

Q1 Consolidate data of two sheets given below in third sheet of Libre Office Calc.



Procedure

Step 1: Open LibreOffice Calc.

Step 2: In Sheet1, create a table with headings Name and June Pocket Money and enter the data.

Step 3: Insert a new sheet (Sheet2) and create a table with headings Name and July Pocket Money, then enter the data.

Step 4: Insert another new sheet and rename it as Sheet3 (for consolidated result).

Step 5: Click on Data → Consolidate.

Step 6: Select Function = Sum.

Add the ranges

Sheet1.\$A\$1:\$B\$6 and Sheet2.\$A\$1:\$B\$6.

Step 7: Tick Row labels

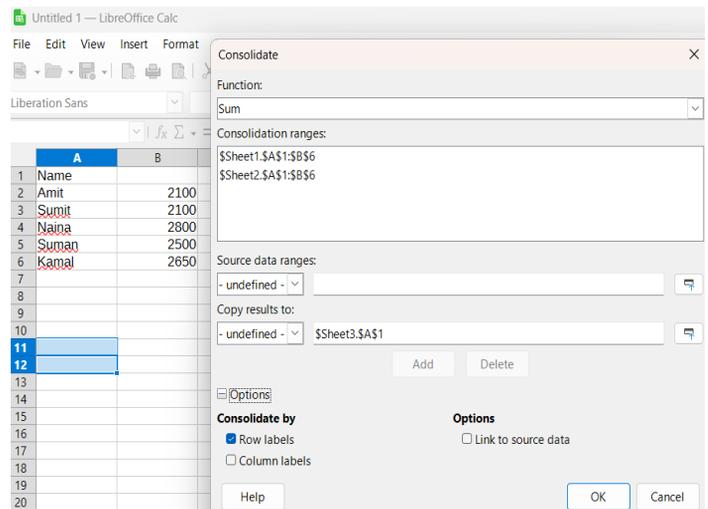
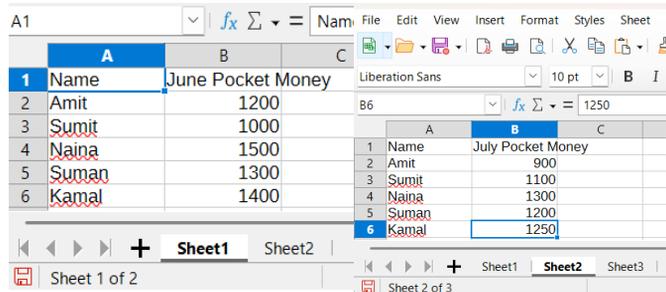
under Options and set

Copy results to: Sheet3.

\$A\$1.

Step 8: Click OK to

consolidate the data.



Q2 Consider the Given Table Student mentioning Students details and perform the following:

	A	B	C	D
1	Rollno	Class	Name	Phone_no
2	1	XII	Sumit	1234565
3	2	X	Amit	3564583
4	3	X	Anuj	1236589
5	4	XI	Mini	5869542

Procedure

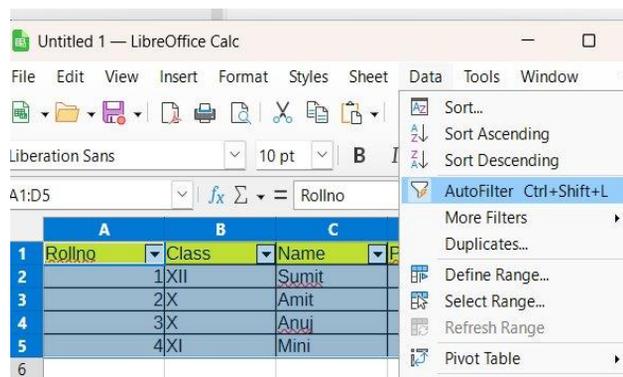
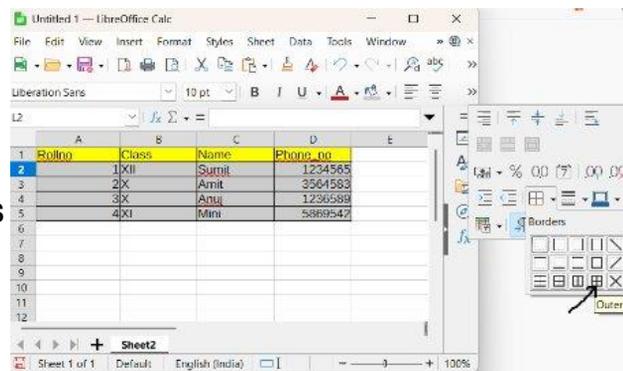
Step 1: Open LibreOffice Calc.

