



EAST WEST UNIVERSITY

Department of CSE

Course Title: Database Systems

Course Code: CSE302

Section: 01

[FALL_2023]

Project Report

<https://apex.oracle.com/pls/apex/r/dbkenn/desco141383/login?session=106473241066471>

DESCO Electricity Billing System

Date of submission: 29/12/2023

Submitted To:

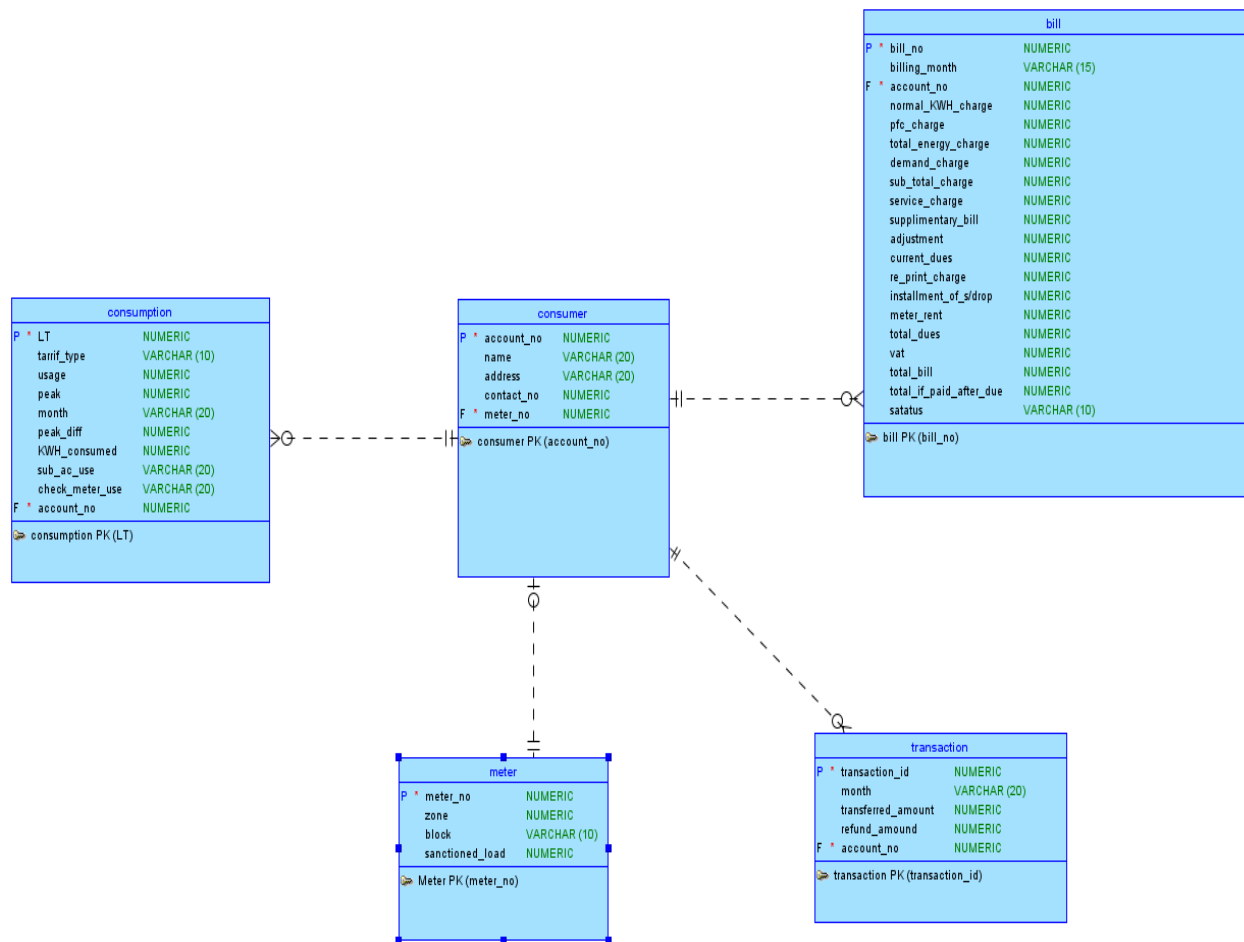
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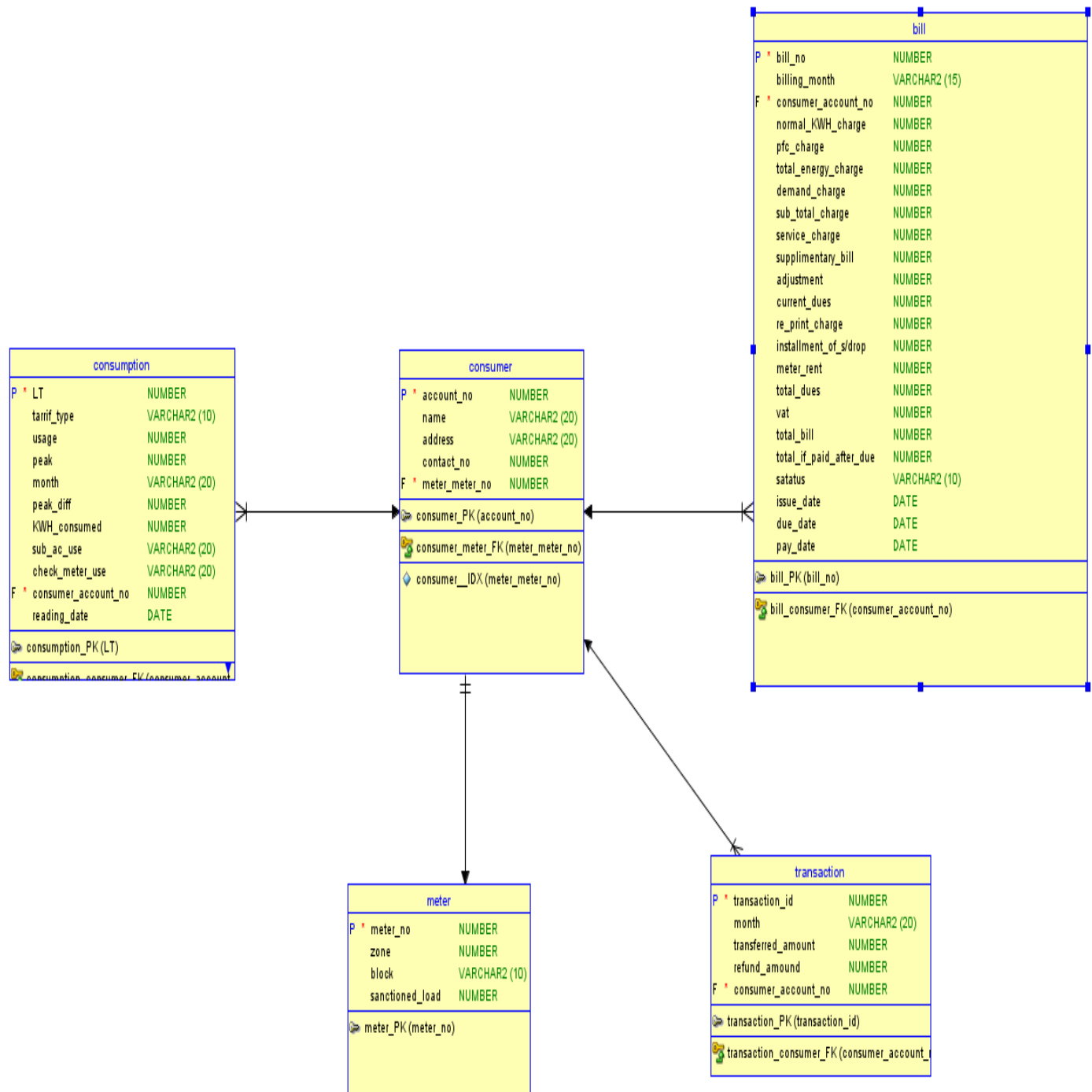
Submitted by:

