

Comprehensive Analytical Master Workbook

A Structured Compendium of 20 Comprehensive Data Engineering, Financial, and Management Sheets

Assignment 1: Student Result Sheet Data

Roll No	Name	Hindi	English	Maths	Science	Computer	Total	Percentage	Grade	Rank
101	Anas	78	82	91	75	88	414	82.80	A	5
102	Ayaan	65	71	69	73	77	355	71.00	B	7
103	Zoya	89	92	95	88	91	455	91.00	A+	3
104	Sana	55	61	58	67	63	304	60.80	C	9
105	Ali	72	75	79	81	84	391	78.20	B	6
106	Fatima	91	89	94	90	93	457	91.40	A+	2
107	Ahmed	48	52	55	49	57	261	52.20	F	10
108	Hina	83	86	88	80	85	422	84.40	A	4
109	Arman	67	72	70	68	74	351	70.20	B	8
110	Noor	95	96	98	94	97	480	96.00	A+	1

FUNCTIONAL LOGIC FORMULA REFERENCE LINES:

`=SUM(Hindi:Computer)` [Calculates the sum of all subject marks]
`=AVERAGE(Hindi:Computer)` [Calculates the percentage based on 5 subjects]
`=IF(Percentage>=90,"A+",IF(Percentage>=80,"A",IF(Percentage>=70,"B",IF(Percentage>=60,"C","F"))))` [Grades]
`=RANK(Total, All_Totals_Range)` [Finds the comparative position of the student in the class]

Assignment 2: Employee Salary Sheet Data

Emp ID	Employee Name	Basic Salary	HRA (20%)	DA (15%)	PF (12%)	Net Salary
E001	Ravi	₹25,000	₹5,000	₹3,750	₹3,000	₹30,750
E002	Mohit	₹30,000	₹6,000	₹4,500	₹3,600	₹36,900
E003	Aamir	₹28,000	₹5,600	₹4,200	₹3,360	₹34,440
E004	Pooja	₹35,000	₹7,000	₹5,250	₹4,200	₹43,050
E005	Neha	₹27,000	₹5,400	₹4,050	₹3,240	₹33,210
E006	Salman	₹32,000	₹6,400	₹4,800	₹3,840	₹39,360
E007	Riya	₹40,000	₹8,000	₹6,000	₹4,800	₹49,200
E008	Imran	₹26,000	₹5,200	₹3,900	₹3,120	₹31,980
E009	Sonam	₹29,000	₹5,800	₹4,350	₹3,480	₹35,670
E010	Aditya	₹38,000	₹7,600	₹5,700	₹4,560	₹46,740

📌 FUNCTIONAL LOGIC FORMULA REFERENCE LINES:

=Basic_Salary * 20% [Calculates House Rent Allowance]
=Basic_Salary * 15% [Calculates Dearness Allowance]
=Basic_Salary * 12% [Calculates Provident Fund Deduction]
=Basic_Salary + HRA + DA - PF [Calculates the Final Take-home Net Salary]

Assignment 3: School Fee Management Data

Adm No	Student Name	Monthly Fee	Paid Amount	Due Amount	Status
5001	Ali	₹1,200	₹1,200	₹0	Paid
5002	Sana	₹1,200	₹1,000	₹200	Pending
5003	Arman	₹1,500	₹1,500	₹0	Paid
5004	Hina	₹1,800	₹1,000	₹800	Pending
5005	Zoya	₹2,000	₹2,000	₹0	Paid
5006	Ahmed	₹1,200	₹800	₹400	Pending
5007	Noor	₹1,500	₹1,500	₹0	Paid
5008	Fatima	₹1,800	₹1,200	₹600	Pending
5009	Ayaan	₹2,000	₹1,500	₹500	Pending
5010	Anas	₹1,200	₹1,200	₹0	Paid

📌 FUNCTIONAL LOGIC FORMULA REFERENCE LINES:

=Monthly_Fee - Paid_Amount [Computes remaining balance to be recovered]
=IF(Due_Amount<=0, "Paid", "Pending") [Generates real-time clearance status]

