

Internship Report



Sui Southern Gas Company Ltd

Submitted by:

Name: Anand Kumar

CMS: 021-18-0018

Sukkur Institute of Business Administration University

Internship Department: Information Technology

Date: April 24, 2022, to June 6,

Executive Summary

Sui Southern Gas Company Limited SSGCL is Pakistan's leading gas company. It is engaged in the business of transmission and distribution of natural gas in the southern part of Pakistan mainly in Sindh and Baluchistan. SSGC known as Sui Gas Transmission Company Limited is a natural gas supply company based in Karachi, Pakistan. The company was initiated in 1995 and it was formed on March 30, 1989, with the merger of three pioneering companies that are Sui Gas Transmission Company Limited, Karachi Gas Company Limited, and Indus Gas Company Limited. The company also owns the only manufacturing plants of gas meters in the country and is also listed on Pakistan Stock Exchange.

It is an honor for a Pakistani resident to work and learn in such a reputable company. As I have been there to get the internship training specifically in the information technology department because of my educational background in the IT field. The IT department here at SSGCL has been working on the latest tools and technology that are being applied in the commercial markets as well. During my internship of six weeks, I have learned and explored three different sections, particularly two weeks in each section value-added services, enterprise resource planning, and customer care and billing.

Value-Added Services VAS section provides website and mobile application development facilities to the company. It also resolves queries of customers through helpline when they faced issues related to mistakenly performed operations. I have explored and learned portal management of the SSGCL website and also developed a sample website with the name SSGCL that has basic information and operations.

The Enterprise Resource Planning ERP section is used to manage the resources of the company which is an automated solution to many manual processes. SSGCL uses Oracle-based ERP which is widely used around the globe due to its customization tools. I have learned the ERP modules, implementation methodology, human resource management, and payable and receivables module from the ERP section that will help me in my career growth.

Customer Care and Billing CC&B section deals with the technical support of customer care and bill payments such as managing software and designing monthly, quarterly, and yearly reports especially for the non-technical audience. I have learned the data analysis techniques and dashboard design using the Power BI tool that is used for business intelligence.

I am very excited to share that I have spent quality time here at SSGCL and am especially thankful to the caring and loving staff of the company that helped me to learn new things during my internship journey.

ACKNOWLEDGEMENTS

All praise be to Allah, the Almighty, the Most Merciful and Compassionate who granted us perseverance to undertake and complete this report.

The work on this internship has been exciting and sometimes challenging but always an interesting experience. I am very much thankful to Mr. Jameel-ur-Rehman and Ma'am Dur-e-Shehwar from the information technology department because they facilitated me in the sections of my own choice.

It has been made possible by many other people, who have supported us. So, I would like to take this opportunity to express our sincere gratitude to all those who have contributed to completing this report.

It is an honor to work under the guidance of Mr. Faisal, Syed Sana Ullah, Mr. Shaikh Zubair, Mr. Sharjeel, Mr. Tahir Hussain, Mr. Yousaf, and Mr. Tabish, and Mr. Adil from the IT department who made this journey interesting and fruitful.

Finally, I would like to thank all the people who helped and guided me during this six weeks journey.

Contents

Executive Summary	i
ACKNOWLEDGEMENTS	ii
<i>Chapter 1: Introduction and Area of Interest</i>	1
<i>Chapter 2: Overview of the SSGCL</i>	2
Introduction	2
Services	2
Resources	2
Community Support by SSGC.....	2
<i>Chapter 3: Learnings</i>	3
Value-Added Services (VAS)	3
Project details	3
Oracle Enterprise Resource Planning (ERP)	4
Oracle ERP modules implemented in SSGC	7
ERP Implementation Methodology in SSGC	8
Human Resource Module	10
Payables and Receivables Module	11
Oracle Dashboard Samples	12
Data Science	13
<i>Chapter 4: Findings and Analysis</i>	16
<i>Chapter 5: Recommendation and Conclusion</i>	17
<i>References</i>	18

Chapter 1: Introduction and Area of Interest

An innovative guy with an interest in technology and entrepreneurship and wants to modernize this world with his creative ideas and technical skills. The journey of my life started when I decided to not give up on my goals over the little issues of society. The turning point came in the journey when I achieved the first milestone which is an award of a fully funded scholarship to pursue my bachelor's degree in computer science. I always compete with myself rather than focusing on others whenever I feel less I try to improve myself by applying different tactics and thinking out of the box. As an enthusiast entrepreneur, I had also started an online clothing brand from the idea to a marketing campaign till its successful launch at the beginning of covid-19. I have very good communication and presentation skills and I feel confident and energetic while presenting something in front of an audience. I believe in humanity and possess a caring and loving nature. I have worked with different social organizations to help needy people when it was a tough time for them. My life aims to bring positive change through my thoughts and skills that make life easy for others.

I am a fresh graduate of computer science from Sukkur Institute of Business Administration, Sukkur. The key area of my interest in data science has many subfields that are machine learning, deep learning, digital image processing, and big data analytics. Information Technology is the department where these fields are applied in various ways by different people.

