed when Arrival and Satisfaction Airline satisfaction level Satisfaction neutral or dissatisfaction The machine learning models used in this project are K Nearest Neighbor Random Forest Naive Bayes Logistic Regression Decision Tree Support Vector Machine LGBM classifier Gradient Boosting XGB classifier MLP classifier and CNN 1D Finally you will plot boundary decision ROC distribution of features feature importance cross validation score and predicted values versus true values confusion matrix learning curve performance of the model scalability of the model training loss and training accuracy

PROJECT 3 CREDIT CARD CHURNING CUSTOMER ANALYSIS AND PREDICTION USING MACHINE LEARNING AND DEEP LEARNING WITH PYTHON The dataset used in this project consists of more than 10 000 customers mentioning their age salary marital_status credit card limit credit card category etc There are 20 features in the dataset In the dataset there are only 16 07% of customers who have churned Thus it s a bit difficult to train our model to predict churning customers Following are the features in the dataset Attrition_Flag Customer_Age Gender Dependent_count Education_Level Marital_Status Income_Category Card_Category Months_on_book Total_Relationship_Count Months_Inactive_12_mon Contacts_Count_12_mon Credit_Limit Total_Revolving_Bal Avg_Open_To_Buy Total_Amt_Chng_Q4_Q1 Total_Trans_Amt Total_Trans_Ct Total_Ct_Chng_Q4_Q1 and Avg_Utilization_Ratio The target variable is Attrition_Flag The machine learning models used in this project are K Nearest Neighbor Random Forest Naive Bayes Logistic Regression Decision Tree Support Vector Machine LGBM classifier Gradient Boosting XGB classifier MLP classifier and CNN 1D Finally you will plot boundary decision ROC distribution of features feature importance cross validation score and predicted values versus true values confusion matrix learning curve performance of the model scalability of the model training loss and training accuracy

PROJECT 4 MARKETING ANALYSIS AND PREDICTION USING MACHINE LEARNING AND DEEP LEARNING WITH PYTHON This data set was provided to students for their final project in order to test their statistical analysis skills as part of a MSc in Business Analytics It can be utilized for EDA Statistical Analysis and Visualizations Following are the features in the dataset ID Customer s unique identifier Year_Birth Customer s birth year Education Customer s education level Marital_Status Customer s marital status Income Customer s yearly household income Kidhome Number of children in customer s household Teenhome Number of teenagers in customer s household Dt_Customer Date of customer s enrollment with the company Recency Number of days since customer s last purchase MntWines Amount spent on wine in the last 2 years MntFruits Amount spent on fruits in the last 2 years MntMeatProducts Amount spent on meat in the last 2 years MntFishProducts Amount spent on fish in the last 2 years MntSweetProducts Amount spent on sweets in the last 2 years MntGoldProds Amount spent on gold in the last 2 years NumDealsPurchases Number of purchases

made with a discount NumWebPurchases Number of purchases made through the company s web site NumCatalogPurchases Number of purchases made using a catalogue NumStorePurchases Number of purchases made directly in stores NumWebVisitsMonth Number of visits to company s web site in the last month AcceptedCmp3 1 if customer accepted the offer in the 3rd campaign 0 otherwise AcceptedCmp4 1 if customer accepted the offer in the 4th campaign 0 otherwise AcceptedCmp5 1 if customer accepted the offer in the 5th campaign 0 otherwise AcceptedCmp1 1 if customer accepted the offer in the 1st campaign 0 otherwise AcceptedCmp2 1 if customer accepted the offer in the 2nd campaign 0 otherwise Response 1 if customer accepted the offer in the last campaign 0 otherwise Complain 1 if customer complained in the last 2 years 0 otherwise and Country Customer s location The machine and deep learning models used in this project are K Nearest Neighbor Random Forest Naive Bayes Logistic Regression Decision Tree Support Vector Machine LGBM classifier Gradient Boosting XGB classifier MLP classifier and CNN 1D Finally you will plot boundary decision ROC distribution of features feature importance cross validation score and predicted values versus true values confusion matrix learning curve performance of the model scalability of the model training loss and training accuracy

PROJECT 5 METEOROLOGICAL DATA ANALYSIS AND PREDICTION USING MACHINE LEARNING WITH PYTHON Meteorological phenomena are described and quantified by the variables of Earth s atmosphere temperature air pressure water vapour mass flow and the variations and interactions of these variables and how they change over time Different spatial scales are used to describe and predict weather on local regional and global levels The dataset used in this project consists of meteorological data with 96453 total number of data points and with 11 attributes columns Following are the columns in the dataset Formatted Date Summary Precip Type Temperature C Apparent Temperature C Humidity Wind Speed km h Wind Bearing degrees Visibility km Pressure millibars and Daily Summary The machine learning models used in this project are K Nearest Neighbor Random Forest Naive Bayes Logistic Regression Decision Tree Support Vector Machine LGBM classifier Gradient Boosting XGB classifier and MLP classifier Finally you will plot boundary decision distribution of features feature importance cross validation score and predicted values versus true values confusion matrix learning curve performance of the model scalability of the model training loss and training accuracy