Assignment 4: Sales Analysis Data

Month	Sales Value
Jan	₹45,000
Feb	₹52,000
Mar	₹48,000
Apr	₹61,000
May	₹58,000
Jun	₹70,000
Jul	₹75,000
Aug	₹69,000
Sep	₹72,000
Oct	₹81,000
Nov	₹86,000
Dec	₹92,000

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=SUM(Sales_Range) [Aggregates overall annualized sales value]
=AVERAGE(Sales_Range) [Extracts generalized operational monthly run-rate]
=MAX(Sales_Range) [Identifies peak fiscal turnover month]
=MIN(Sales_Range) [Identifies bottom foundational fiscal month]

Assignment 5: Inventory Management Data

Item Name	Purchased	Sold	Balance Stock	Reorder Status
Pen	500	350	150	Reorder
Pencil	800	620	180	Reorder
Notebook	400	280	120	Reorder
Eraser	600	420	180	Reorder
Sharpener	300	190	110	OK
Marker	200	130	70	OK
Register	250	180	70	Reorder
Scale	350	230	120	OK

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Purchased - Sold [Tracks remaining physical assets in storage warehouse]
=IF(Balance_Stock<=(Purchased*30%), "Reorder", "OK") [Triggers supply replenishment signal]

Assignment 6: Bank Loan & EMI Sheet

Loan ID	Client Name	Principal	Rate (p.a.)	Tenure (Yrs)	Monthly EMI
L901	Kabir	₹500,000	8.5%	5 Yrs	₹10,258
L902	Preeti	₹250,000	9.5%	3 Yrs	₹8,008
L903	Rahul	₹1,200,000	7.9%	15 Yrs	₹11,399
L904	Simran	₹400,000	10.0%	4 Yrs	₹10,145
L905	Vikas	₹850,000	8.8%	7 Yrs	₹13,590

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=PMT(Rate/12, Tenure*12, -Principal) [Standard amortization formula calculating uniform monthly installment payments]

Assignment 7: E-Commerce Product Discount Log

SKU Code	Product Category	List Price	Discount %	Discount Amt	Final Price
PROD01	Electronics	₹45,000	15%	₹6,750	₹38,250
PROD02	Apparel	₹2,500	25%	₹625	₹1,875
PROD03	Home Decor	₹8,900	10%	₹890	₹8,010
PROD04	Footwear	₹4,200	20%	₹840	₹3,360
PROD05	Fitness	₹15,000	5%	₹750	₹14,250

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=List_Price * Discount_% [Calculates exact currency markdown value]
=List_Price - Discount_Amt [Determines actual consumer transaction checkout price]

Assignment 8: Hotel Room Booking Invoice

Guest Name	Room Type	Tariff / Night	Nights Stayed	Gross Total	GST (18%)	Net Payable
John Doe	Deluxe	₹4,500	4	₹18,000	₹3,240	₹21,240
M. Smith	Suite	₹8,500	2	₹17,000	₹3,060	₹20,060
A. Khan	Standard	₹2,200	5	₹11,000	₹1,980	₹12,980
S. Zhang	Deluxe	₹4,500	3	₹13,500	₹2,430	₹15,930
E. Rossi	Suite	₹8,500	7	₹59,500	₹10,710	₹70,210

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Tariff_Per_Night * Nights_Stayed [Computes basic base lodging cost structure]
=Gross_Total * 18% [Imposes institutional value added service tax lines]
=Gross_Total + GST [Sums tax overheads to yield aggregate client settlement statement]

Assignment 9: Car Showroom Commission Ledger

Sales Executive	Vehicles Sold	Total Sales Value	Base Pay	Comm Rate	Comm Earned	Gross Payout
Rajesh	4	₹3,200,000	₹20,000	3%	₹96,000	₹116,000
Ananya	6	₹5,400,000	₹20,000	5%	₹270,000	₹290,000
Vikram	3	₹2,100,000	₹20,000	3%	₹63,000	₹83,000
Meera	8	₹7,600,000	₹20,000	5%	₹380,000	₹400,000
Karan	2	₹1,500,000	₹20,000	3%	₹45,000	₹65,000

