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In [9]: import pandas as pd
        from scipy.stats import zscore
        import matplotlib.pyplot as plt

        # Step 1: Load the dataset
        file_path = r"C:\Users\exam\Downloads\archive (2)\supermarket_sales - Sheet1.csv"
        data = pd.read_csv(file_path)

        # Step 2: Combine 'Date' and 'Time' into a single datetime column and set as index
        data['Datetime'] = pd.to_datetime(data['Date'] + ' ' + data['Time'])
        data.set_index('Datetime', inplace=True)
        data.drop(['Date', 'Time'], axis=1, inplace=True)

        # Step 3: Select numerical columns only and resample to daily frequency
        numerical_columns = data.select_dtypes(include=['float64', 'int64']).columns
        data_daily = data[numerical_columns].resample('D').sum()

        # Step 4: Detect and remove outliers based on the z-score (e.g., 'Total' column)
        data_daily['z_score_total'] = zscore(data_daily['Total'], nan_policy='omit')
        data_cleaned = data_daily[abs(data_daily['z_score_total']) <= 3].drop(columns='z_score_total')

        # Visualization: Plot the 'Total' column over time
        plt.figure(figsize=(12, 6))
        plt.plot(data_cleaned.index, data_cleaned['Total'], color='blue', label='Total Sales')
        plt.title('Total Sales Over Time (Cleaned Data)', fontsize=16)
        plt.xlabel('Date', fontsize=12)
        plt.ylabel('Total Sales', fontsize=12)
        plt.grid(True)
        plt.legend()
        plt.show

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Out[9]: <function matplotlib.pyplot.show(close=None, block=None)>

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