**df = pd.read\_csv**

This line reads a CSV file containing sales data into a Pandas DataFrame df.

**df = df[(df != 0).all(axis=1)]:** This line removes rows from the DataFrame df where any column contains a zero value

If any value in a row is zero, that row is excluded from df.

**df.groupby(['product\_id', 'sales\_week of year'])**: This part groups the DataFrame df by two columns: product\_id and sales\_week of year. It means that the data will be organized into groups where each unique combination of product\_id and sales\_week of year forms a group.

**['sales\_product\_quantity'].mean()**: Within each group, it selects the sales\_product\_quantity column and calculates the mean (average) value of this column. So, for each group defined by product\_id and sales\_week of year, it computes the average sales quantity.

**.reset\_index():** After computing the mean, this method resets the index of the resulting DataFrame. This is typically done to convert the group labels (product\_id and sales\_week of year) from indices back into columns.

**avg\_sales['sales\_product\_quantity']**: This selects the column sales\_product\_quantity from the avg\_sales DataFrame.

**.astype(float):** This method converts the data type of the selected column to float.

**avg\_sales.columns**: This property accesses the column names of the avg\_sales DataFrame.

**print(avg\_sales.head())** : .head() is a method that returns the first 5 rows. When you run print(avg\_sales.head()), it will print the first 5 rows of the avg\_sales.

**avg\_sales['product\_id'] = avg\_sales['product\_id'] / avg\_sales['product\_id'].max()** : This calculates the maximum value in the product\_id column and divides each value in the product\_id column by the maximum value found in that column. The result is that each value in the product\_id column is transformed to a value between 0 and 1.

**avg\_sales['sales\_week of year'] = avg\_sales['sales\_week of year'] / avg\_sales['sales\_week of year'].max()** : This calculates the maximum value in the sales\_week of year column and divides each value in the sales\_week of year column by the maximum value found in that column.

**avg\_sales[['product\_id', 'sales\_week of year']].values** : This selects two columns, product\_id and sales\_week of year. .values converts the selected columns into a NumPy array.

**avg\_sales['avg\_sales\_product\_quantity'].values** : This selects a column product quantity in avg\_sales Dataframe. .values converts the selected columns into a NumPy array.