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1. E-R Model of the Project



2. Relational Data Model of the Project



3. Implementation Checklist

Description	Remarks
Project ID	141383
Workspace Name	dbkenn
Workspace Email	2021-3-60-206@std.ewubd.edu
Workspace Password	db302khan22
Authentication Type	Custom
Username and Password to Login	Username: admin Password: admin123
	Username:imran Password: <i>imran123</i>
	Username:nazmul Password: nazmul123
	Username:sakibur Password: sakib123
	Username:zarin password: zarin123
Uploaded and Displayed Images in Reports	yes
Implemented Page-wise Authorization	yes
Number of Reports with Forms	5
Number of Master-detail Forms	1
Number of Reports based on Queries, Aggregate Queries	2
Number of Parameterized Reports	1
Number of Graphs/Charts	28
Included any trigger/other feature which is not taught in class. If yes, please explain briefly.	yes, the trigger is used for calculating kwh consumption, normal kwh charge, status update, transaction, calculating the total bill, current bill, if paid after due,total energy change, and sub total charge.
Write the most unique feature/functionality in your application or the page of your application that you are proud of. Explain briefly.	we are proud of our authorization and authentication system and trigger we used.

4. Reports with Forms

Report Page Number and Name	Form Page Number and Name	Table
P2: Consumer	P3: ConsumerF	Consumer
P4: Consumption	P5: ConsumptionF	Consumption
P6: Bill	P7: BillF	Bill
P8: Meter	P9: MeterF	Meter
P23: Transaction	P24: TransactionF	Transaction
P25: Consumer-pp	P26: CPP	Consumer

The screenshot displays the DESCO application interface. On the left is a sidebar menu with options: Home, consumer, consumption, bill, Meter, CONSUMER_M_DETAILS, CONSUMER_STAT, CONSUMPTION_ANALYSIS, BILL_ANALYSIS, Transaction, Consumer_PP, and Administration. The main area is titled 'consumer' and contains a table with columns: Account No, Name, and Address. The table lists 10 consumers. To the right of the table is a form titled 'consumerF' with fields for Account_no, Name, Address, Contact No, and Meter No. At the bottom right of the form is a 'Create' button. The bottom of the screen shows a Windows taskbar with various application icons and the system clock at 9:05 AM.

Account No	Name	Address
102	Sakib	Uttara-1,Dhaka
103	Zarin	Altanogor,Dhaka
111	Imran	Mirpur-11,Dhaka
201	Rakib	Rampura,Dhaka
203	Adnan	Manul-Badda,Dhaka
212	Fahim	Rampura-11
303	Ehsanul Huq	Boshondhora,Dhaka
314	Habib	Modho-Badda,Dhaka
412	Arim	Rampura-56,Dhaka
511	Rezwaniul Huq	Mirpur,Dhaka

Figure 4.1: Consumer

consumption

Lt	Tariff Type	Usage	Peak	Month	Peak Diff	Kwh Con
18159372	A	2016	0	nov	0	
24101302	A	1746	0	oct	0	
24901583	A	1254	0	sep	0	
81732490	A	756	0	aug	0	
81267402	A	211	0	jul	0	
67148892	A	134	0	jun	0	
37640122	A	2025	0	nov	0	
91872429	A	1586	0	oct	0	
82734729	A	1025	0	sep	0	
78230953	A	756	0	aug	0	
98476712	A	456	0	jul	0	
82358192	A	111	0	jun	0	
19539720	B	2593	0	nov	0	
82358203	B	1586	0	oct	0	
49320271	B	1325	0	sep	0	
25038893	B	1056	0	aug	0	
63492138	B					

consumptionF

Search: [] Go Actions

Fields: Lt, Tariff Type, Usage, Peak, Month, Peak Diff, Kwh Consumed, Sub A/C Use, Common/Check Meter, Account No

Figure4.2: Consumption

bill

Bill No	Billing Month	Normal Kwh Charge	Pfc Charge	Total Energy Charge	Demand Charge	Sub Total Charge	Service Charge	Supplementary Bill	Adjustment	Current Dues
1123402	nov	1679	0	1679	231	1910	0	0	1	1911
10231025	oct	3680.42	0	3680.42	123	3803.42	1	0	0	3804.42
92310121	sep	3749.48	0	3749.48	231	3980.48	0	0	1	3981.48
8233012	aug	4290.45	0	4290.45	105	4395.45	1	0	0	4396.45
72320111	jul	377.01	0	377.01	105	482.01	0	0	1	483.01
62310101	jun	754.92	0	754.92	105	859.92	0	0	1	860.92
1123192	nov	3070.39	0	3070.39	125	3195.39	0	0	1	3196.39
1023191	oct	4474.61	0	4474.61	236	4710.61	1	0	0	4711.61
9231090	sep	1672.05	0	1672.05	158	1830.05	0	0	1	1831.05
8231089	aug	1887.5	0	1887.5	258	2145.5	1	0	0	2146.5
7231088	jul	2217.8	0	2217.8	145	2362.8	0	0	1	2363.8
6231087	jun	602.43	0	602.43	145	747.43	0	0	1	748.43
1123121	nov	4950.14	0	4950.14	451	5401.14	0	0	1	5402.14
1023120	oct	1161.62	0	1161.62	154	1315.62	1	0	0	1316.62
9231019	sep	1296.58	0	1296.58	126	1422.58	0	0	1	1423.58
8231018	aug	3330.62	0	3330.62						

