



Kazakh-British Technical University
School of Information Technologies and Engineering

Laboratory work №1

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INTRODUCTION

In this laboratory work, set of tasks is designed to improve the accuracy and efficiency of financial data analysis in Excel by combining formatting, formulas, and automation with macros. The project emphasizes proper data preparation, clear presentation, and the use of analytical tools such as filtering, sorting, and forecasting. By following these steps, the analysis becomes more structured, reliable, and easier to interpret for informed decision-making.

Part №1

Task №1

	A	B	C	D	E	F
1	Order No	Order Date	Customer Name	House number	Street	Customer Type

Figure 1 – Bold Style

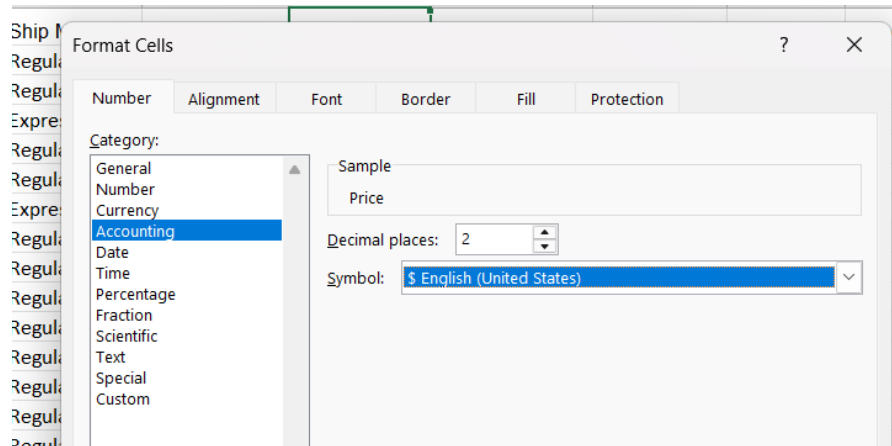


Figure 2 – Format cells

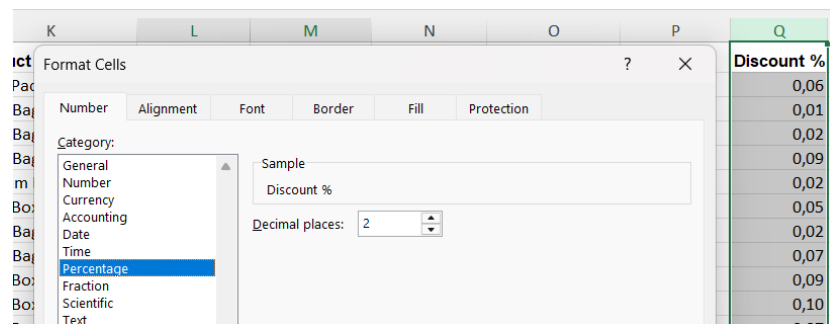


Figure 3 – Percentage format

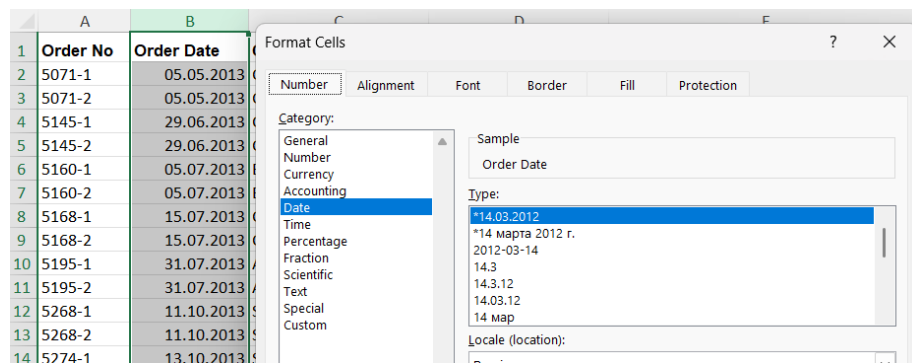


Figure 4 – Date format

	A
1	Order No
2	5014-1
3	5016-1
4	5018-1
5	5019-1
6	5020-1
7	5022-1
8	5023-1
9	5024-1
10	5025-1
11	5027-1

