

DBMS Miniproject

Div: C

Batch: C2

Group Members:

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Electronics Store Management System

Introduction:

The Electronics Store Inventory Manager is a database management system (DBMS) project designed to streamline inventory management processes for an electronics store. The project utilizes MySQL as the database management system, Python for backend programming, ODBC (Open Database Connectivity) for database connectivity, and Visual Studio Code (VSCode) as the integrated development environment (IDE).

Key Features:

1. Database Design: The project includes a well-defined database schema designed using MySQL to store information about products, suppliers, orders, customers, and inventory.
2. User Interface: The user interface is developed using Python to provide an intuitive and user-friendly experience for managing inventory. It includes functionalities such as adding new products, updating existing inventory, placing orders, and generating reports.
3. Database Connectivity: ODBC is used to establish a connection between the Python application and the MySQL database, enabling seamless communication for executing SQL queries and retrieving data.

4. Backend Logic: Python is utilized to implement the backend logic for processing user requests, interacting with the database, and performing business logic operations such as inventory updates, order processing, and report generation.

5. Data Validation and Error Handling: The project incorporates robust data validation mechanisms to ensure the integrity and accuracy of data input by users. Error handling techniques are implemented to provide informative feedback and handle exceptions gracefully.

6. Integration with VSCode: Visual Studio Code is used as the development environment for writing, testing, and debugging the Python code. It offers features such as syntax highlighting, code completion, and debugging tools to enhance the development process.

7. Scalability and Extensibility: The project is designed with scalability and extensibility in mind, allowing for future enhancements and additions to accommodate evolving business requirements and expansion of the electronics store.

Technologies Used:

MySQL

Mysql-connector-python

ODBC

Python

Platform (IDE) Used:

VS Code

Customers Table:

custid	fname	lname	phn_num	email	address_line1	address_line2	city	state	country	pin_code	dom
100001	John	Doe	9876543210	john.doe@gmail.com	123 Main St	Apt 2B	Cameo	California	USA	12345	2023-05-12
100002	Emily	Smith	9876543210	emily.smith@gmail.com	456 Elm St		Springfield	Illinois	USA	54321	2022-11-30
100003	Maria	Rodriguez	5551234567		789 Oak St		Miami	Floria	USA	33101	2024-02-20
100004	Ahmed	Khan	1112223333	ahmed.khan@gmail.com	321 Maple Ave	Apt 3C	Karachi	Sindh	Pakistan	74000	2023-09-10
100005	Shreeya	Karnik	9860590608	shreeyakarnik4@gmail.com	BKHC	Karvenagar	Pune	MH	India	411041	2024-01-24
100006	Chinmayee	Randive	4234589070		BKHC	Karvenagar	Pune	MH	India	411041	2023-12-31
100007	Vaidehi	Sarag	6738020034		Karishma	Kothrud	Pune	MH	India	411052	2023-08-25
100008	Michael	Johnson	9998887776	michael.johnson@gmail.com	789 Pine St	Apt 5D	Dallas	Texas	USA	75201	2023-07-15
100009	Sophie	Anderson	8887776665	sophie.anderson@gmail.com	654 Cedar Rd		Seattle	Washington	USA	98101	2024-03-28
100010	Javier	Hernandez	7776665554	javier.hernandez@gmail.com	321 Oakwood Dr		Houston	Texas	USA	77002	2023-11-19
100011	Priya	Patel	6665554443	priya.patel@gmail.com	987 Maple Ln	Apt 7E	Chicago	Illinois	USA	60601	2024-04-05
100012	Liam	Thompson	5554443332	liam.thompson@gmail.com	456 Elm St	Apt 10B	San Francisco	California	USA	94105	2023-12-10
100013	Isabella	Martinez	4443332221	isabella.martinez@gmail.com	654 Pine Ave		Miami	Florida	USA	33130	2024-02-15
100014	Muhammad	Ali	3332221110	muhammad.ali@gmail.com	321 Cedar Rd		Los Angeles	California	USA	90001	2023-09-01
100015	Emma	Nguyen	2221110009	emma.nguyen@gmail.com	789 Oakwood Dr	Apt 3F	New York	New York	USA	10001	2024-01-10
100016	Oliver	Garcia	1110009998	oliver.garcia@gmail.com	987 Maple St		Houston	Texas	USA	77001	2023-10-25
100017	Mia	Walker	1234567890	mia.walker@gmail.com	654 Pine St		San Diego	California	USA	92101	2024-02-28
100018	Nathan	Hughes	9876543210	nathan.hughes@gmail.com	123 Oak St		Boston	Massachusetts	USA	02108	2023-05-20
100019	Ava	Morris	9876543210	ava.morris@gmail.com	456 Pine Ave		Philadelphia	Pennsylvania	USA	19103	2022-12-05
100020	Lucas	Wright	5551234567	lucas.wright@gmail.com	789 Elm Rd		Washington	D.C.	USA	20001	2024-02-25
100021	Leah	Robinson	1112223333	leah.robinson@gmail.com	321 Oakwood St		Atlanta	Georgia	USA	30301	2023-09-15
100022	Mohammad	Hassan	9860590608	mohammad.hassan@gmail.com	654 Maple Ln	Apt 4B	Chicago	Illinois	USA	60605	2024-01-30
100023	Lila	Rossi	4234589070	lila.rossi@gmail.com	987 Elm Ave		Dallas	Texas	USA	75202	2023-12-15
100024	Connor	Evans	6738020034	connor.evans@gmail.com	654 Oakwood Dr	Apt 8C	Miami	Florida	USA	33131	2023-08-30
100025	Aarav	Patel	9876543210	aarav.patel@gmail.com	321 Cedar St		Los Angeles	California	USA	90002	2023-05-25
100026	Alice	Turner	5551234567	alice.turner@gmail.com	789 Pine Rd		San Francisco	California	USA	94110	2024-03-05
100027	Ethan	Bailey	1112223333	ethan.bailey@gmail.com	456 Oakwood Ave		Seattle	Washington	USA	98102	2023-10-01
100028	Olivia	Morgan	9860590608	olivia.morgan@gmail.com	654 Elm St	Apt 2A	Houston	Texas	USA	77003	2024-02-10
100029	Liam	Cooper	4234589070	liam.cooper@gmail.com	987 Maple Rd		Miami	Florida	USA	33132	2023-07-05
100030	Isaac	Young	6738020034	isaac.young@gmail.com	654 Pine Dr	Apt 6E	Los Angeles	California	USA	90003	2023-11-20
100031	Charlotte	King	9876543210	charlotte.king@gmail.com	321 Oak St		Boston	Massachusetts	USA	02109	2024-01-15
100032	James	Adams	5551234567	james.adams@gmail.com	789 Elm Ave	Apt 3D	Philadelphia	Pennsylvania	USA	19104	2023-06-10
100033	Amelia	Hall	1112223333	amelia.hall@gmail.com	456 Pine Dr		Washington	D.C.	USA	20002	2024-03-20
100034	Noah	Wilson	9860590608	noah.wilson@gmail.com	654 Oakwood St		Atlanta	Georgia	USA	30302	2023-08-05
100035	Mia	Brooks	4234589070	mia.brooks@gmail.com	987 Maple Ave		Chicago	Illinois	USA	60606	2024-02-15
100036	Jack	Ross	6738020034	jack.ross@gmail.com	654 Pine St	Apt 9B	Dallas	Texas	USA	75203	2023-09-30