Chapter 2: Overview of the SSGCL

Introduction

Sui Southern Gas Company (SSGC) is Pakistan's large-scale company that provides natural gas under high and low pressure. The government of Pakistan has a major shareholding of the company. It is also engaged in the business of transmission, distribution of natural gas, and installation of natural gas systems ("Sui Southern Gas Company Ltd", 2022).

Services

SSGCL transmissions are extended in Sindh and Baluchistan province that comprises over 3614 KM high pressure having pipeline from 12'' to 42'' diameter. It covers the distribution of 1200 towns of Sindh and Baluchistan that is managed through its regional offices.

Resources

The company sold around 2.8 million industrial, domestic, and commercial areas which are about 384,979 million cubic feet (MMCF) of gas from 2015-to 2016 through the distribution network of 44,761 Km. The company also operated and owns only the gas meter manufacturing plant in the country that has an annual capacity of 356,000 meters on a single shift basis ("Sui Southern Gas Company Ltd", 2022).

SSGCL is managed by an autonomous board of directors that comprises 11 members. The infrastructure of gas here at SSGCL is termed as BGFIP, PGFIP, ILBP, IRBP, KDN, QBL, and CEP.

Community Support by SSGC

SSGC provides high and low-pressure transmission of natural gas as per the requirements of its customers. Along with gas facilities and manufacturing of connection meters, SSGC also supports the community by organizing different seminars as well as implementing hospitals. SSGC has supported Koohi Goth Hospital in developing a hospital that is consisted of 42 beds. It has also supported Indus Hospital in to fight against Covid19 by providing vaccination to its employees ("Sui Southern Gas Company Ltd", 2022).

Chapter 3: Learnings

Value-Added Services (VAS)

Value-Added Services are telecommunication services that are non-core and used to support the business of the company. The value-Added Services of SSGC provide support for mobile application and website development. These services are guides for the customers to communicate easily and have their issues resolved following a hectic process. The website of SSGC in the VAS section is developed on code igniter frameworks 4 and 5. The core languages used in website development are HTML, JavaScript, and CSS. I have learned the basics of these languages and developed a simple website to apply my knowledge. The current project of VAS is an online billing facility for a new connection of meters.

Project details

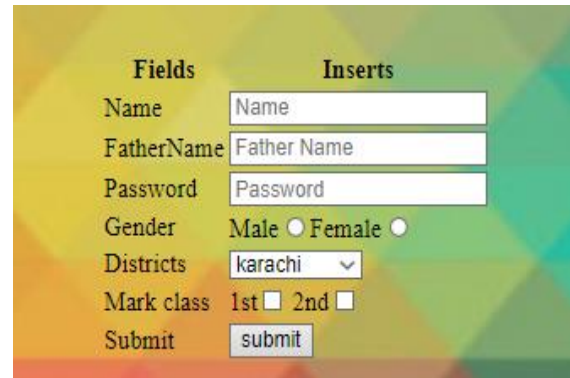
This is the main page that has four sections mentioned on the page.



Login is used to sign in to the website for accessing the website and applying for different queries.



A screenshot of a login form titled "Log: In". It features two input fields: "Name" and "Password". Below the "Password" field is a "Login" button. The form is set against a background with a green and yellow geometric pattern.



A screenshot of a form with two columns: "Fields" and "Inserts". The "Fields" column lists: Name, FatherName, Password, Gender, Districts, Mark class, and Submit. The "Inserts" column shows the corresponding input elements: a text box for Name, a text box for Father Name, a text box for Password, radio buttons for Male and Female (Female is selected), a dropdown menu for Districts (showing "karachi"), checkboxes for 1st and 2nd (1st is selected), and a "submit" button. The background has a green and yellow geometric pattern.

By: Mr. Sharjeel

Oracle Enterprise Resource Planning (ERP)

Oracle Fusion Cloud ERP is a complete, modern, cloud ERP suite that provides advanced tools such as automation of manual processes and data analytics tools to monitor real-time performance ("Oracle Enterprise Resource Planning," 2022).

Key features:

Following are the features that Oracle provides to its clients.

- Predict, detect, and act on new situations
- Simplify and speed everyday work
- Automate and eliminate manual business
- Launch new business model



Products:

Oracle ERP has a variety of products that are designed and developed based on the needs of industries. Following are the common products that are essential for modern industries.

Financial

Accounting hub, reporting, and analytics, payables and assets, revenue management, receivables, collections, expense management, joint venture management, and US federal financials.

Project Management

Project management, resource management, task management, project cost control, project billing and contracts, grants management, and analytics.

Procurement

Procure-to-pay, supplier management, sourcing, contracts, business network.

Risk and compliance management

Security design during ERP implementation, automated segregation-of-duties compliance management, continuous user security monitoring, user access certification workflow, continuous monitoring of configuration changes, continuous monitoring of critical transactions and payments, SOX, audit, and certification workflows, enterprise risk management (ERM) workflows.