Figure 5 – Result of date

	Price	Quantity	Revenue
12	\$ 5,58	29	=n2*o2=
13	\$ 4,26	29	

Figure 6 – Revenue column

	Revenue	Discount %	Discount \$
29	\$ 161,82	3,00%	=p2*q2=

Figure 7 – Discount column

	Revenue	Discount %	Discount \$	Discounted Revenue
1	\$ 161,82	3,00%	\$ 4,85	=p2-r2

Figure 8 – Discount revenue column

	Discounted Revenue	Shipping Cost	Total Revenue
1	\$ 156,97	\$ 2,99	=s2+t2

Figure 9 – Total revenue column

	U
Cost	Total Revenue
2,99	\$ 159,96
1,20	\$ 121,03
1,93	\$ 146,84
26,30	\$ 694,05
0,70	\$ 35,33

Figure 10 – Result of Total revenue column

\$ 1,14	28	\$ 31,92	9,00%	\$ 2,87	\$ 29,05	\$ 0,70	\$ 29,75
\$ 23 651,66	\$ 13 360,00	\$ 558 561,47	\$ 26,99	\$ 32 933,7	\$ 525 627,74	\$ 3 074,60	\$ 528 702,34

Figure 11 – Summary of column

18	\$ 131,04
28	\$ 31,92
10	\$ 558 561,47
	=AVERAGE(p2:p520)

Figure 12 – Average value

16-12-15	\$ 7,28
16-12-12	\$ 1,14
	\$ 23 651,66
	=max(n2:n520)

Figure 13 – Max value

2	\$ 1,14
	\$ 23 651,66
	\$ 599,99
	=min(n2:n520)

Figure 14 – Min value

=ROUNDUP(MONTH(C2)/3;0)

Figure 15 – Formula for quarter column

	A	B	
1	Order No	Quarter	O
2	5014-1	1	
3	5016-1	1	
4	5018-1	1	
5	5019-1	1	
6	5020-1	1	
7	5022-1	1	
8	5023-1	1	
9	5024-1	1	
10	5025-1	1	
11	5027-1	1	
12	5029-1	1	
13	5030-1	1	
14	5031-1	1	

