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**SRI LANKA INSTITUTE OF INFORMATION TECHNOLOGY**

**Data Warehouse and Business Intelligence**

**Assignment 02**

**2022**

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**Data Source for the Assignment 2**

I selected a data set of an online shopping system which includes the product details that the system has, the customer details, order details and courier details of the products which have ordered by the customers and the details of payments.

<https://www.kaggle.com/datasets/tanyadayanand/online-shopping?select=shipping.csv>

**ER diagram**

**Diagram

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**SSAS Cube Implementation**

Tools Used

* SQL Server Data Tools
* SQL Server Management Studio.

Steps

* Creating the SSAS Project
* Creating a Data Source
* Creating a Data Source View
* Creating a Cube
* Deploy the cube

**Step 1 – Creating the SSAS Project**

In SQL server data tools, I created an Analysis Services Multidimensional and Data Mining Project and named it as “OnlineShopping\_SSAS”.

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**Step 2 - Creating a Data Source**

This step is to configure a data source. Data source defines from where the cube is extracting data. I created connection to the data warehouse.

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**Step 3 – Creating a Data Source Views**

I created a new data source view after that selected all dimension tables and fact table and created table links.

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**Step 4 – Creating a Cube**

1. The data source view has created with the relevant tables in the previous section. We can use this existing data source to create the cube.
2. From the “Cube wizard” select all the measure from the “Fact Table ” fact table which is needed to include in the cube.
3. I provided cube name as “Cubes\_OnlineShopping\_DW”

Table

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Then, all the attributes were added to the dimension tables except surrogate keys.

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**Step 5 – Deploying the Cube**

Provide connection credentials and deployed the cube.

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**Step 6 – Creating a KPI**

KPI’s are created based on the business requirements. KPIs depend on what the organization want to monitor and measure.

Here, I created KPI to check the amount of products which are greater than $500.

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Created KPI can be seen in SQL Server Management Studio

**Step 7 - Creating Hierarchy**

Created hierarchy in Customer dimension.

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**Step 8 – Creating Role**

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Purpose of user roles is to provide control access and permission on who can do what.

**Step 9 – Browsing Cube Data**

General browsing (analysis) can be done via the development tool; Data Tools or in SSMS.

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**Demonstration of OLAP Operations**

Tools used:

* Microsoft Excel
* SQL Server Management Studio

**Connecting Excel to SSAS Cube using a MDX Query**

We can generate MDX query in SSAS browser.

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In excel sheet from analysis service or power pivot, we can provide connection details to connect to SSAS Server.

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Validation

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Importing

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Data was imported successfully.

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**Connecting Excel to SSAS Cube without MDX Query**

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**OLAP Operations**

**Pivot Table**

Pivot is a visualization operation which rotates the data axes in view to provide an alternative presentation of the data

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**Slice**

A new sub cube is created using a one dimension

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**SSRS Reports**

Tools Required:

* SQL Server Data Tools or Report Builder
* SQL Server Management Studio

Configure SQL Server Reporting Services

Connect to the server using credentials.

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Logging into the SSRS Web Portal

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Opening Microsoft Report Builder and creating a new data source and new data sets.

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**Report 01 – Report with Matrix**

**Table

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**Report 02 – Create an SSRS drill through report**

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