100 Marks

Estimated Time to Complete: 3 hours
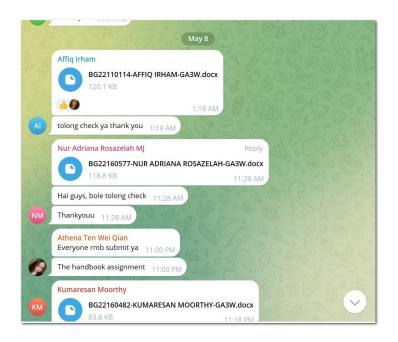
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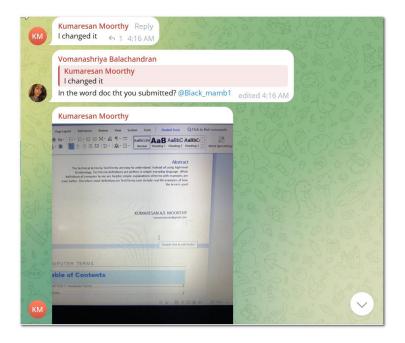**General Instructions**

1. This is a group assignment with individual submission. That means, each student must complete and submit this group assignment individually, as if it is an individual assignment.

2. However, there is only one submission to be taken randomly from among the group members for assessment. In other words, the marks for your group assignment are depending on the quality of someone from your group. Please note that you will get your group assignment marks only if you do the submission. If you do a late submission and your submission is taken for assessment, then only your marks will be penalised.

3. Therefore, all group members must take responsibility to complete a group assignment correctly. Everybody must cross-check each other's work to make sure all submissions from your group members are correct and fulfil the requirements from the instructions.

4. Check the spelling and grammar if suggested by the software.

5. After corrections, submit the final version of your assignment to ITEL before the due date.

6. Appoint a project manager to monitor the cross-checking activities so that everyone is counted.

7. All group-related activities are expected to be discussed in your Telegram group. There must be at least 10 chats related to this group assignment. See screenshots below.

8. All group members will receive **equal marks** unless stated otherwise. Any conflict should be resolved independently and rationally. Last resort can be consulted with the lecturer, but marks can be differently given to each member instead of equal marks depending on effort.

9. The maximum file size for this assignment is **5 MB**.

10. Submit the file in a **Excel** spreadsheet format only, with file extension, **xlsx**.

11. This assignment follows the Assignment Submission Policy as explained earlier in class.

Main Instructions

12. Create a blank workbook. Save it as *Question 3.xlsx*.

13. Rename the current worksheet as *Q3 (a)*. See the Figure below.

14. Enter the data in the *Q3 (a)* worksheet exactly in the corresponding cells as shown in the Figure below. At this stage, use only the default formatting.

	A	B	C	D
1	ID	Name	Salary	
2	5004	Kim	8741	
3	5099	Lee	10490	
4	5017	Park	11734	
5	5065	Choi	9462	
6	5021	Jung	8755	
7	5031	Kang	13416	
8	5092	Han	8691	
9				

15. Bold and centre the text in cells **A1**, **B1** and **C1**.

16. Centre the numbers from cells **A2** to **A8**.

17. Format cells **C2** to **C8** in **Accounting** format with the **$** symbol and **two** decimal places.

18. Enter "ID" in cell **E1**, "Name" in cell **E2**, and "Salary" in cell **E3**.

19. Bold the text in cells **E1**, **E2** and **E3**.

20. The data in *Q3(a)* worksheet shows a list of employees with their IDs in column **A**, names in column **B**, and salaries in column **C**.

21. Use the **VLOOKUP** function to show the name in cell **F2** and the salary in cell **F3** based on the ID entered in cell **F1**. For example, if you type "5017" in cell **F1**, "Park" will appear in cell **F2**, and his salary, $11,734.00, will appear in cell **F3**.

22. Type "5017" in cell **F1**. At this point, cells **F2** and **F3** will be empty. Create formulas using the **VLOOKUP** function in cell **F2** and another in cell **F3** to display the results in each cell.

23. Enter the formula =VLOOKUP(F1,A2:B8,2,FALSE) in cell **F2**.

    Press **Enter**, and the result of the formula will appear in cell **F2**. "Park" should show up in cell **F2**.

24. The formula =VLOOKUP(F1,A2:B8,2,FALSE) does the following:

    F1: It looks for the value in cell F1.

    A2:B8: It searches for that value in the range of cells from A2 to B8.

    2: Once it finds the value, it will return the result from the second column B in that range.

    FALSE: This means it will look for an exact match of the value in F1.

    So, this formula finds the value in F1 in the first column A, and if it finds it, it shows the corresponding value from the second column B in cell F2.

    See the Figure below.