Figure 16 – Quarter column

Task 2: Automation of financial data analysis using macros

Step 1: Data Preparation

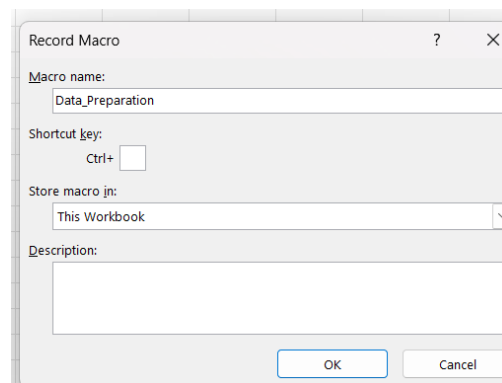


Figure 17 – Macros №1

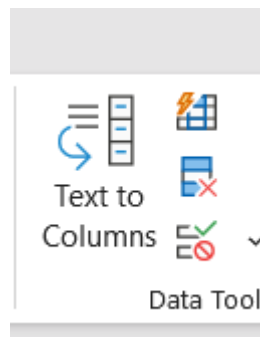


Figure 18 – Remove duplicates

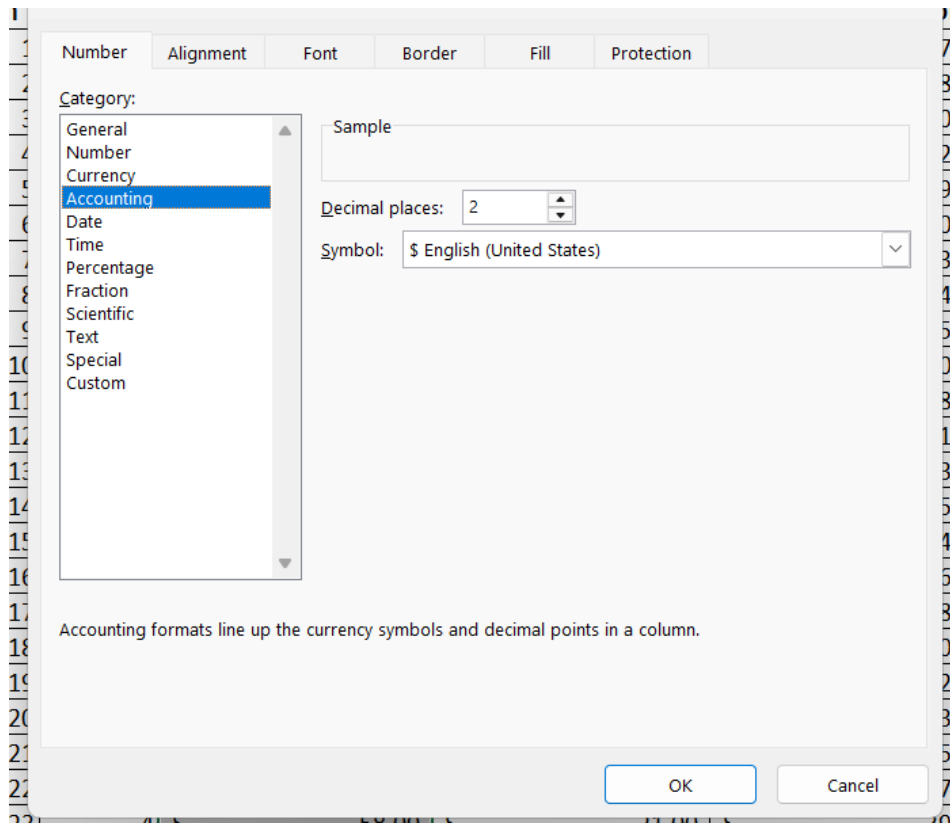


Figure 19 – Format cells

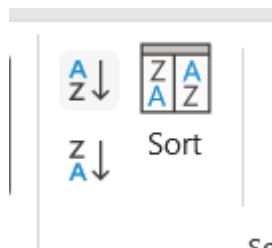


Figure 20 - Sort

Revenue (million)	Net profit (million)	Expenses (million)
\$ 10,00	\$ 3,00	\$ 7,00
\$ 12,00	\$ 4,00	\$ 8,00
\$ 15,00	\$ 5,00	\$ 10,00
\$ 18,00	\$ 6,00	\$ 12,00
\$ 14,00	\$ 4,50	\$ 9,00
\$ 16,00	\$ 5,00	\$ 10,00
\$ 20,00	\$ 7,00	\$ 13,00
\$ 22,00	\$ 7,50	\$ 14,00
\$ 25,00	\$ 8,00	\$ 15,00
\$ 30,00	\$ 10,00	\$ 20,00
\$ 28,00	\$ 9,50	\$ 18,00
\$ 32,00	\$ 11,00	\$ 21,00
\$ 35,00	\$ 12,00	\$ 23,00
\$ 38,00	\$ 13,00	\$ 25,00
\$ 36,00	\$ 12,50	\$ 24,00
\$ 40,00	\$ 14,00	\$ 26,00
\$ 42,00	\$ 15,00	\$ 28,00
\$ 45,00	\$ 16,00	\$ 30,00
\$ 48,00	\$ 17,00	\$ 32,00
\$ 50,00	\$ 18,00	\$ 33,00
\$ 52,00	\$ 19,00	\$ 35,00
\$ 55,00	\$ 20,00	\$ 37,00
\$ 58,00	\$ 21,00	\$ 39,00

Figure 21 – Result of all column

Step 2: Automated Analysis

Record Macro
?
X

Macro name:
Automated_Analysis

Shortcut key:
Ctrl+

Store macro in:
This Workbook

Description:

OK
Cancel

Figure 22 – Macros №2

Revenue (million)	Net profit (million)	Expenses (million)
\$ 12 676,00	\$ 4 878,00	=sum(d2:d102)

