* **For this project, follow the OOP methodology for each of the problem statements**
* Use the methods / functions effectively for faster execution

1. For the following tasks, use the dataset “**storesales.csv**”

|  |  |
| --- | --- |
| **S.No** | **Problem statement** |
| 1 | Replicate the functionality of SQL ROW\_NUMBER() windows function |
| 2 | Replicate the functionality of SQL RANK() windows function |
| 3 | Replicate the functionality of SQL DENSE\_RANK() windows function |
| 4 | Replicate the functionality of SQL LAG() windows function |
| 5 | Replicate the functionality of SQL LEAD() windows function |

1. **Simulation of Inventory transaction**

**Introduction**

A store has an inventory of products which has a variety of Categories and Sub-categories.

The store has sales details for each of the product sub-categories. The sum total of sales of the sub-categories indicates the total sales of a category.

Create a small application that will simulate the above inventory transactions.

**Things to do**

* **Create sample product categories and its total sales as follows:**

|  |  |
| --- | --- |
| **Category** | **Total Sales** |
| Furniture | 58578.25 |
| Sports | 39743.95 |
| Food | 73104.65 |

* **Create sub-categories for each of the categories as follows:**

|  |  |
| --- | --- |
| **Category** | **Sub-category** |
| Furniture | chairs, tables, wardrobe, beds, couch, antique, storage |
| Sports | shoes, bags, backpack, bottles, towels |
| Food | chips, bread, chocolate, biscuits, rice, wheat, sugar, flour |

* **Assign random prices**
* For every subcategory, **create random sale prices** such that their total equals to the Total\_Sales value of its corresponding category.

**e.g:** The initial total\_sales value for *Furniture* is 58578.25. The sale prices of its

subcategories viz. *chairs, tables, wardrobe, beds, couch, storage* should add up to

58578.25

* Repeat it for all the other sub-categories
* DO NOT HARDCODE the sale prices
* DO NOT take equal weightage for prices
* **Simulate transactions (sale of a sub-category product)**
* A new product is sold. Update the subcategory and category sales details accordingly
* Display the updated prices
* **To print the total sales of a given product category**
* **To print the total sales of a given product sub-category**

**❖❖❖**