BillF

Search: [] Go Actions

Fields: Bill_no, Billing Month, Account No, Normal Kwh Charge, Pfc Charge, Total Energy Charge, Demand Charge, Sub Total Charge, Service Charge, Supplementary Bill, Adjustment

Figure4.3: Bill

DESCO

Meter

Meter No	Zone	Block
30314	1015	ACD
10111	1054	MCRA-5
20212	1569	GRL
20203	4589	KJHM
10103	1056	AMP
20201	1086	FECM
30303	1869	VGJI
40412	1234	CDE
50511	1456	ASD
10102	1055	AND

MeterF

Meter_no

Zone

Block

Sanctioned Load

Figure4.4: Meter

DESCO

Transaction

Transaction ID	Account No
124589625	102
125478965	102
125478964	102
142578965	102
193803497	102
444477779	102
125696745	103
125828965	103
146589624	103
123657859	103
147895648	103
145876952	103
124890254	111
125496258	111
125478963	111
124865973	111
124569875	

transactionF

Transaction_ID

Account No

Tr Amount

Re Tk

Month

Create

Figure4.5: Transaction

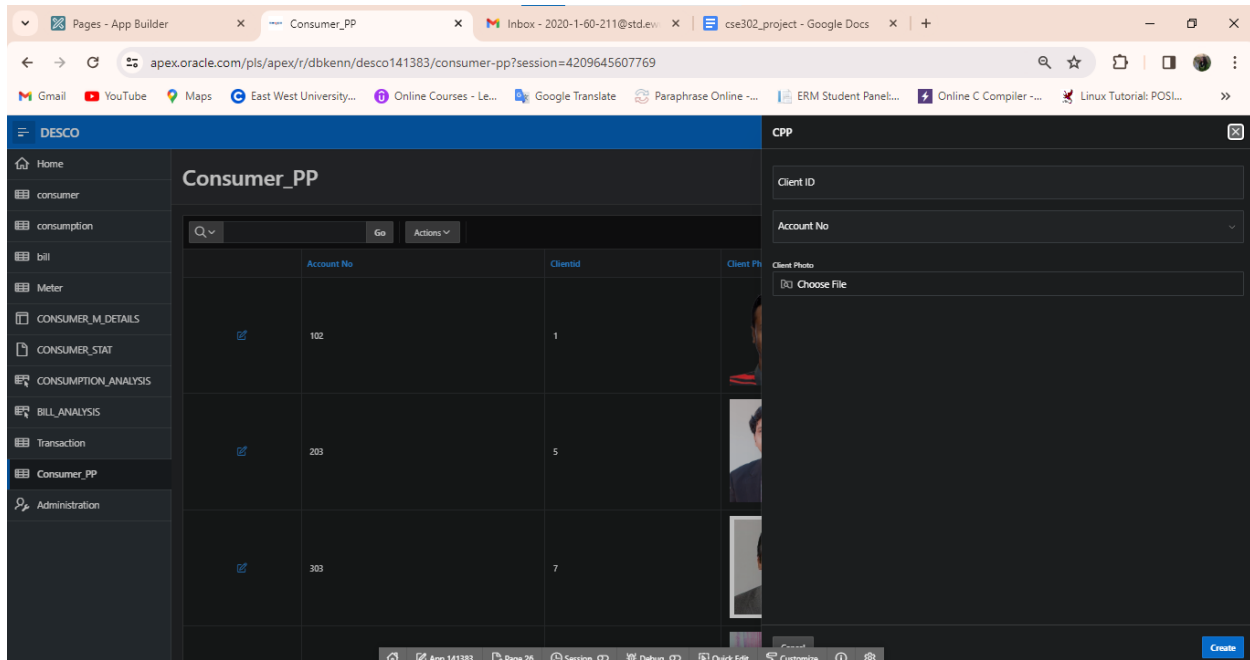


Figure4.6: Consumer_PP

5. Master-Detail Form

Page Number and Name	Master Table (Parent)	Detail Table (Child)
P15: Consumer_M_Details	Consumer	COnsumtion,Bill

