Q1

Video game sales data (https://www.kaggle.com/gregorut/videogamesales), consisting of rank, genre, publisher, and global sales amount (in millions) worldwide. Using Python create a Pie chart and find out which genre accounts for a high portion of global sales in a video game. This would help understand the potential needs of the video game that will be published by the company.

Q2

BIKE SHARING DEMAND

Rental bikes have gained more popularity these days due to their flexibility, mobility, low cost, and health benefits in urban cities. Understanding the demand for rental bikes is essential to estimate rental bikes' availability over various time periods and locations. Demand information can also help to allocate the optimal amount of supply of rental bikes. These factors could be critically related to customer satisfaction and traffic

Here are the explanations of each variable of Dataset

Date: Year – Month – Day
Rented Bike Count: number of bokes rented per hour
Temperature: Temperature in Celsius
Rainfall: Rainfall in mm
Seasons: Winter, Spring, Summer, and Autumn
Holiday: Holiday and no holiday

Create a Visualization using python

The line charts of rented bike count over the months.
The line charts of temperature over the months.
The pie chart of rented bike count by seasons.
The stacked bar chart of rented bike count by the holiday.
The scatter plot of rented bike count and temperature.
The scatter plot of rented bike count and rainfall.

Answer following Questions:
1. What is the trend of rented bike count over the months?
2. Which seasons show greater demand for the rented bike than other seasons?
3. Is the demand for rented bikes affected by the holiday season?
4. Is there a relationship between the rented bike demand and temperature?
5. Is there a relationship between the rented bike demand and the amount of rainfall?

Bicycle rental companies can monitor this dashboard to predict the rented bikes' demand and find appropriate counter measures.

Through the dashboard analysis, stakeholders can think of the following questions and find solutions to them.

• Does the demand for bicycle rental vary by season?
• What is the difference between the monthly demand for bike rental?
• Is the demand for bike rental affected by holidays?

Q3
REAL TIME VOICE CALL QUALITY DATA FROM CUSTOMERS

Since 2000, mobile phones have spread rapidly, and since 2010, many people use data communication through smartphones. Voice communication is the most basic service in the mobile communication business and understanding the quality and the performance of voice calls is critical to ensuring great customer experiences. Bad call experiences lead to frustrated customers, lost customer relationships, and have a real financial impact on businesses. However, measuring call quality was not an easy part for mobile carriers since users' subjective factors are reflected a lot. Thus, mobile communication companies have used customer survey techniques to check call quality, continue to monitor, and trace call performance to improve service quality based on the survey data.

The data set in this case captures the Customers Feedback using the MyCAll App developed by TRAI (Telecom regulatory authority of India) which is a statutory body set up by the Government of India

The data is captured for various service providers in India, at multiple locations, network types 2G, 3G, 4G, ratings, coordinates, etc. Customers rate their experience with voice call quality in real-time and help TRAI gather customer experience data along with Network data.

The Variable and Description of the Voice Call Quality Data

Operator	Telecom service provider
Indoor_Outdoor_Travelling	The location status information when users rate service quality
Network Type	The type of Network and standard for telecommunication

Rating	Quality rated by customers (0: lowest quality; 5: highest quality)
Call Drop Category	Reported data If a call is dropped (call drop issue)
Latitude	Geographic coordinate located when the quality was rated
Longitude	Geographic coordinate located when the quality was rated
State	Name Location information

Create Data visualization using python for:

Vertical bar chart of average call quality rate per operator.

The vertical bar chart of the quality level per each state in India.

The vertical bar chart showing the relationship between the call quality and the network type.

Horizontal bar chart of average call quality rate per Call Drop Category

Heat map   between   state , Network Type   and rating.

Vertical bar chart of average call quality rate per Indoor_Outdoor_Travelling .

Answer the following Questions
1. What is the level of overall call quality? (by the operator,by the network.
2. Which operators provide low-value services?
3. What is the frequency of poor quality calls?
4. Based on the analysis results, what are the suggestions to improve call quality?