LOW LEVEL DESIGN

E-Commerce Dashboard

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DOCUMENT CONTROL

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Contents

1. Introduction

1.1 What is Low-Level design document?

The goal of the LDD or Low-level design document (LLDD) is to give the internal logic design of the actual program code for the E-Commerce Sales dashboard. LDD describes the class diagrams with the methods and relations between classes and programs specs. It describes the modules so that the programmer can directly encrypt the program from the document

1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-by-step Refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

Architecture

DATA SOURCE

File s

DATA CONNECTOR

Spreadshe et

Exc el

MAIN COMPONENT

Combo Box

GATEWAY

Gateway

CLIENT

Dashboard

3. Architecture Description

3.1. Data Description

1. Ageing: Number of Days to Shipping Days. It is the difference between Order Date and Delivery Date.
2. Months: Month in which the order is executed completely.
3. Product Category: Category of the product ordered.
4. Sales: Sale value of the product.
5. Profit: Profit Earned on the ordered product.
6. Region: Region in which the order is shipped.

3.2. Data Transformation

In the Transformation Process, we will convert our original datasets with other necessary attributes format.

3.3. Data Insertion into Database

a. Database Creation and connection - Create a database with name passed. If the database is already created, open the connection to the database.

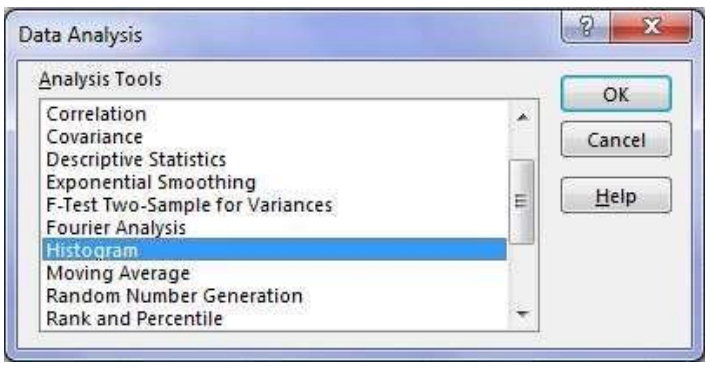
b. Insertion of files in the table

3.4. Set up the data source

Step1: **Create Histogram for Shipping Days(Aging)**

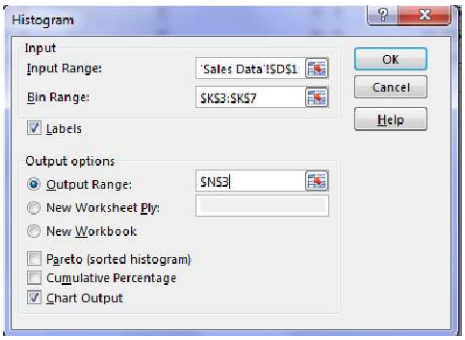
To create histogram, click the Data Tab, Under Analysis Group (Right Corner), Click Data Analysis.

Now, select Histogram and click ok. A histogram dialog box will appear.



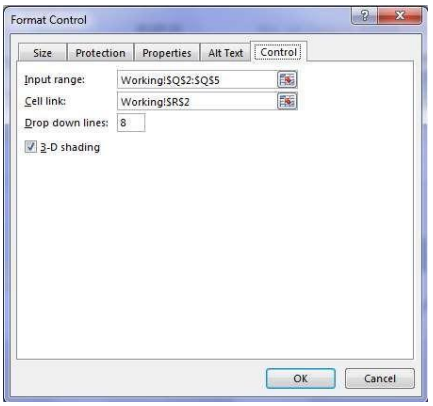
In the histogram dialog box, first click the Label's Check box as we have labels in our data. After that, In the **Input reference box** select the range **("Sales Data!D1:D51291")** of our data and in the **Bin Range Reference box** select **("Working!K3:K7")**.

In **Output section**, select range “Working!N3” for binning table, click Histogram check box and then ok.



Step2 - **Create Combo Box:**

- Insert Combo box for product category list in the Dashboard Sheet.
- Click Developer Tab > Under Controls Panel > Click Combo box and draw.
  Pass the Input Range and Cell for the Combo box.
- Right-click the country list Combo box > Click Format Control > Under Format Control Panel, Pass Input Range “Working!Q2:Q5” and Cell Link “Working!R2” from the working sheet.



Now, write the offset function in cell “R3” to fetch the product category based on the selection in the product category Combo box.

- Write the equal sign and then the function name.
- Pass the first argument as Cell “$Q$1.”
- In the second argument, select the cell link cell “$R$2.”