Enterprise performance management (ERM)

Planning, profitability and cost management, account reconciliation, financial consolidation and close, tax reporting, narrative reporting, enterprise data management (EDM)

Supply chain and manufacturing

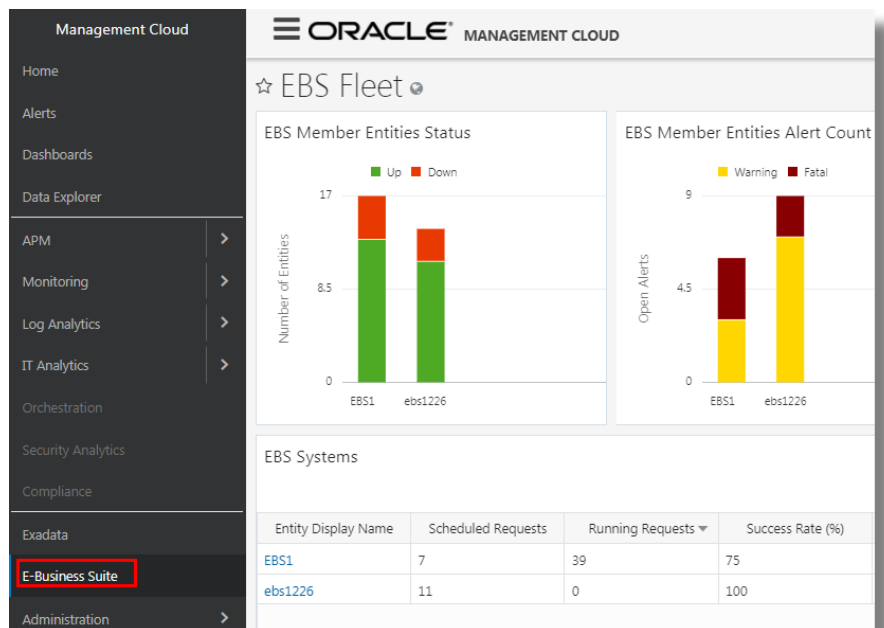
Supply chain planning, inventory, manufacturing, maintenance, order management, logistics, product lifecycle management, procurement, Internet of Things, and Blockchain.

Predict and analyze with AI

KPI management, best practice metrics library, prebuilt analytic models, extensible architecture, business content areas, self-service data discovery, augmented analytics, collaboration, and publishing, enterprise architecture and security, and mobile exploration.

Oracle products in the oil and gas industry

It is operating in 120 countries where oil and gas are produced. It is serving over 50 million customers and also enables the operations of 50000 gas stations in 75 countries.



By: Mr. Faisal

Oracle ERP modules implemented in SSGC

Oracle financials

This module is related to the number such as balance sheets of different projects. It includes the following subparts of the financial module.

1. General ledger
2. Account payables
3. Account receivables
4. Cash management
5. Fixed assets

Supply chain

The Supply chain module contains information on every product of the company. It also includes information on upcoming and previously used things.

1. Purchasing
2. Order management
3. Inventory

Oracle projects

1. Manufacturing

The manufacturing module consists of the progress of the products that are manufactured in the company. It includes the data on raw materials, in-process products, and other information about the products.

2. Discrete manufacturing/ work in progress

Discrete manufacturing contains the record of the products that are under construction/development.

3. Bills of material

It contains detailed data on the raw materials that are being used in the manufacturing process from the initial state to the final product.

System Administration

This module is used to manage the other modules to control and monitor the different implemented modules.

HR and Pay Roll management system

Human resource management consists of the details of all the employees that have worked previously and those who are currently working. It includes personal information, designation, authority, and job descriptions. Pay Roll includes the data of perks and benefits that will be provided by the company.

By: Mr. Yousaf

ERP Implementation Methodology in SSGC

Following are the steps of the methodology that are followed for the implementation of any software product in the Enterprise Resource Planning (ERP) department of Sui Southern Gas Company (SSGC) limited.

Requirement Identification

It is the initial step that includes the need for a product or modification of an implemented product. These requirements are raised by employees.

Design

The design of a process is divided into three steps that are defined below

- As is the process: As is process is the current process that is being followed. It can be a manual task that needs to be automated.
- To be process: It is the future state of that current/as-is process that needs modification. Sometimes it is not possible to automate the whole task because there can be sub-parts of that task that require manual work such as a manual signature or stamp verification.
- Package fit: It includes the designs off to be process task from initial level as is process till the future state of the process.

(In this phase the process is designed by keeping in mind the current state product such as how the task are performed currently. After that be/future state processes are given by the subject matter experts. For example: currently, the bills are paid through cash and the client wants to pay online. The subject expert will design a process that will be followed in the future to achieve the online billing facility.)