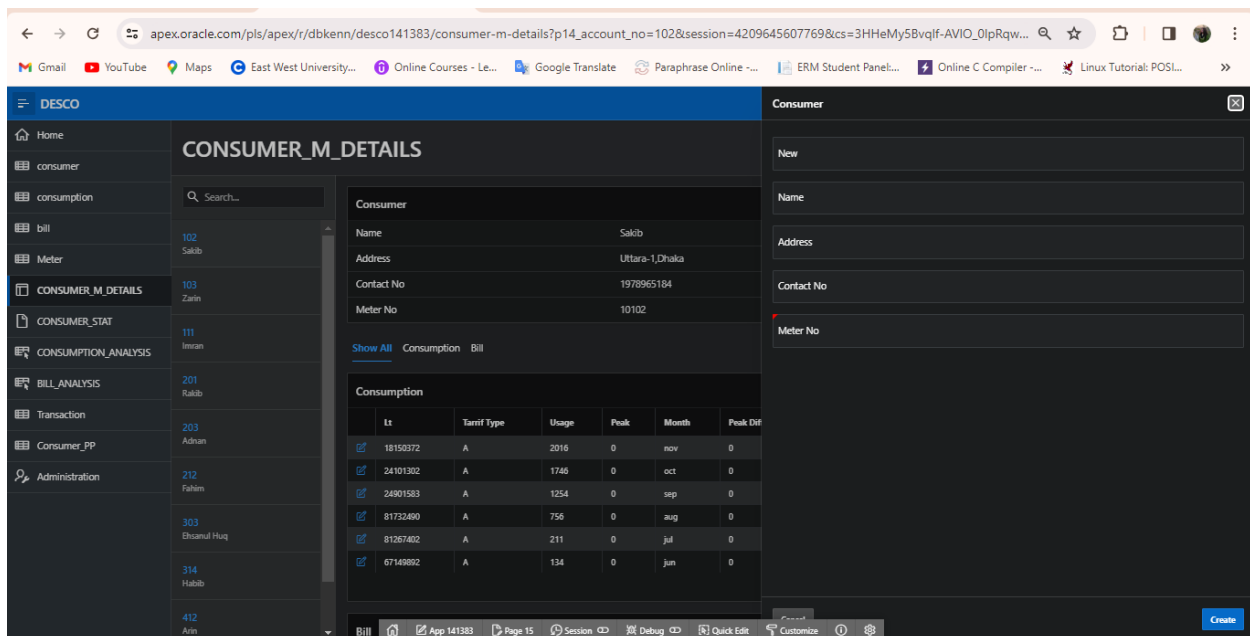


Figure 5.1: Consumer_M_Details

6. Reports based on Multi-Table and Aggregate Queries

Page Number and Name	Query Type	Report description
P19: Consumtion_Analysis	Aggregate	Min, Max, Avg, Sum of consumption and analysis
P21: Bill Analysis	Aggregate	Min, Max, Avg, Sum of Bill and analysis