Employees Table:														
empid	fname	lname	phn_num	email	department	post	doj	salary	employed	address_line1	address_line2	city	country	pin_code
1001	Michael	Johnson	1234567890	michael.johnson@gmail.com	Sales	Sales Manager	2020-03-15	45000	active	123 Main St	Apt 3C	CapeTown	USA	12345
1002	Boron	Smith	9874328976	boron.smith@cason.com	Marketing	Marketing Specialist	2019-10-20	40000	inactive	456 Elm St		Springfield	USA	54321
1003	David	Lee	9997772222	david.lee@gmail.com	HR	HR Manager	2021-01-10	35000	active	789 Oak St	Not 2A	Bruce	Australia	32891
1004	Yash	Kulkarni	9898989898	yash.kulkarni@msil.com	Finance	Accountant	2013-08-18	45000	active	Kothrud	Kesri Apt	Pune	India	98765
1005	Nisha	Shette	1234567890	nisha.shette@gmail.com	Sales	Salesman	2022-08-15	25000	active	Mango Rd		Kolkata	India	12334
1006	Sophie	Clark	4445566666	sophie.clark@gmail.com	Sales	Salesman	2020-06-06	25000	active	Oakville	Maple Blvd	Toronto	Canada	89303
1007	Daniel	Martinez	9876543210	daniel.martinez@gmail.com	IT	Engineer	2019-08-17	50000	inactive	Aurburn		New Mexico	USA	43210
1008	Wei	Chen	7776664444	wei.chen@gmail.com	Sales	Salesman	2020-01-01	25000	inactive	Meville	Milton	Toronto	Canada	87930
1009	Muhammad	Ali	5463218764	muhammad.ali@gmail.com	Marketing	Marketing Specialist	2020-02-15	40000	active	135 Sunflower St		Madrid	Spain	28001
1010	David	Wilson	1112233333	david.wilson@gmail.com	Operations	Supervisor	2023-07-12	58000	active	1010 Park Avenue	Suite 100	Metro City	USA	12345
1011	Emma	Martinez	4445566666	emma.martinez@gmail.com	Customer Service	Representative	2023-09-05	48000	active	2020 Elm Street		Service Town	USA	54321
1012	James	Garcia	7778889999	james.garcia@gmail.com	Research	Scientist	2023-08-20	75000	active	3030 Oak Lane		Research City	USA	67890
1013	Olivia	Rodriguez	2223334444	olivia.rodriguez@gmail.com	Engineering	Engineer	2023-10-15	70000	inactive	4040 Pine Street	Apt 201	Tech Town	USA	23456
1014	Ethan	Hernandez	5556667777	ethan.hernandez@gmail.com	Production	Manager	2023-11-30	65000	active	5050 Maple Avenue	Suite 301	Factory City	USA	34567
1015	Olivia	Smith	3334445555	olivia.smith@gmail.com	IT	Software Engineer	2023-12-15	60000	active	606 Elm Street	Apt 2B	Tech City	USA	56789
1016	Jason	Brown	7778899998	jason.brown@gmail.com	Sales	Sales Representative	2024-01-20	35000	active	789 Pine Avenue		Pineville	USA	45678
1017	Lily	Nguyen	5556667777	lily.nguyen@gmail.com	Finance	Financial Analyst	2024-02-10	55000	active	1010 Cedar Lane	Suite 101	Finance City	USA	67890
1018	William	Rodriguez	2223334444	william.rodriguez@gmail.com	Marketing	Marketing Manager	2024-03-05	70000	active	2020 Maple Street		Maplewood	USA	78901
1019	Emily	Kim	8889990000	emily.kim@gmail.com	Operations	Operations Manager	2024-04-01	65000	active	3030 Oak Street	Suite 202	Oakville	USA	90123

Products Table:					
prodid	name	category	price	brand	qty_avlbl
1001	Laptop X1	Laptop	1200	Acer	20
1002	Smartphone S10	Smartphone	800	Samsung	15
1003	Smart TV 55"	TV	1500	LG	10
1004	Wireless Headphones	Headphones	200	Sony	30
1005	Gaming Console 2000	Gaming Console	400	Microsoft	25
1006	Tablet Z	Tablet	600	Apple	12
1007	Digital Camera 12MP	Camera	300	Canon	18
1008	Wireless Router	Networking	100	TP-Link	40
1009	Portable Speaker	Speaker	150	JBL	22
1010	External Hard Drive	Storage	80	WD	35
1011	Smartwatch 3	Wearable	250	Fitbit	17
1012	Desktop PC Core i7	Desktop	1500	Dell	8
1013	Electric Shaver	Personal Care	50	Philips	45
1014	Wireless Mouse	Accessories	30	Logitech	50
1015	Vivobook 16X	Laptops	57000	ASUS	15
1016	Galaxy S24 Ultra	Phones	50000	Samsung	10
1017	Airdopes Hype	Audio	1500	Boat	30
1018	Surround Soundbar	Audio	30000	JBL	7
1019	OTG	Kitchen Appliance	15000	Bajaj	18
1020	2-door MQ13 Fridge	Kitchen Appliance	157000	Samsung	16
1021	Monitor 27"	Monitor	300	ASUS	14
1022	Wireless Earbuds	Earbuds	120	Bose	28
1023	Fitness Tracker	Wearable	80	Garmin	33
1024	Bluetooth Speaker	Speaker	70	Anker	21
1025	DSLR Camera Kit	Camera	900	Nikon	9
1026	Home Theater System	Audio System	1000	Sony	7
1027	Portable Projector	Projector	400	ViewSonic	11
1028	Gaming Headset	Headset	150	SteelSeries	16
1029	Smart Thermostat	Smart Home	200	Nest	13
1030	USB-C Docking Station	Accessories	120	Kensington	18
1031	4K UHD TV 65"	TV	2000	Samsung	10
1032	Noise Cancelling Headphones	Headphones	250	Sony	20
1033	Gaming Laptop GTX	Laptop	1500	MSI	15
1034	iPhone 15	Smartphone	1200	Apple	25
1035	Smart Home Security Camera	Security Camera	150	Ring	30
1036	Wireless Charging Pad	Accessories	50	Anker	50
1037	Robot Vacuum Cleaner	Smart Home	300	Roomba	12
1038	Action Camera 4K	Camera	200	GoPro	18
1039	Wi-Fi Range Extender	Networking	80	TP-Link	35
1040	Gaming Keyboard RGB	Accessories	100	Corsair	22
1041	Smart LED Bulb	Smart Home	20	Philips	40
1042	Wireless Gaming Mouse	Accessories	70	Razer	30
1043	Wireless Charging Earbuds	Earbuds	120	Apple	15
1044	Ultrawide Gaming Monitor	Monitor	800	LG	20
1045	Fitness Smartwatch	Wearable	150	Huawei	25
1046	4K Blu-ray Player	Media Player	300	Sony	10
1047	Portable Bluetooth Keyboard	Accessories	50	Logitech	40
1048	Wireless Surround Sound System	Audio System	1000	Bose	8
1049	Smart Doorbell Camera	Security Camera	200	Arlo	15
1050	High-Speed HDMI Cable	Accessories	20	AmazonBasics	100