System configuration of Test Server

In this stage system configuration is performed that includes the integration of different processes of the system such as how the data from one process will be informed to another process. In the billing example, the data from the user/customer will be information for the system. The system performs checks on customer bills and makes payments if the customer pays otherwise unpaid will be applied.

System Testing

Testing is the process where a system test is performed by the quality assurance team. In this process, the complete system is tested to check whether the integrated processes are working correctly or not. If the testing is correct by the QA team then the system is provided to users for testing and if the QA team disagrees with the system testing then the developers again need to make changes to correct it.

User Acceptance Test

It is applied after system testing. In this step, the system is provided to the client for testing. The users check the system as per their requirements. If the system is working fine as per the need of the client such as the customer paying a bill online and the system updating the status as paid then users accept the test otherwise it complains regarding the system.

System Configuration of Production Server

In this phase, the developed product is configured by applying system configuration techniques. It is used to satisfy both customers' needs and technical constraints by using the product configuration technologies.

User Training

The training is provided to the end-users of the system. In this stage, the team provides hands-on step-by-step training to the staff/employees of the organization who will use the system.

Go-Live

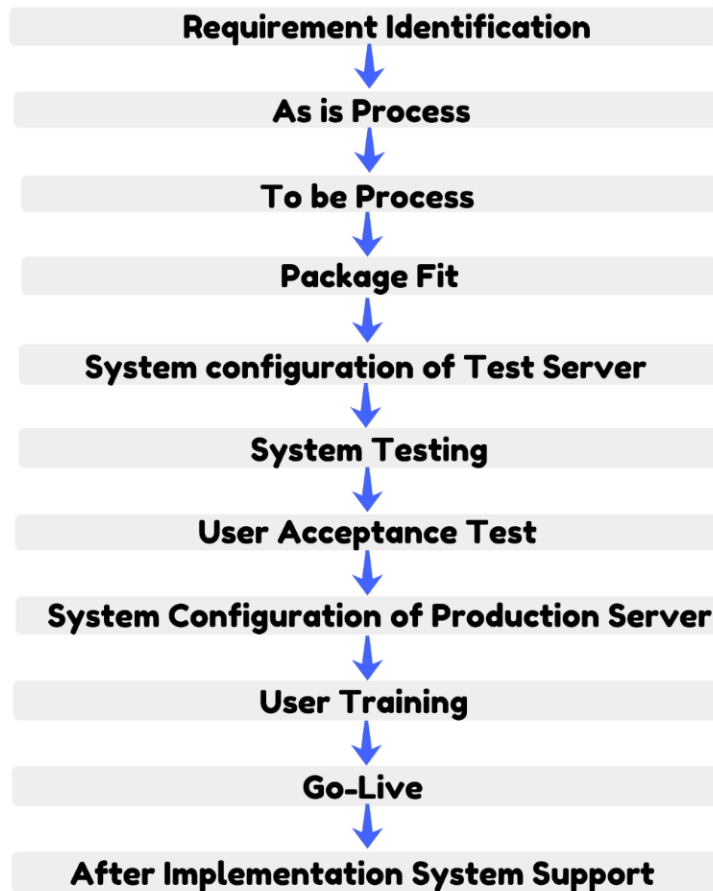
It is the stage in, which the service provider gives the product to users for their systems. Most of the time the system works perfectly as per the requirements.

After Implementation System Support

It is an ongoing process that is applied until the system is being used. This is also known as system support which is defined in the contract signed between the client and service provider company.



Enterprise Resource Planning Implementation Methodology



By: Mr. Tahir Hussain

Human Resource Module

The human resource module of ERP has been implemented to deal with the management of people working in the company. It is related to the daily life matter that occurs in human life such as application for leave, medical support, bonus opportunities, loan management, and several related things.

Merge of Different Companies into SSGC

In the early day, different gas companies were Indus gas, Sui gas, and Karachi gas but now it is merged into Sui Southern Gas Company. Seven types of pay rolls are running in the head office and different zones of the company.

Grades at SSGC

The designation of employees consists of two parts that are staff and executives. The staff group has grades from I-V while the executive group has grades from I-X.

Types of Contracts

There are mainly two types of contracts used in the hiring process of employees. The first one is a company contract that is the responsibility of the company while the other is a third-party contractor that is nothing to do with the company's responsibilities. The requiring process is the process in which permanent employees are hired while the non-requiring process is temporary that is used to hire people for a limited time.

Automatic Management

The benefit of the ERP HR module is that everything is managed automatically because there is no need to go into a section to get permission for vacations like previously. All the issues and applications are available in the ERP module for employees. They just need to open the concerned application and wait to get the approval from the section head to avail of that facility.

By: Mr. Adil

Payables and Receivables Module

Two categories are applied based on the nature of business such as vendor payment is payable while the customer payment is receivable for the company.

Vendor dealing process

When the company needs any type of product for the services then tender is published in the different newspapers to acknowledge different vendors. After the tender bidding is applied in the Bid Band section to register the vendor. The vendor gives the Receiving Statement RS which is a type of contract for providing the products within mentioned time.