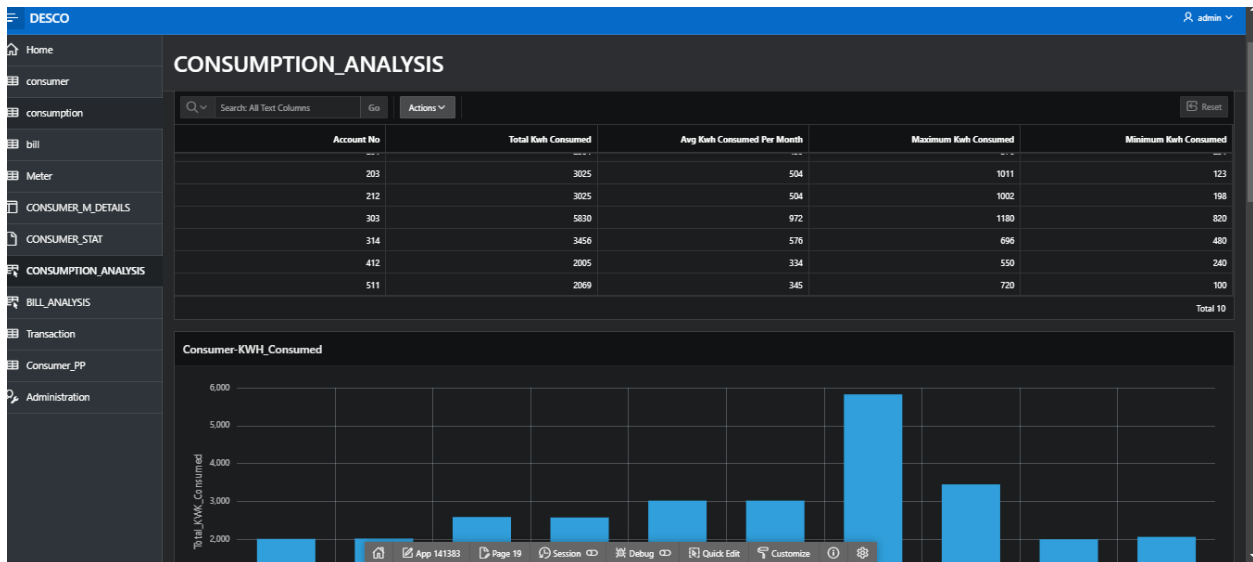


Figure6.1: Consumption Analysis

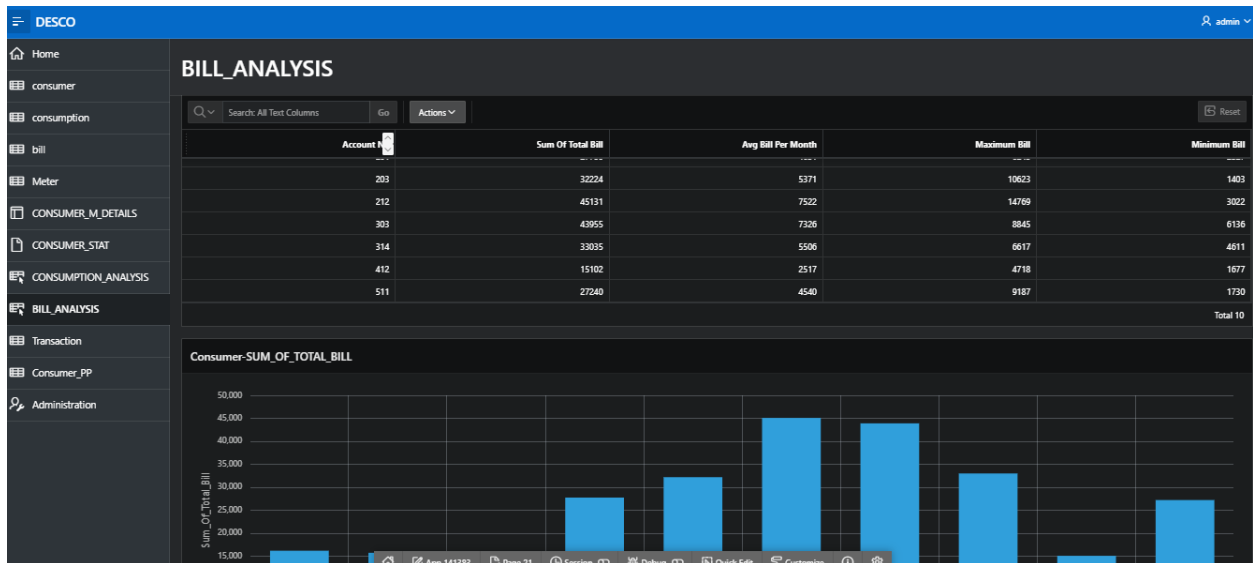


Figure6.2: Bill Analysis

7. Parameterized Reports

Page Number and Name	Given Input	Report description
P18: Consumer_stat	Account_No	Month vs KWH consumption of consumer

