Practical Sheet 05
LibreOffice Calc - Activity

Exercise 01

The XYZ Company Ltd. Furnishes you the list of their employees and their taxable income

Name	Sex	Taxable income	Tax
saman	Male	239000	
Raja	Male	475000	
anne	Female	525000	
abiraham	Male	425000	
Kumara	Male	600000	

Compute tax based on the following criteria by using appropriate spreadsheet functions

I.   If the taxable income is below 250000 tax is Nil
II. If the taxable income is 250000 to 500000 tax rate is 10%
III. If income is above Rs. 500000 tax is @ 20%.

Exercise 02

Enter the information in the spreadsheet below. Be sure that the information is entered in the same cells as given, or the formulas will not work. The information is the stream of costs and benefits (in millions) estimated for a proposed city baseball stadium. Year 0 represents the initial investment while costs for years 1-10 are the maintenance costs incurred at the end of each year. The benefits are the revenues from sport team contracts and revenues at the end of each year.

	A	B	C	D	E	F
1	Cost-Bene fit Analysis : City Stadium					
2				Total	Discount	Present
3	Year	Costs	Benifits	Benifits	Factor	Value
4	0	60	0			
5	1	1	3			
6	2	1	3			
7	3	1	10			
8	4	1	10			
9	5	1.5	12.5			
10	6	1.5	12.5			
11	7	1.5	12.5			
12	8	1.5	15			
13	9	2	15			
14	10	2	15			
15						
16					NPV=	
17	Discount					
18	Rate=					
19						

I. Highlight the cell range B4:D14. Open the FORMAT menu, and select CELLS... Select the category CURRENCY, and select the format $1,234.10. Repeat this procedure for the cell range F4:F16.

II. Highlight cell B18. Open the FORMAT menu, and select CELLS... Select the category PERCENT, and select three decimal places

III. To determine the desirability of the project from an efficiency criteria, first, calculate the Total Benefit for each year of the project. To do this, enter the following formula. D4: = C4 - B4

IV. Copy the formula in cell D4 to cell range D 5:D14.

V.   We must next discount future costs and benefits to put them into today's value (i.e., find the present value). First, enter the following value for the discount rate (a 10% discount rate). B18: 0.1

VI.   Second, calculate the discount factor for each year. Enter the following formula.

   E4: =1 /(1+b18)^a 4

VII.   Copy the formula in cell E4 to the cell range E 5:E14.

VIII.   Third, multiply the total benefit for each year by the discount factor for each year. Enter the following formula.
   F4: = D4*E4

IX.   Copy the formula in cell F4 to the cell range F 5:F14

X.   Find the Net Present Value. Add together the Present Values for each year. Enter the following formula.
   F16: = sum(f 4:f14)
   Note: Steps 9-11 could be accomplished with one simple formula: =sumproduct(d4:d14,e4:e14)

XI.   Change the discount rate and see what happens to the Net Present Value of the stadium project. The project would not be cost-effective with a discount rate of 7% or below.

XII.   Enter the following information.

   A20: Shortcut:
   A21: NPV =
   A22: IRR =

XIII.   An easy way of calculating net present value can replace steps 7-12. Calc has a net present value function as follows: =NPV(rate,value1,value2,...) This function assumes that each value occurs at the end of consecutive years (i.e., year1, year 2, year 3,...). Since any initial investments (i.e., costs) occur at the beginning of the project and not at the end of year 1, these initial costs are added on to the result returned by the NPV function. For this exercise enter the following formula. B21: =npv(b18,d5:d14)+d4

XIV.   A usual piece of information for a cost-benefit analysis is the discount rate that returns a net present value of $0. This can be obtained with the IRR function as follows: =IRR(values) For this exercise enter the following formula.

Exercise 03

Enter the information in the spreadsheet below. Be sure that the information is entered in the same cells as given, or the formulas below will not work.