Invoice

There are three types of the invoice that are given below

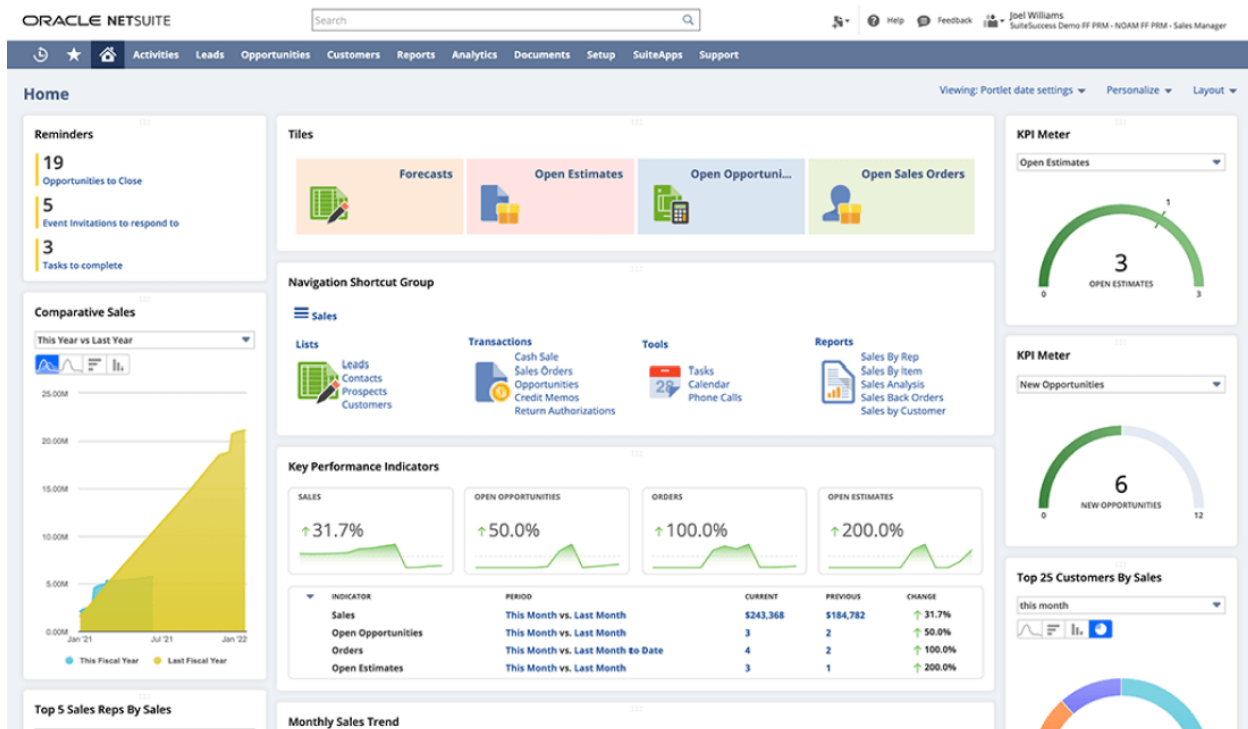
1. Purchasing Order PO based: issued by the buyer (client)
2. Receiving Statement RO based: issued by the seller (vendor/supplier)
3. Non-PO/local: a local retailer

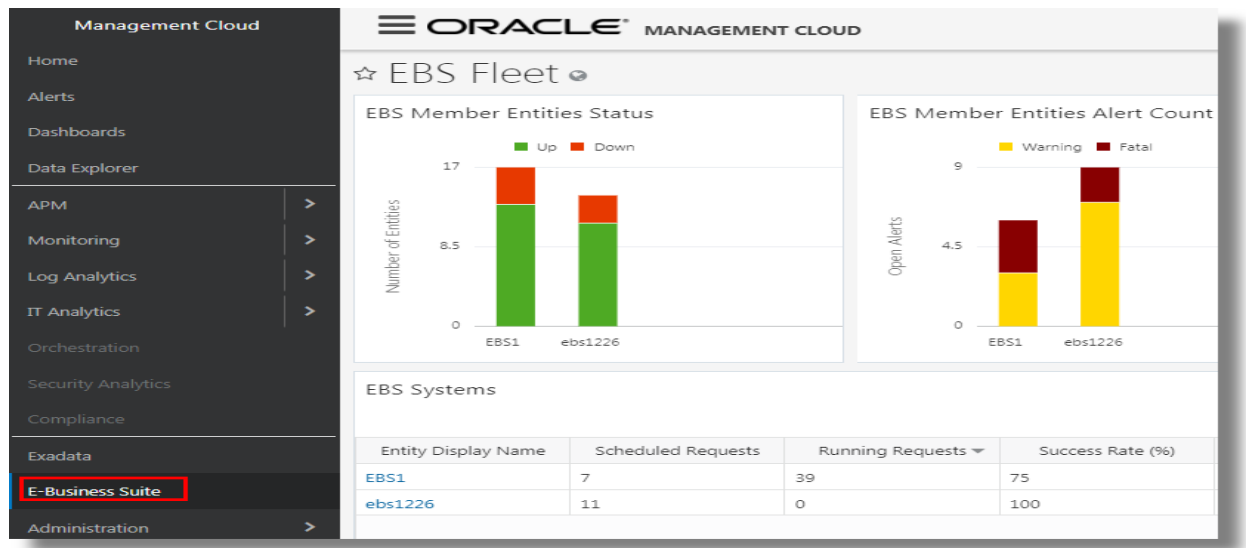
The invoice is sent to the approval department for approval then it is transferred to the finance department for validation. If the invoice is all set with its details then it is forwarded to the treasury section. The payments are paid through cash, bank check, and online transactions as per the vendor contract.