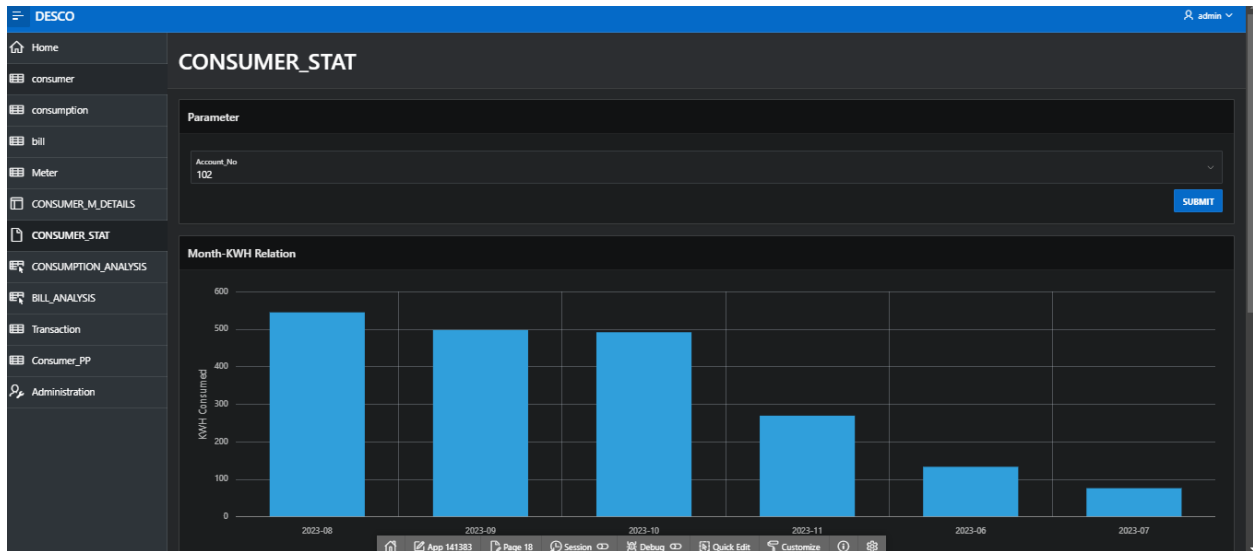


Figure 7.1: Consumer_Stat

8. Charts and Other Pages

Page Number and Name	Query Type	Report description
P19: Consumption_Analysis	Aggregate	Min, Max, Avg, Sum of consumption and analysis
P21: Bill Analysis	Aggregate	Min, Max, Avg, Sum of Bill and analysis