TRAVEL REVIEW RATING CLASSIFICATION AND PREDICTION USING MACHINE LEARNING WITH PYTHON GUI Vivian Siahaan,Rismon Hasiholan Sianipar,2022-04-05 The dataset used in this project has been sourced from the Machine Learning Repository of University of California Irvine UC Irvine Travel Review Ratings Data Set This dataset is populated by capturing user ratings from Google reviews Reviews on attractions from 24 categories across Europe are considered Google user rating ranges from 1 to 5 and average user rating per category is calculated The attributes in the dataset are as follows Attribute 1 Unique user id Attribute 2 Average ratings on churches Attribute 3 Average ratings on resorts Attribute 4 Average ratings on beaches Attribute 5 Average ratings on parks Attribute 6 Average ratings on theatres Attribute 7 Average ratings on museums Attribute 8 Average ratings on malls

Attribute 9 Average ratings on zoo Attribute 10 Average ratings on restaurants Attribute 11 Average ratings on pubs bars
Attribute 12 Average ratings on local services Attribute 13 Average ratings on burger pizza shops Attribute 14 Average
ratings on hotels other lodgings Attribute 15 Average ratings on juice bars Attribute 16 Average ratings on art galleries
Attribute 17 Average ratings on dance clubs Attribute 18 Average ratings on swimming pools Attribute 19 Average ratings on
gyms Attribute 20 Average ratings on bakeries Attribute 21 Average ratings on beauty Attribute 22 Average ratings on cafes
Attribute 23 Average ratings on view points Attribute 24 Average ratings on monuments and Attribute 25 Average ratings on
gardens The models used in this project are K Nearest Neighbor Random Forest Naive Bayes Logistic Regression Decision
Tree Support Vector Machine Adaboost LGBM classifier Gradient Boosting XGB classifier and MLP classifier Three feature
scaling used in machine learning are raw minmax scaler and standard scaler Finally you will develop a GUI using PyQt5 to
plot cross validation score predicted values versus true values confusion matrix learning curve decision boundaries
performance of the model scalability of the model training loss and training accuracy

FULL SOURCE CODE:

POSTGRESQL FOR DATA ANALYTICS AND VISUALIZATION WITH PYTHON GUI Vivian Siahaan, Rismon Hasiholan
Sianipar, 2022-09-13 In this project we provide you with a PostgreSQL version of an Oracle sample database named OT which
is based on a global fictitious company that sells computer hardware including storage motherboard RAM video card and
CPU The company maintains the product information such as name description standard cost list price and product line It
also tracks the inventory information for all products including warehouses where products are available Because the
company operates globally it has warehouses in various locations around the world The company records all customer
information including name address and website Each customer has at least one contact person with detailed information
including name email and phone The company also places a credit limit on each customer to limit the amount that customer
can owe Whenever a customer issues a purchase order a sales order is created in the database with the pending status When
the company ships the order the order status becomes shipped In case the customer cancels an order the order status
becomes canceled In addition to the sales information the employee data is recorded with some basic information such as
name email phone job title manager and hire date In this project you will write Python script to create every table and insert
rows of data into each of them You will develop GUI with PyQt5 to each table in the database You will also create GUI to plot
case distribution of order date by year quarter month week and day the distribution of amount by year quarter month week
day and hour the distribution of bottom 10 sales by product top 10 sales by product bottom 10 sales by customer top 10 sales
by customer bottom 10 sales by category top 10 sales by category bottom 10 sales by status top 10 sales by status bottom 10
sales by customer city top 10 sales by customer city bottom 10 sales by customer state top 10 sales by customer state
average amount by month with mean and EWM average amount by every month amount feature over June 2016 amount
feature over 2017 and amount payment in all years

FULL SOURCE CODE: POSTGRESQL AND DATA SCIENCE FOR

PROGRAMMERS WITH PYTHON GUI Vivian Siahaan, Rismon Hasiholan Sianipar, 2022-09-19 This project uses the PostgreSQL version of MySQL based Sakila sample database which is a fictitious database designed to represent a DVD rental store. The tables of the database include film, film_category, actor, film_actor, customer, rental, payment, and inventory among others. You can download the database from <https://dev.mysql.com/doc/sakila/en/>. In this project, you will write Python script to create every table and insert rows of data into each of them. You will develop GUI with PyQt5 to each table in the database. You will also create GUI to plot case distribution of film release year, film rating, rental duration, and categorize film length. Plot rating variable against rental_duration variable in stacked bar plots. Plot length variable against rental_duration variable in stacked bar plots. Read payment table. Plot case distribution of Year, Day, Month, Week, and Quarter of payment. Plot which year, month, week, days of week, and quarter have most payment amount. Read film list by joining five tables: category, film_category, film_actor, film, and actor. Plot case distribution of top 10 and bottom 10 actors. Plot which film title have least and most sales. Plot which actor have least and most sales. Plot which film category have least and most sales. Plot case distribution of top 10 and bottom 10 overdue customers. Plot which store have most sales. Plot average payment amount by month with mean and EWM and plot payment amount over June 2005.

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