	A	B	C	D	E	F	G
			EXAM	EXAM	EXAM		FINAL
1	PSC 556: Policy Analysis						
2	Spring 1995						
3			EXAM	EXAM	EXAM		FINAL
4	STUDENT NAMES	STUDENT ID	#1	#2	#3	PART.	AVERAGE
5	Saman	999-25-5683	94	65	89	90	
6	Kumar	999-52-6938	93	91	97	80	
7	Kapila	998-71-2838	92	83	88	90	
8	Ravi	997-74-4447	95	94	90	90	

You will notice that when you enter the information in the first column, the text runs over into the next cell. To adjust the size of the column, once all the information is entered for the first column, click on the column heading (that is the letter A). Then open the FORMAT menu, select the COLUMN options, and then select the AUTOFIT SELECTION command.

1. Enter the formula below into cell G5 and copy it into cells G6 to G8. This demonstrates the use of a "relative reference" (e.g., C5) that points to the contents of a cell

> G5:   **=c5*.3+d5*.3+e5*.3+f5*.1**

Now copy this formula to cells G6, G7, and G8. To do this click on cell G5 to make it the active cell. Then open the EDIT menu and choose the COPY command (a flashing border should now appear around the cell G5). Now click on cell G6 and drag the pointer so the range of cells from G6 to G8 are now highlighted. At this point you need to open the EDIT menu again, but this time selected the PASTE option. . Notice that when you copy this formula into other cells the row numbers for the cells change according to the row into which the formula has been copied.

2. Enter the information below in the cell indicated.

> B10:   **Averages**

3. Enter the formulas below in the cells indicated. These formulas demonstrate three methods for calculating averages for a column of data.

> C10:   **=(c5+c6+c7+c8)/ 4**
> D10:   **=sum(d5:d8)/4**
> E10:   **=average(e5:e8)**

4. Enter the information below in the cells indicated. This will establish the weight each exam is given in a student's final average.

      B12:   **Weights**

      C12:   **.3**

      D12:   **.3**

      E12:   **.3**

      F12:   **.1**

5. Enter the formula below into cell G5 and then copy it into cells G6 to G8. This demonstrates the use of an "absolute reference" (e.g., C12) that points to a specific cell in a spreadsheet. Notice that when the formula is copied into other cells, the absolute reference remains the same whereas the relative references change according to the location into which the formula is copied.

      G5:   **= c12*c5+d12*d5+e12*e5+f12*f 5**

6. Make the changes to the cell contents indicated below and notice how the final averages change.

    a. D5: **74**

    b. C7: **98**

    c. C12: **.25** and E12: **.35**

    d. E12: **.30** and F12: **.15**

7. Just when you thought you were finished calculating final grades, you realize that you forgot someone. You know, that quiet student that always sits in the back of the room. Anyhow, you can start all over or simply insert a new row for the forgotten student.

    a. Move the cursor to row 6 and click once (on any cell in this row or the row heading). Open the INSERT menu, select ROWS option. Notice how a new row is inserted after row 6. Also, check the formulas entered into cells D11, E11, G5, G7, G8, and G9 have now all changed to accomodate the newly inserted row.

    b. Now that an additional student has been added to your grade book, the formulas used to calculate the averages for Exams #1 and #2 are incorrect (this is because these formulas still assume only four grades are to be averaged. To correct this, copy the formula in cell E11 to cells C11 and D11.

    c. Enter the information below in the identified cells.

        A6:   **Linder, Barry**

        B6:   **993-14-9283**

        C6:   **81**

        D6:   **73**

        E6:   **83**

        F6:   **65**

d. Notice that the exam averages change when the new student's grades are entered but a final average is not automatically calculated for him. This is because the formula was not copied into that new row. Copy the formula in cell G5 into cell G6. Now your grade roll is completed.

Your final spreadsheet should look like the one below.