Figure 23 – Sum column

Revenue (million)	Net profit (million)	Expenses (million)
\$ 12 676,00	\$ 4 878,00	\$ 9 054,00

Figure 24 – Results of sum

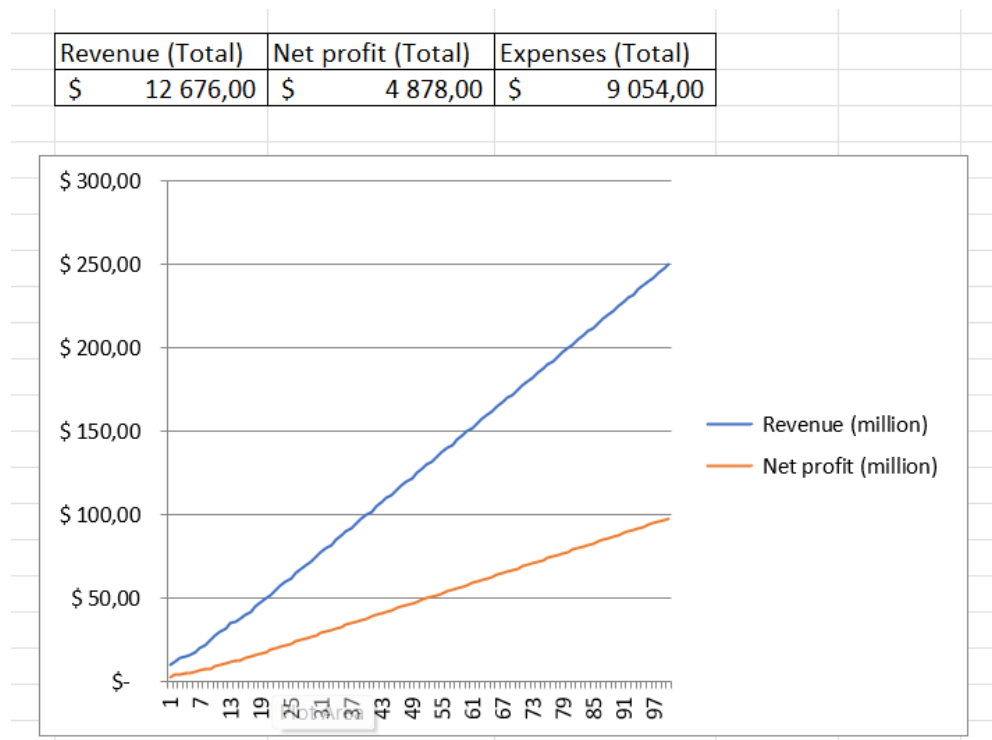


Figure 25 - Graph

Step 3: Forecasting and Scenario Analysis

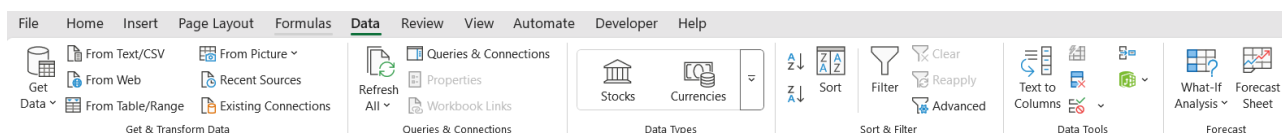


Figure 26 – Data tab

	B	C	D
Quarter	Revenue (million)	Net profit (million)	
1	\$ 10,00	\$ 3,00	
1	\$ 12,00	\$ 4,00	
1	\$ 15,00	\$ 5,00	
2	\$ 18,00	\$ 6,00	
2	\$ 14,00	\$ 4,50	
2	\$ 16,00	\$ 5,00	
3	\$ 20,00	\$ 7,00	
3	\$ 22,00	\$ 7,50	
3	\$ 25,00	\$ 8,00	
4	\$ 30,00	\$ 10,00	
4	\$ 28,00	\$ 9,50	
4	\$ 32,00	\$ 11,00	
1	\$ 35,00	\$ 12,00	
1	\$ 38,00	\$ 13,00	
1	\$ 36,00	\$ 12,50	
2	\$ 40,00	\$ 14,00	
2	\$ 42,00	\$ 15,00	
2	\$ 45,00	\$ 16,00	
2	\$ 48,00	\$ 17,00	