Order Types

1. Local Order (LO) and Non-Local Order (NLO)
2. Purchase Order (PO) and Service Purchase Order

Oracle Dashboard Samples





By: Mr. Tabish

Data Science

Data science is the most developing field that is booming continuously due to its usage and benefits for the exponential growth in businesses.

Following are the three main roles that occur in the domain of data science. It depends upon the requirements and business methods of organizations that need to follow people to achieve their goals.

1. Data Scientists

A data scientist is a person who applies data pre-processing on the dataset and machine learning models, and evaluates models using various techniques.

2. Data Engineer

A data engineer collects data, cleans data, prepares data, develops and constructs test cases, and maintains complete architecture.

3. Data Analyst

A data analyst analyses data of organizations and uses business intelligence to help in the decision-making process.

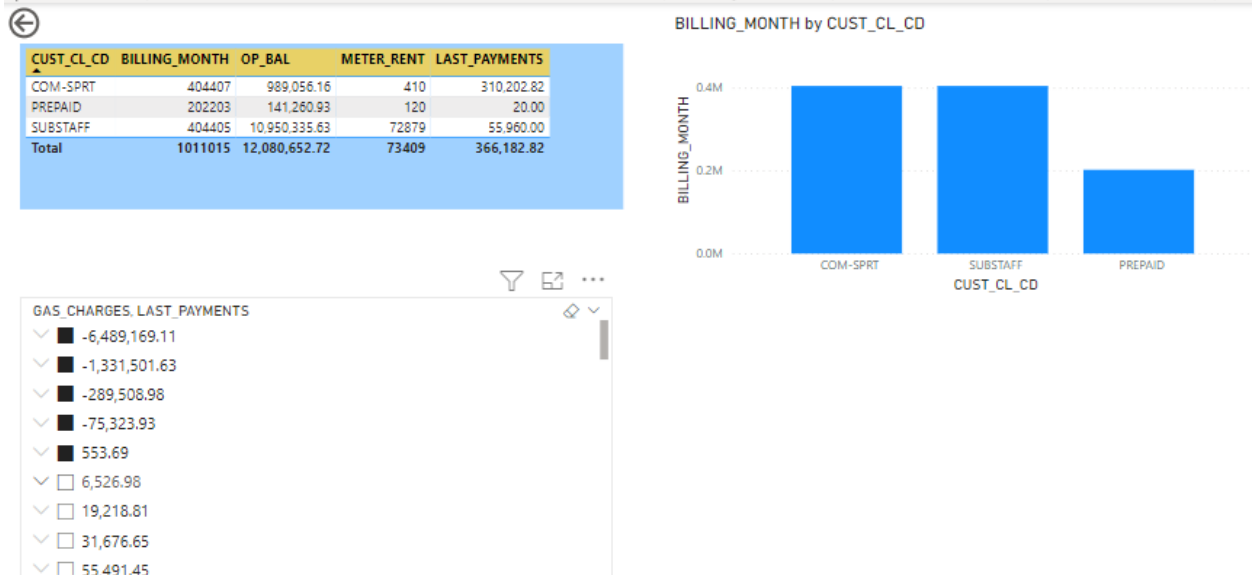
Data analytics using Power BI

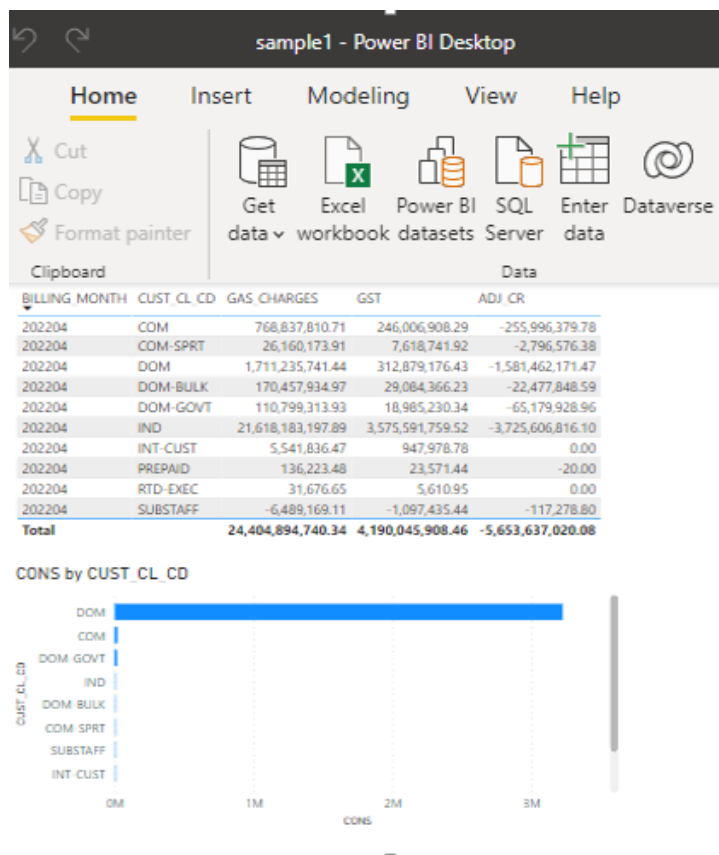
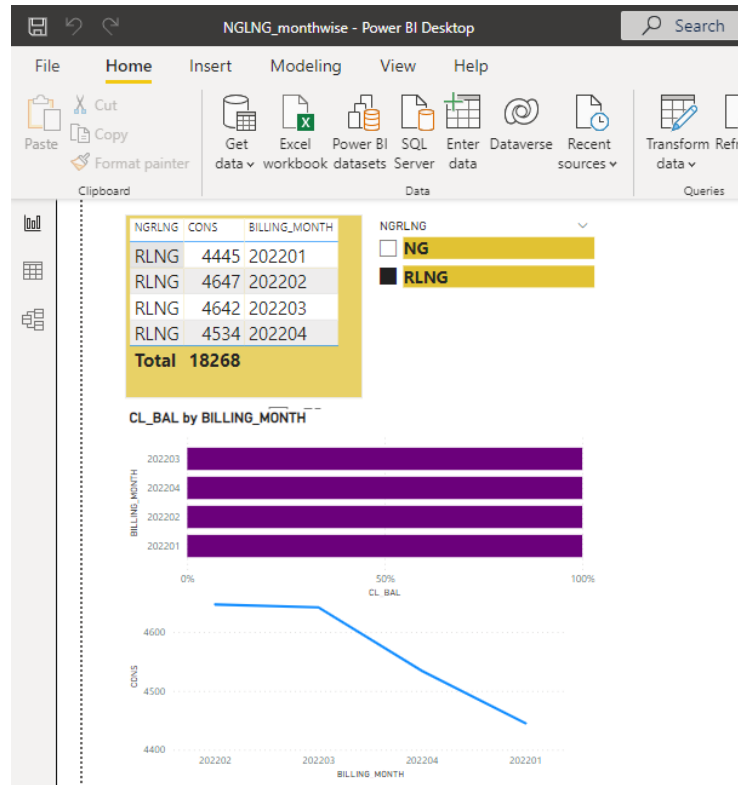
Power BI is used to analyze data to find insights and features of the data by designing dashboards using data visualization techniques to generate reports, especially for a high-level audience like CEOs and non-technical people.