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=IF(Total_Sales>5000000, 5%, 3%) [Tiered dynamic scaling incentive parameter mapping based on throughput]
=Total_Sales_Value * Comm_Rate [Evaluates secondary targeted commission performance yields]
=Base_Pay + Comm_Earned [Aggregates direct structured professional payroll envelope]

Assignment 10: Hospital Patient Billing Data

Patient ID	Name	Ward Charges	Doctor Fee	Pharmacy	Gross Bill	Ins Covered	Out of Pocket
P-201	Harish	₹15,000	₹8,000	₹4,500	₹27,500	70%	₹8,250
P-202	Gita	₹35,000	₹18,000	₹12,000	₹65,000	85%	₹9,750
P-203	Yunus	₹8,000	₹4,000	₹2,100	₹14,100	0%	₹14,100
P-204	Nisha	₹22,000	₹11,000	₹6,800	₹39,800	50%	₹19,900
P-205	Peter	₹45,000	₹25,000	₹15,400	₹85,400	90%	₹8,540

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Ward_Charges + Doctor_Fee + Pharmacy [Calculates corporate compounding base treatment cost lines]
=Gross_Bill * Ins_Covered_% [Determines direct third party medical insurance claim values]
=Gross_Bill - Ins_Covered [Identifies individual outstanding retail settlement liabilities]

Assignment 11: Transport Logistics & Freight Tracker

Trip ID	Driver Name	Distance (KM)	Fuel Used (Ltr)	Mileage (KM/L)	Fuel Cost	Toll Expense	Total Trip Cost
TRIP-01	Gurpreet	450 KM	60 L	7.5 KM/L	₹6,120	₹600	₹6,720
TRIP-02	Satish	820 KM	115 L	7.1 KM/L	₹11,730	₹1,500	₹13,230
TRIP-03	Asif	310 KM	38 L	8.2 KM/L	₹3,876	₹600	₹4,476
TRIP-04	Deepak	600 KM	80 L	7.5 KM/L	₹8,160	₹1,500	₹9,660
TRIP-05	Sukhdev	1100 KM	150 L	7.3 KM/L	₹15,300	₹1,500	₹16,800

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Distance / Fuel_Used [Tracks raw engine operational utility index metrics]
=Fuel_Used * Fuel_Rate_Per_Litre [Translates volume consumption metrics to economic weight lines]
=Fuel_Cost + Toll_Expense [Aggregates entire core fleet distribution operation overhead lines]

Assignment 12: Real Estate Rental Portfolio

Property Unit	Owner	Monthly Rent	Maintenance Fee	Annual Gross Price	Property Tax	Net Annual Yield
Unit A-101	Verma Builders	₹35,000	₹3,500	₹462,000	₹23,100	₹438,900
Unit B-304	Malhotra	₹48,000	₹4,500	₹630,000	₹31,500	₹598,500
Unit C-502	Sharma Trust	₹22,000	₹2,000	₹288,000	₹14,400	₹273,600
Unit A-908	Kapoor	₹65,000	₹6,000	₹852,000	₹42,600	₹809,400
Unit B-702	Gupta Inc	₹29,000	₹3,000	₹384,000	₹19,200	₹364,800

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=(Monthly_Rent + Maintenance_Fee) * 12 [Extrapolates macro compound annual commercial turnover benchmarks]
=Annual_Gross * 5% [Computes continuous local regulatory municipal physical framework tax lines]
=Annual_Gross - Property_Tax [Derives final localized net real estate investment dividend outputs]

Assignment 13: Project Milestone & Task Tracker

Task ID	Task Description	Allocated Days	Actual Days Taken	Variance	Efficiency Status
TSK-01	Database Schema Design	10	8	-2	Highly Efficient
TSK-02	API Endpoint Creation	15	18	+3	Delayed/Overrun
TSK-03	Frontend UI Assembly	20	20	+0	Highly Efficient
TSK-04	Security Integration	12	10	-2	Highly Efficient
TSK-05	QA User Acceptance Test	8	14	+6	Delayed/Overrun