Figure 27 – Copy for Forecast Sheet

	B	C	D	E
	Net profit (million)	Forecast(Net profit (million))	Lower Confidence Bound(Net profit (million))	Upper Confidence Bound(Net profit (million))
1	\$ 48,50			
2	\$ 47,38			
3	\$ 48,19			
4	\$ 51,15	\$ 51,15	\$ 51,15	\$ 51,15
5	\$ 51,53	\$ 48,81	\$ 48,81	\$ 54,25

Figure 28 – Forecast Sheet

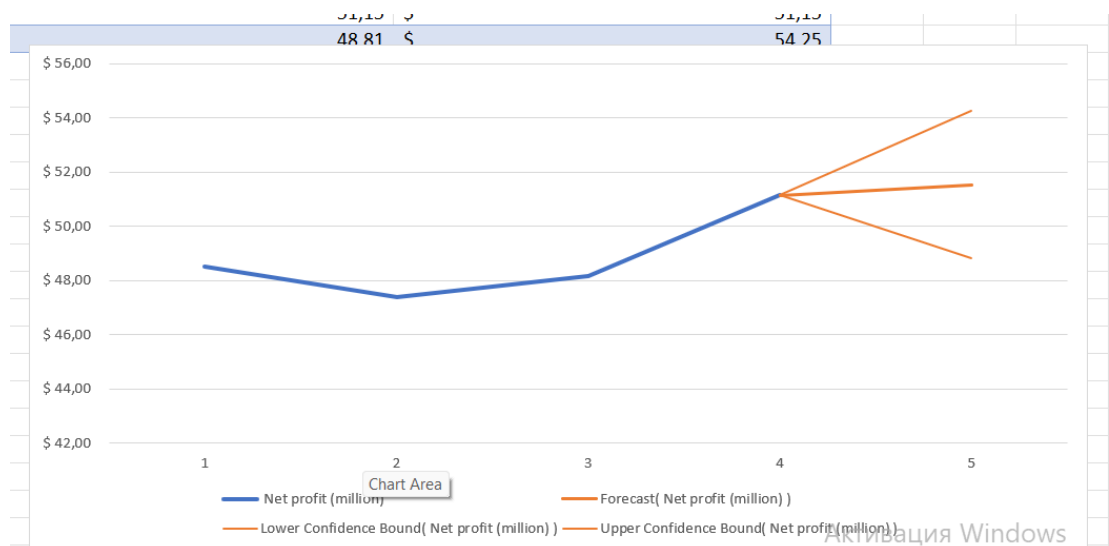


Figure 29 – Graph of Forecast Sheet

Step 4: Conclusions and recommendations

A	B	C	D	E
Quarter	Net profit (million)	Forecast(Net profit (million))	Lower Confidence Bound(Net profit (million))	Upper Confidence Bound(Net profit (million))
1	\$ 48,50			
2	\$ 47,38			
3	\$ 48,19			
4	\$ 51,15	\$ 51,15	\$ 51,15	\$ 51,15
5		\$ 51,53	\$ 48,81	\$ 54,25

Figure 30 – Result of Forecast Sheet

=IF(B2>B3;"In the next quarter, strengthen cost control and look for new sales channels.";"Invest in expansion in next quarters.")
--

Figure 31 - Comparison

In the next quarter, strengthen cost control and look for new sales channels.
Invest in expansion in next quarters.
Invest in expansion in next quarters.
In the next quarter, strengthen cost control and look for new sales channels.

Figure 32 – Answer of comparison

CONCLUSION

The completed work ensures that financial information is correctly formatted, systematically calculated, and visually represented for better understanding. Through automation and forecasting macros, the analysis not only highlights past and current results but also provides insights into future financial performance. These findings support practical recommendations, helping to strengthen planning, optimize costs, and improve strategic decisions.