Billing Table:								
billid	prodid	custid	empid	billdate	qty	gst	subtotal	paid
1	1003	100001	1008	2023-01-07	1	270	1770	Yes
2	1004	100001	1008	2023-01-07	3	72	872	Yes
3	1007	100006	1005	2024-02-03	1	54	354	Yes
4	1002	100003	1006	2023-04-15	2	144	944	Yes
5	1005	100004	1009	2023-05-20	1	72	472	No
6	1008	100007	1002	2024-06-10	2	18	118	Yes
7	1001	100002	1001	2023-07-18	1	216	1416	Yes
8	1006	100005	1003	2023-08-25	3	108	708	No
9	1003	100001	1008	2023-01-07	1	270	1770	Yes
10	1004	100001	1008	2023-01-07	3	72	872	Yes
11	1007	100006	1005	2024-02-03	1	54	354	Yes
12	1002	100003	1006	2023-04-15	2	144	944	No
13	1005	100004	1009	2023-05-20	1	72	472	No
14	1008	100007	1002	2024-06-10	2	18	118	No
15	1001	100002	1001	2023-07-18	1	216	1416	Yes
16	1006	100005	1003	2023-08-25	3	108	708	Yes
17	1009	100008	1019	2023-09-10	2	54	354	No
18	1020	100010	1015	2023-10-15	1	28140	158140	Yes
19	1011	100012	1007	2024-01-05	1	45	295	Yes
20	1005	100014	1013	2023-12-01	2	72	472	Yes
21	1018	100015	1017	2024-02-20	1	5400	30500	No
22	1033	100016	1012	2023-11-01	1	270	1770	Yes
23	1025	100017	1014	2024-03-28	1	162	1062	No
24	1030	100018	1010	2024-04-15	3	64.8	424.8	Yes
25	1021	100019	1011	2024-02-28	2	54	354	Yes
26	1023	100022	1016	2024-01-15	1	14.4	94.4	Yes
27	1012	100023	1008	2023-12-18	1	270	1770	No
28	1026	100025	1018	2023-06-01	1	180	1180	Yes
29	1028	100026	1018	2024-03-15	2	54	354	Yes
30	1034	100027	1012	2023-10-05	1	216	1416	No
31	1029	100029	1018	2023-07-10	1	36	236	Yes
32	1020	100031	1015	2023-09-25	1	28140	158140	Yes
33	1013	100033	1013	2024-03-30	2	45	295	No
34	1032	100034	1017	2023-08-15	1	45	295	Yes
35	1040	100035	1014	2024-01-10	1	36	236	Yes
36	1035	100036	1019	2023-10-30	1	45	295	Yes