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Actual_Days_Taken - Allocated_Days [Evaluates schedule deviations. Negative reflects ahead of plan; positive indicates delay]
=IF(Variance<=0, "Highly Efficient", "Delayed/Overrun") [Measures production delivery benchmarks]

Assignment 14: Gym Membership Plan Roster

Member Name	Plan Type	Base Plan Fee	Add-on Trainer	Trainer Fee	Subtotal	Loyalty Disc	Total Invoice
Aman	Annual	₹18,000	Yes	₹5,000	₹23,000	₹2,300	₹20,700
Rohan	Monthly	₹2,000	No	₹0	₹2,000	₹0	₹2,000
Kriti	Quarterly	₹5,500	Yes	₹3,500	₹9,000	₹0	₹9,000
Sneha	Annual	₹18,000	No	₹0	₹18,000	₹1,800	₹16,200
Vijay	Quarterly	₹5,500	Yes	₹3,500	₹9,000	₹0	₹9,000

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Base_Plan_Fee + Trainer_Fee [Combines foundational access options with supplemental human resource allocations]
=IF(Plan_Type="Annual", Subtotal*10%, 0) [Applies customer retention markdown percentages based on commitment]
=Subtotal - Loyalty_Discount [Determines total point of sale payment balance lines]

Assignment 15: Electricity Consumption Billing Data

Meter ID	Consumer Name	Prev Reading	Curr Reading	Units Consumed	Energy Charge	Fixed Levy	Total Bill
ELEC-881	R. K. Mehra	4250	4680	430	₹2,795.00	₹250	₹3,045.00
ELEC-882	S. Tendulkar	11200	12150	950	₹6,175.00	₹250	₹6,425.00
ELEC-883	P. Gopichand	7400	7650	250	₹1,625.00	₹250	₹1,875.00
ELEC-884	A. Premji	23450	24800	1350	₹8,775.00	₹250	₹9,025.00
ELEC-885	M. Ali	5100	5320	220	₹1,430.00	₹250	₹1,680.00

📌 FUNCTIONAL LOGIC FORMULA REFERENCE LINES:
=Current_Reading - Previous_Reading [Extracts volumetric utility consumption rates]
=Units_Consumed * 6.50 [Calculates progressive commercial step tariff metrics at fixed unit pricing tier]
=Energy_Charge + Fixed_Levy [Builds compounding grid infrastructure asset billing statements]

Assignment 16: Mobile Retail Store Stock Registry

Model Variant	Opening Stock	New Receipts	Units Despatched	Available Stock	Stock Value	Status Flag
iPhone 15 Pro	45	20	38	27	₹2,025,000	Optimal
Galaxy S24 Ultra	30	15	22	23	₹1,955,000	Optimal
OnePlus 12	60	40	55	45	₹1,890,000	Optimal
Pixel 8 Pro	25	10	14	21	₹1,428,000	Optimal
Redmi Note 13	120	80	135	65	₹1,040,000	Optimal

📌 FUNCTIONAL LOGIC FORMULA REFERENCE LINES:
=(Opening_Stock + New_Receipts) - Units_Despatched [Maintains rolling structural retail inventory volumes]
=Available_Stock * Unit_Price [Translates tangible floor holdings into raw capital valuations]
=IF(Available_Stock<20, "Critical Restock", "Optimal") [Generates operational product pipeline flags]

Assignment 17: Freelancer Consultant Timesheet

Consultant Name	Core Competency	Hourly Rate	Billable Hours	Gross Earnings	TDS Deduct (10%)	Net Remittance
Dr. Arun	Cloud Architecture	₹3,500	45	₹157,500	₹15,750	₹141,750
Ms. Priya	UI/UX Strategy	₹2,200	60	₹132,000	₹13,200	₹118,800
Mr. David	Cybersecurity Audit	₹4,000	30	₹120,000	₹12,000	₹108,000
Shreya	Data Analytics	₹2,800	80	₹224,000	₹22,400	₹201,600
Nitin	DevOps Pipelines	₹3,000	50	₹150,000	₹15,000	₹135,000