Step3: SUMIFS formula to calculate Total Sales, Quantity, and Profit

Now, write Sumifs formula to calculate Sales, Quantity, and Profit in the Dashboard sheet. Enter the formula in Cell C7:

- Enter the equal sign and then enter the function name and open parenthesis.

- Pass the first Argument is Sum_Range, select range 'Sales Data'!$H:$H, and then enter comma.

- Now, pass the second argument Product Category column "criteria Range1" as 'Sales Data'!$F:$F, enter comma

- Pass the third argument "criteria1" "Working!$R$3", and enter comma.

Perform the same function to calculate the Quantity in Cell G7.

In G7, write the equal sign, and then enter the function name and open parenthesis.

The first Argument is Sum_Range, select range 'Sales Data'!I:I, and then enter comma.

Now, pass the second argument Product Category column "criteria Range1" as 'Sales Data'!F:F, and enter comma.

Pass the third argument "criteria1" "$R$3," and enter comma.

For Profit

In K7, write the equal sign and then enter the function name and open parenthesis.

The first Argument is Sum_Range, select range 'Sales Data'!K:K, and then enter comma.

Pass the second argument Product Category column "criteria Range1" as 'Sales Data'!F:F, and enter comma.

Now, pass the third argument "criteria1" "$R$3", and enter comma.

Step4: SUMIFS formula to calculate Sales and Profit month wise

Now write the sumifs formula to calculate the Sales and profit month-wise and sales region-wise.
Enter formula in Cell C4:

Enter the equal sign and then enter the function name and open parenthesis.

The first Argument is Sum_Range, select range 'Sales Data'!H:H, and then enter comma.

Pass the second argument month column "criteria Range1" as 'Sales Data'!U:U, and enter comma.

Now, pass the third argument "criteria1" "$B$4," and enter comma.

Pass the fourth argument as Data!F:F product category column, and enter comma

Pass the fifth argument as "$R$3."

Now, copy and paste the formula in Range C4:C15.

Enter formula in Cell D4:

Enter Equal sign then enters function name and open parenthesis

The first Argument is Sum_Range, select range 'Sales Data'!K:K, and then enter comma.

Now, pass the second argument month column "criteria Range1" as 'Sales Data'!U:U, and enter comma.

Pass the third argument "criteria1" "$B$4," and enter comma.

Pass the fourth argument as Data!F:F product category column, and enter comma.

Enter the fifth argument as "$R$3."

Now, copy and paste the formula in Range D4:D15.

Months	Sales	Profit
Jan	=SUMIFS('Sales Data'!$H$1:$H$65536,'Sales Data'!$U$1:$U$65536,'Working (2)'!$B4,'Sales Data'!$F$1:$F$65536,$R$3)	
Feb	29,776	
Mar	32,800	
Apr	33,417	
May	33,705	
Jun	30,219	
Jul	29,644	
Aug	34,088	
Sep	33,069	
Oct	39,240	
Nov	32,598	
Dec	34,902	

Regions	Sales
Canada	
Caribbean	
Central	
Central Asia	
East	
EMEA	
North	
North Asia	
Oceania	
South	
Southeast Asia	
West	

Step5: SUMIFS formula to calculate Sales region wise

Write the equal sign and then enter the function name and open parenthesis.

The first Argument is Sum_Range, select range 'Sales Data'!H:H, and then enter comma.

Pass the second argument region column "criteria Range1" as 'Sales Data'!T:T, and enter comma.

Now, pass the third argument "criteria1" "$F$4,"and enter comma.

Pass, the fourth argument as Data!F:F product category column, and enter comma.

Pass the fifth argument as "$R$3."

Now, copy and paste the formula in Range G4:G15.

Step 6: Create Column Chart

Now, create the column chart for both region-wise and month-wise table.

Select table (B3:D15), click insert tab > under Charts Panel > Insert column chart.

Cut and Paste the chart in the Dashboard Sheet.

Perform the same steps for other tables to create chart.

Now, this is our sales Dashboard, we can apply any color in the interior of cells, and data series to format it.

Note: The dataset required for this project can be accessed from the “Download Center.”

3.5. Export Data from Database

Data Export from Database - The data in a stored database is exported as a CSV file to be used for Data Pre-processing.

4. Unit Test Cases

TEST CASE DESCRPTION	EXPECTED RESULT
Product Category Combo Box	When clicked on the Combo Box, a dropdown should occur showing various product categories.
Relation between No. of orders and Ageing	Here is a Histogram is shown of No. of Orders Vs Ageing.
Relation between Month and Sales & Profit	Here is a column chart is shown of month-wise sales and profit.
Relation between Region and Sales	Here is a column chart is shown of Region-wise sales.