	A	B	C	D	E	F	G
1	PSC 556: Policy Analysis						
2	Spring 1995						
3			EXAM	EXAM	EXAM		FINAL
4	STUDENT NAMES	STUDENT ID	#1	#2	#3	PART.	AVERAGE
5	Saman	999-25-5683	94	74	89	90	85.9
6	Kumar	993-14-9283	81	73	83	65	76.8
7	Kapila	999-52-6938	93	91	97	80	91.65
8	Ravi	998-71-2838	98	83	88	90	89.3
9	Saman	997-74-4447	95	94	90	90	92.45
10							
11		Averages	92.2	83	89.4		
12							
13		Weights	0.25	0.3	0.3	0.15	

8. IF statements can be used to automatically assign letter grades to each student.
   a. Enter the following formula.

   H5: **=if(g5>89,"A",if(g5>79,"B",if(g5>69,"C",if(g5>59,"D","F"))))**

   b. Copy the formula in cell H5 to cells H6 through H9.
   c. The IF command evaluates the first logical test (i.e., G5>89). If the statement is true an "A" is assigned. If the statement is false, the next logical statement is evaluated (i.e., G5>79). To place an IF statement inside another IF statement is referred to as "nesting." Excel allows you to nest up to seven IF statements.

Exercise 04

Name	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Anil	2	1	3	4	3	3	1
Binoy	2	3	2	3	2	3	2
Sudeesh	3	0	3	0	3	0	3
Sreekanth	1	1	1	1	1	1	1
Simi	2	2	2	2	2	2	2
Vinitha	1	1	1	1	1	1	1
Vinod	0	1	0	1	0	1	0

I.   Open a new spreadsheet in libreoffice Calc and save it as InternetHours The following table records the number of hours each student uses Internet in a week

II.   Copy this data into your spreadsheet

III.   Add another column titled —Total hours per user‖. Using an appropriate formula, calculate the total hours each student used in the week.

IV.   Add another column titled —Daily average hours used‖. Using an appropriate formula, calculate the average hours each student used per day. The hours should be rounded to 1 decimal place.

V.   Below the last student, add a row titled —Total hours per day‖. Using an appropriate formula, calculate the total hours used each day of the week.

VI.   Add another row titled —Minimum hours used‖. Using an appropriate formula, find the minimum number of hours used for each of the days.

VII.   Add another row titled —Maximum hours used‖. Using an appropriate formula, find the maximum number of hours used for each of the days.

Exercise 05

5. Consider the following data:

	A	B	C	D	E	F	G	H	I	J
1	Roll No.	Name	English (100)	Hindi (100)	Maths (100)	Science (100)	So.Sc (100)	Total (500)	Percentage	Remarks
2	1	Aman Singh	55	65	54	75	65			
3	2	Chandini Yadav	95	99	100	90	98			
4	3	Girish Kumar	25	39	15	43	39			
5	4	Harsha Dev	85	81	74	89	75			
6	5	Ishan Patel	86	36	68	98	54			
7	6	Geeta Kumari	45	52	39	49	65			
8	7	Komal	75	88	87	95	67			
9	8	Kamal Raj	35	38	42	52	56			
10	9	Swati Singh	51	45	62	71	84			
11	10	Yuvi Sharma	81	74	85	92	65			

I.   .Write the formula to calculate the total marks obtained by each student.

    =sum(c2:g2) or =(c2+d2+e2+f2+g2) 2.

II.   Write the formula to calculate the Percentage of each student by using formula. =h2/500*100 3.

III.   Depending on the percentage write the following remarks using formula. Excellent: 90% or above

    Excellent: 90% or above

    Very Good: 80% - less than 90%

    Good: 70% less than 80%

    Fair : 60% - less than 70%

    Poor : less than 60%

Exercise 06

You will have to calculate a percentage and create a graphic by use the given data.

Mark	Nº of students	Percentage
A	1	3,4%
B	8	27,6%
C	7	24,1%
D	3	10,3%
E	3	10,3%
F	7	24,1%
TOTAL	29	100,0%