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Hourly_Rate * Billable_Hours [Quantifies high value structural corporate service deliveries]
=Gross_Earnings * 10% [Calculates statutory fiscal source withholding revenue standard parameters]
=Gross_Earnings - TDS_Deduction [Determines immediate clean direct bank wire disbursement profiles]

Assignment 18: Restaurant POS Terminal Audit

Table ID	Server Name	Food Bill	Beverage Bill	Subtotal	Service Charge (5%)	VAT (12.5%)	Final Invoice
Table 01	Marc	₹4,200	₹1,800	₹6,000	₹300	₹788	₹7,087.50
Table 04	Sophia	₹2,150	₹450	₹2,600	₹130	₹341	₹3,071.25
Table 09	David	₹6,800	₹3,200	₹10,000	₹500	₹1,312	₹11,812.50
Table 02	Marc	₹1,550	₹300	₹1,850	₹92	₹243	₹2,185.31
Table 07	Elena	₹5,100	₹1,950	₹7,050	₹352	₹925	₹8,327.81

 **FUNCTIONAL LOGIC FORMULA REFERENCE LINES:**
=Food_Bill + Beverage_Bill [Consolidates core transactional consumption parameters]
=Subtotal * 5% [Applies operations personnel service distribution yields]
=(Subtotal + Service_Charge) * 12.5% [Imposes regular localized hospitality transactional tax lines]
=Subtotal + Service_Charge + VAT [Aggregates overall gross customer restaurant checkout line]

Assignment 19: Cinema Theatre Box Office Sheet

Movie Title	Screens Active	Total Tickets Sold	Avg Ticket Price	Gross Revenue	Distributor Share	Net Theatre Profit
Sci-Fi Saga 2	4	18,500	₹250	₹4,625,000	₹2,543,750	₹2,081,250
Rom-Com Rules	2	6,200	₹180	₹1,116,000	₹502,200	₹613,800
Action Overload	5	24,000	₹220	₹5,280,000	₹3,168,000	₹2,112,000
Horror Night 3	3	11,500	₹200	₹2,300,000	₹1,150,000	₹1,150,000
Indie Drama X	1	2,800	₹150	₹420,000	₹168,000	₹252,000

FUNCTIONAL LOGIC FORMULA REFERENCE LINES:

=Total_Tickets_Sold * Avg_Ticket_Price [Quantifies baseline entertainment product retail volumes]
=Gross_Revenue * Distributor_Share_% [Isolates original content production studio contractual royalties]
=Gross_Revenue - Distributor_Share [Derives localized net operational theater venue profit segments]

Assignment 20: Academic Research Grant Ledger

Project Code	Principal Investigator	Total Grant Fund	Equipment Spend	Travel & Stipends	Consumables	Unspent Balance	Util %
GRANT-A91	Dr. Swaminathan	₹2,500,000	₹1,200,000	₹450,000	₹350,000	₹500,000	80.0%
GRANT-B04	Prof. Hawking	₹5,000,000	₹2,800,000	₹950,000	₹420,000	₹830,000	83.4%
GRANT-C15	Dr. Kurien	₹1,500,000	₹400,000	₹310,000	₹580,000	₹210,000	86.0%
GRANT-D32	Dr. Kalam	₹8,000,000	₹4,500,000	₹1,800,000	₹900,000	₹800,000	90.0%
GRANT-E77	Prof. Bose	₹3,000,000	₹1,100,000	₹600,000	₹400,000	₹900,000	70.0%

FUNCTIONAL LOGIC FORMULA REFERENCE LINES:

=Total_Grant_Fund - (Equipment + Travel + Consumables) [Monitors remaining institutional allocations]
=((Total_Grant_Fund - Unspent_Balance) / Total_Grant_Fund) * 100 [Tracks public fund execution efficiency ratings]