Sample data of SSGC

X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	
WD_GST	WD_MM8TU	WD_GDS	LPS	OTHER_GST	OTHER_CM	OTHER_MM8TU	OTHER_GAS_CHARGES	MISC_ADJ	OTHERS_ADJ	WHT_TAX	OTI
-59,047,140.36	-761507.0287	-1803.7	45,663,972.12	28604231.33	25807074.9	914981.8288	168165058.5	-10079563	-216889.92	0	
-2,510,623.78	-16534.9746	0	3,595,504.56	953865.09	214282.685	7339.641121	5610971.15	-18996	-248.35	0	
-1,590,871.21	-12225.46216	0	5,488,297.75	139695.97	156844.773	5495.786774	821724.22	-12546.9	-176.6	0	
-307,271,553.22	-1852266.85	0	1,937,497,913.64	-210804036	-41191202	-1465906.537	-1239693706	1333783	0	362921.7	
-172,824.44	-1328.560532	0	0.00	6833.59	3936.66048	132.490627	40197.06	0	-62.4	0	
-1,763.73	-17.458717	0	0.00	0	0	0	0	0	0	0	
-190.78	-2.505615	0	259.69	0	0	0	0	0	0	0	
-183,708.07	-797.65312	0	416.06	6043.12	2778.16641	97.093079	35547.83	-371	0	0	
-3,206,844.00	-18065.40649	-39308.87	24,497,273.67	3155151.46	446579.25	15703.33948	18559714.48	-511068.69	-6835.19	0	
-136,237.63	-1183.566851	0	1,218,408.40	7029.94	963.9	32.68861	41352.54	-32872	0	0	
-29,350,827.46	-406981.4803	-19.73	44,191,611.40	26132760.61	26292072.9	937058.7203	153681823.3	-13961045.3	-145867.03	0	
-3,523,269.86	-26973.5131	0	4,018,388.98	654433.56	149875.497	5200.257573	3849609.09	-29660	-180.35	0	
-1,334,040.18	-10601.96744	0	6,241,102.26	330776.76	179944.672	6330.363713	1945732.47	-89065	-1037.27	0	
-443,642,976.28	-2687534.561	0	2,058,593,434.90	-303031818	-63903952	-2273025.932	-1713887387	1076013	0	362615.7	
-96,959.04	-614.600042	0	314.15	1859.62	2064.2134	70.965812	10938.48	0	-2.09	0	
0.00	0	0	24.87	0	0	0	0	0	0	0	
-4,001.51	-56.55293	0	818.46	0	0	0	0	0	0	0	
-16,530.94	-143.60456	0	382.81	2500.03	1959.52432	69.213047	14706.09	-2071	0	0	
-1,998,069.04	-9646.3161	0	21,619,643.08	462429.66	58693.6168	2078.524593	2720174.45	-633435	-868.4	0	
-198,820.54	-1693.234044	0	1,074,560.66	0	0	0	0	-3000	0	0	
-25,525,932.23	-336359.4202	-1237.1	43,041,258.48	22357755.85	21206773.5	755290.0469	131574359.5	-17128060.6	-110008.09	0	
-5,929,681.18	-38150.51839	0	17,811,824.36	571770.5	127456.752	4413.118648	3363355.92	-16260	-162.66	0	
-10,039,210.27	-60143.96348	0	6,293,410.46	568515.63	219144.304	7636.126243	3344210.73	-66123	-395.45	0	
-514,943,715.11	-3016850.264	0	5,249,147,628.52	-464568173	-91162361	-3237021.114	-2732796994	1045364	0	362254.99	
-46,782.29	-366.196342	0	0.00	1412.25	1790.7606	64.632172	8307.39	0	-7.96	0	
-36.14	0	0	16,172.94	0	0	0	0	0	0	0	
-180.70	-0.170716	0	316.79	0	0	0	0	0	0	0	
-1,301,112.74	-5431.244032	0	368.67	4942.51	2765.90728	95.743224	29073.55	0	0	0	
-748,684.23	-1077.526075	0	3,977,295.44	336402.79	43468.53	15041.5050	1078839.98	0	0	0	

Export Worksheet





By: Syed Sana Ullah

Chapter 4: Findings and Analysis

Along with learning the latest things, I have also gone through the recent projects that have been implemented for facilitating customers such as mobile applications to connect customers and resolve their queries in the latest ways within minutes or days (Author, 2021).



SSGCL always tries the best possible ways to serve its clients and employees. The employees learn modern skills and apply them to the systems for time-saving and efficient processes. The managing director of SSGC Mr. Imran Maniar always encourages providing the best services to customers and introducing cost-efficient solutions for benefiting the country. There are many different types of projects that are being developed by the people of SSGCL. SSGC is believed to introduce handy software solutions to save the time for customers. The company is supposed to maximize revenue and minimize costs and expenses without compromising the quality of services (Author, 2021).

Chapter 5: Recommendation and Conclusion

Sui Southern Gas Company Limited is one of the top category companies of Pakistan that has been serving in two provinces Sindh and Baluchistan in multiple cities and areas. There are many customer care centres and zones of the company to facilitate locals of that area. The company and its people are working continuously to give the best possible services both offline and online. It is an honor to learn and work under professionals who have expertise in multiple fields. SSGCL has a world-class state-of-the-art infrastructure that is giving a pleasant environment for personal and professional growth (Johar, 2022).

Specifically, I have worked in three main sections that are given below:

1. VAS: Value Added Services
2. ERP: Enterprise Resource Planning
3. CC&B: Customer Care and Billing

I have explored and learned many new things that are very interesting for me. It is all the grace of Mr. Jameel-ur-Rehman and Ma'am Dur-e-Shehwar from the information technology department because they facilitated me in the sections of my own choice. I would love and feel proud to inform my fellow and connections to share my experience here at SSGCL.

I would recommend to the human recourse department to please announce internship training programs every year to give such wonderful exposure to different people of Sindh and other provinces as well because there are very few organizations like SSGCL, especially in Sindh, Pakistan.

References

Author, S. (2021, june,2021). The Flame capturing vibrancy, deversity and energy of SSGC

The Flame capturing vibrancy, deversity and energy of SSGC

158 June,2021

24.

Johar, A. (2022). Data Analyst vs Data Engineer vs Data Scientist: Skills, Responsibilities, Salary

from <https://www.edureka.co/blog/data-analyst-vs-data-engineer-vs-data-scientist/>

Oracle Enterprise Resource Planning. (2022). from <https://www.oracle.com/erp/>

Sui Southern Gas Company Ltd

(2022). from www.ssgc.com.pk