F2			× ✓	*fx* ∨	=VLOOKUP(F1,A2:B8,2,FALSE)	
	A	B	C	D	E	F	G
1	ID	Name	Salary		ID	5017	
2	5004	Kim	$ 8,741.00		Name	Park	
3	5099	Lee	$10,490.00		Salary		
4	5017	Park	$11,734.00				
5	5065	Choi	$ 9,462.00				
6	5021	Jung	$ 8,755.00				
7	5031	Kang	$13,416.00				
8	5092	Han	$ 8,691.00				
9							

25. Now, create a formula using the **VLOOKUP** function in cell **F3** to show Park's salary, $11,734.00, in cell **F3**.

26. Centre the text in cell **F2**.

27. Format cell **F3** in **Accounting** format with the **$** symbol and **two** decimal places.

28. At this point, your *Q3 (a)* worksheet should look similar to the Figure below.

	A	B	C	D	E	F	G
1	ID	Name	Salary		ID	5017	
2	5004	Kim	$ 8,741.00		Name	Park	
3	5099	Lee	$10,490.00		Salary	$11,734.00	
4	5017	Park	$11,734.00				
5	5065	Choi	$ 9,462.00				
6	5021	Jung	$ 8,755.00				
7	5031	Kang	$13,416.00				
8	5092	Han	$ 8,691.00				
9							

Study the formulas.

29. Let's try the formula with a different value. Type "5099" in cell **F1**. You should see "Lee" in cell **F2** and $10,490.00 in cell **F3**.

30. However, if you type 5001 in cell F1, you will see #N/A in both cells **F2** and **F3** because 5001 is not in the ID column (column A).

31. Insert a new worksheet after the *Q3(a)* worksheet. Rename the new worksheet as *Q3(b)* worksheet.

32. Enter the data in the *Q3 (b)* worksheet exactly in the corresponding cells as shown in the Figure below. At this stage, use only the default formatting. You can auto-fit any column to display the content properly.

	A	B	C	D
1	TABLE 1: Income Groups			
2	Income Range (Common)	Income Range (VLOOKUP)	Income Group	
3	Less than $3,000		G1	
4	$3,000 - $3,700		G2	
5	$3,701 - $4,800		G3	
6	$4,801 and above		G4	
7				
8	TABLE 2: Households & Income Groups			
9	Name	Income	Income Group	
10	Priya	4071		
11	Rohan	3181		
12	Ananya	4953		
13	Meera	2709		
14	Karan	5641		
15	Arjun	4435		
16	Rahul	3135		
17				

33. Bold the text in cells **A1** and **A8**.

34. Merge the cells from **A1** to **C1** and centre the text in the merged cell. Watch the video here: https://go.screenpal.com/watch/cZlteOneXHR

35. Merge the cells from **A8** to **C8** and centre the text in the merged cell.

36. Bold and centre the text in cells **A2**, **B2** and **C2**.

37. Bold and centre the text in cells **A9**, **B9** and **C9**.

38. Set the width of column **A** to 16.

39. Then, apply text wrapping to cell **A2**.

40. Set the width of column **B** to 12.

41. Then, apply text wrapping to cell **B2**.

42. Set the width of column **C** to 7.

43. Then, apply text wrapping to cells **C2** and **C9**.

44. At this point, your *Q3 (b)* worksheet should look similar to the Figure below.

	A	B	C	D
1	**TABLE 1: Income Groups**			
2	**Income Range (Common)**	**Income Range (VLOOKUP)**	**Income Group**	
3	Less than $3,000		G1	
4	$3,000 - $3,700		G2	
5	$3,701 - $4,800		G3	
6	$4,801 and above		G4	
7				
8	**TABLE 2: Households & Income Groups**			
9	**Name**	**Income**	**Income Group**	
10	Priya	4071		
11	Rohan	3181		
12	Ananya	4953		
13	Meera	2709		
14	Karan	5641		
15	Arjun	4435		
16	Rahul	3135		
17				

45. The data in *Q3(b)* worksheet shows two tables, TABLE 1 and TABLE 2.

    TABLE 1 is called Income Groups and it has three columns; Income Range (Common) in column **A**, Income Range (VLOOKUP) in column **B** and Income Group in column **C**.

    TABLE 2 is called Households & Income Groups, also has three columns; Name in column **A**, Income in column **B** and Income Group in column **C**.

46. Your task is to fill in the income group for each household in column **C** of TABLE 2 using the **VLOOKUP** function. The income group for each household should be based on the income ranges in TABLE 1.

47. TABLE 1 has two columns of income ranges. The first column **A** shows the income ranges in a standard or common format, while the second column **B** shows the income ranges in a format that the VLOOKUP function can read. Currently, column **B** is empty, and you need to fill it in with the income ranges.

48. In TABLE 1, do the following:

    For an income range less than $3,000, type 0 in cell **B3**.

    For an income range between $3,000 and $3,700, type 3000 in cell **B4**.

    For an income range between $3,701 and $4,800, type 3701 in cell **B5**.

    For an income range of $4,801 and above, type 4801 in cell **B6**.