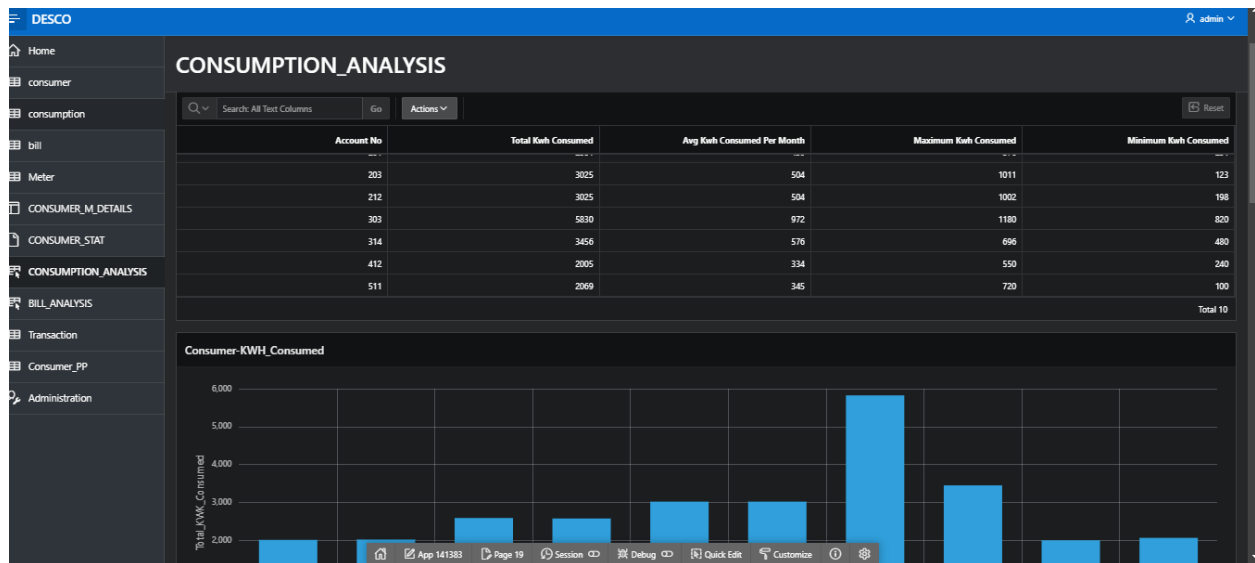


Figure8.1: Consumption Analysis

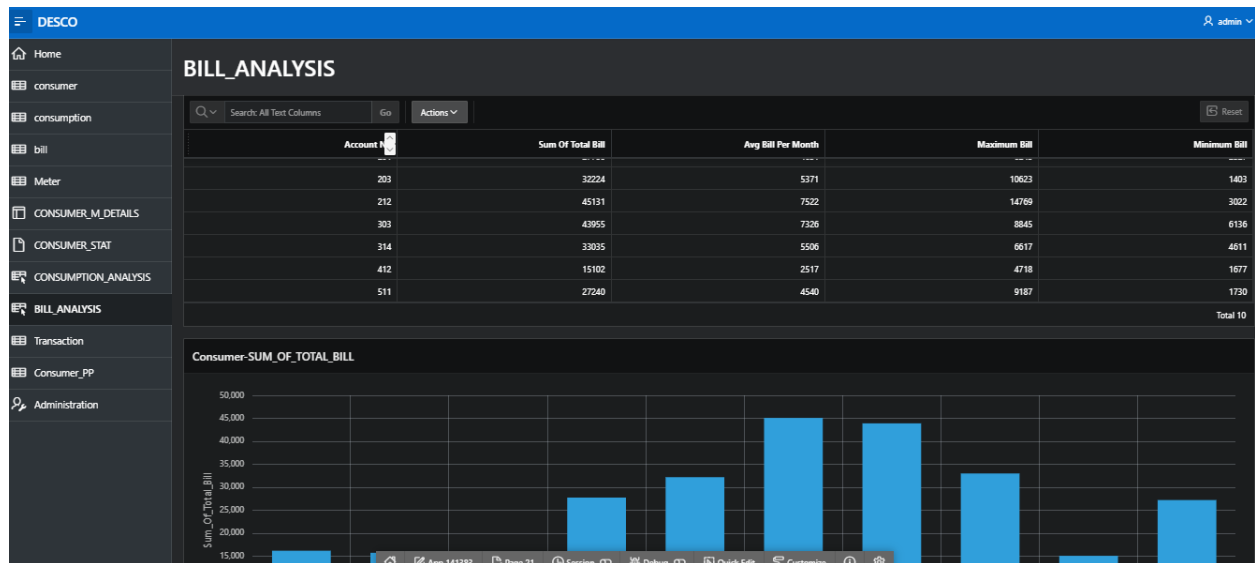


Figure8.2: Bill Analysis

9. Authorization and User Role Assignment

User Role Assignment

User name	Password	Role
admin	admin123	Administrator
imran	imran123	Contributor
nazmul	nazmul123	Contributor
sakibur	sakib123	Reader
zarin	zarin123	Reader

Page-wise Authorization Information

Page number and name	Authorization Level
P1: Home	Reader
P10000: Administration	Administrator
P2: Consumer	Reader
P3: ConsumerForm	Contributor
P4: Consumption	Contributor
P5: ConsumptionForm	Contributor
P6: Bill	Reader
P7: BillForm	Contributor
P8: Meter	Reader
P9: MeterFoem	Contributor
P10: Consumer_M_Details	Raeder
P12: Consumer_M_Details	
P13: Consumer_M_Details	
P14:	
P18: Consumer_STAT	Reader
P19: Consumption_Analysis	Administrator
P21: Bill_Analysis	Administrator
P23: Transaction	Administrator
P24: TransactionForm	Administrator
P25: ConsumerPP	Reader
P26: CPP	Reader

10. Concluding Remarks

When we worked on this project, we faced many types of problems like bugs, learned ER modeling, and page implementation. We learned how to implement DBMS in practical life during this project. If we give more time to our project in the future it will turn into a more user interactive application. The overall experience while doing the project was fantastic