49. Format cells **B3** to **B6** in **Accounting** format with the **$** symbol and **no** decimal places.

50. Centre the text in cells **C3** to **C6**.

51. Format cells **B10** to **B16** in **Accounting** format with the **$** symbol and **no** decimal places.

52. In TABLE 2, create a formula using the **VLOOKUP** function in cell **C10** to find the income group for the first household, Priya.

    Enter the formula =VLOOKUP(B10, $B$3:$C$6, 2, TRUE) in cell **C10**.

    Press Enter, and the result will appear in cell **C10**. "**G3**" should be displayed in cell **C10**.

53. The formula =VLOOKUP(B10, $B$3:$C$6, 2, TRUE) works like this:

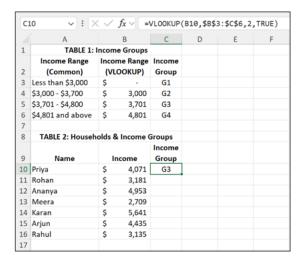   B10: It looks at the value in cell **B10** (Priya's income) to find which income group it belongs to.

    $B$3:$C$6: It searches for the income in the range of cells **B3** to **C6** (the income ranges and groups in TABLE 1). The dollar signs ($) keep the range fixed (absolute cell address) when copying the formula.

    2: After finding the range that matches Priya's income, it returns the value from the second column C in that range.

    TRUE: This allows the formula to find the closest match within the income ranges (as long as the ranges are sorted in ascending orders).

    The result in cell **C10** will show Priya's income group, based on the income ranges in TABLE 1.

    See the Figure below.

C10		f_x	=VLOOKUP(B10,$B$3:$C$6,2,TRUE)		
	A	B	C	D	E	F
1	TABLE 1: Income Groups					
2	Income Range (Common)	Income Range (VLOOKUP)	Income Group			
3	Less than $3,000	$ -	G1			
4	$3,000 - $3,700	$ 3,000	G2			
5	$3,701 - $4,800	$ 3,701	G3			
6	$4,801 and above	$ 4,801	G4			
7						
8	TABLE 2: Households & Income Groups					
9	Name	Income	Income Group			
10	Priya	$ 4,071	G3			
11	Rohan	$ 3,181				
12	Ananya	$ 4,953				
13	Meera	$ 2,709				
14	Karan	$ 5,641				
15	Arjun	$ 4,435				
16	Rahul	$ 3,135				
17						

54. Priya's income is $4071, which is in cell **B10**. The VLOOKUP formula checks this income against the income ranges in TABLE 1 (cells B3 to B6). The formula looks for the closest range that is less than or equal to $4071. It finds that $4071 falls in the range starting from $3701 (in cell B5). The second column (column C) in that row says "G3," so the formula returns "G3" as Priya's income group. This is why Priya's income group is G3.

55. Now, copy the formula from cell **C10** and use the **Fill Handle** to paste it into the other cells in the same column. This will find the income groups for the other households. This feature is called **Auto Fill**.

56. Centre the text in cells **C10** to **C16**.

57. At this point, your *Q3 (b)* worksheet should look similar to the Figure below.

	A	B	C	D
1	TABLE 1: Income Groups			
2	Income Range (Common)	Income Range (VLOOKUP)	Income Group	
3	Less than $3,000	$ -	G1	
4	$3,000 - $3,700	$ 3,000	G2	
5	$3,701 - $4,800	$ 3,701	G3	
6	$4,801 and above	$ 4,801	G4	
7				
8	TABLE 2: Households & Income Groups			
9	Name	Income	Income Group	
10	Priya	$ 4,071	G3	
11	Rohan	$ 3,181	G2	
12	Ananya	$ 4,953	G4	
13	Meera	$ 2,709	G1	
14	Karan	$ 5,641	G4	
15	Arjun	$ 4,435	G3	
16	Rahul	$ 3,135	G2	
17				

Study the formulas.

58. **Tips**: To learn how to create this this formula, refer to **Chapter 7: VLOOKUP Function** in the textbook Microsoft Excel for Absolute Beginners available at https://openbook.ums.edu.my/excelforabsolutebeginners/

Specific Instructions

59. Go to *Q3 (a)* worksheet.

Enter new data in the Q3 (a) worksheet exactly in the corresponding cells as shown in the Figure below.

	A	B	C	D	E
9	5061	Jung	5132		
10	5135	Seo	9490		
11	5138	Yoo	6363		
12	5130	Oh	7527		
13	5266	Shin	7839		
14					

60. Centre the numbers from cells **A9** to **A13**.

61. Format cells **C9** to **C13** in **Accounting** format with the **$** symbol and **two** decimal places.

62. Update the formula in cells **F2** and **F3** to include both the new data and the old data.

63. Type 5138 in cell **F1** and you should get Yoo in cell **F2** and $6,363.00 in cell **F3**.

64. At this point your work should be final if all instructions above are successfully completed.

65. Submit your work to ITEL before the due date.

Marks

Five (5) marks will be deducted should any instruction is not completed or is partially completed.