Step 2: In Sheet1, create a table with headings Rollno, Class, Name, Phone_no and enter the required data.

Step 3: Select the header row and apply a background color. Then select the data cells and apply another background color.

Step 4: Select the complete table, click on Borders, and apply Outer Border and All Inner Lines.

Step 5: Select the entire table, go to Data → AutoFilter.



Now Apply Different Filters

Filter 1: Display all records of the table

Click on any filter arrow in the heading row.

Select All.

All records of the table will be displayed.

Filter 2: Display record of student whose

Roll Number is 3

Click on the filter arrow of Rollno column.

Select 3 from the list.

Only the record of the student with roll

number 3 will be displayed.

Filter 3: Display records of students who

are in Class X

Click on the filter arrow of Class column.

Select X from the list.

Records of students studying in Class X

will be displayed.

Filter 4: Display record of student named

Sumit

Click on the filter arrow of Name column.

Select Sumit from the list.

The record of Sumit will be displayed.

The image shows three sequential screenshots of a spreadsheet application. The spreadsheet has columns for Rollno, Class, Name, and Phone_no. The first screenshot shows the 'All' filter selected for the Rollno column. The second screenshot shows '3' selected for the Rollno column. The third screenshot shows 'X' selected for the Class column. The fourth screenshot shows 'Sumit' selected for the Name column.

Q3 You are working on a project report about the solar system for your science class.

- Insert an image of the solar system, a constellation, and a spacecraft.
- Resize the solar system image to fit half of the page width.
- Crop the constellation image to remove unnecessary background.
- Align the solar system image to the centre of the page.
- Place the spacecraft image in the top-right corner of the page with text wrapping around it.

Procedure (Step by Step)

Step 1: Open LibreOffice Writer from the Start Menu.

Step 2: Type the heading Project Report on Solar System, make it Bold and Centre aligned.

Step 3: Type a short report describing the solar system below the heading.

Step 4: Click on Insert → Image, insert the solar system image, resize it to half page width and centre align it.

The image shows a screenshot of a LibreOffice Writer document titled "Project Report on Solar System". The document contains the following text:
The solar system consists of the Sun, eight planets, their satellites, asteroids and other celestial bodies. It helps us understand the structure of space and the movement of planets.
In this project, images of the solar system, a constellation and a spacecraft are inserted to explain the topic visually. Various formatting tools such as resize, crop, alignment and text wrapping are used to present the information clearly.
The document also features three images: a spacecraft in the top right corner, a diagram of the solar system, and a constellation.

Step 5: Click on Insert → Image, insert the constellation image, use the Crop tool to remove unnecessary background and resize it.

Step 6: Click on Insert → Image, insert the spacecraft image, place it in the top-right corner and apply text wrapping.

Step 7: Adjust all images properly so that the content fits on one page.

Step 8: Click on File → Save As, give a file name and save the document.



Result

A project report on the solar system is created using images and formatting tools in LibreOffice Writer.

Conclusion

LibreOffice Writer provides easy options to insert, resize, crop, align images and apply text wrapping.

Q4 Mr. Mohit, school teacher, assigned a task to Jatin to create a school report containing sections such as Introduction, Achievements, Activities and Future Plans.

- Apply Heading styles for main section titles.
- Apply a custom style to quotes within the report.
- Use Fill Format to apply a text style to all paragraphs.

Step 1: Open LibreOffice Writer and click on File → New → Text Document.

Step 2: Type the report title “Project Report on School Report”, select it, then go to Styles → Title and apply the Title style.

Step 3: Write the main sections:

Introduction, Achievements, Activities, Future Plans, Conclusion.

Step 4: Select each section heading and apply Styles → Heading (Heading 2 or Heading 5 as required).

Step 5: Write paragraphs under each heading, select the text, and apply Styles → BodyText.

Step 6: Write the quote:

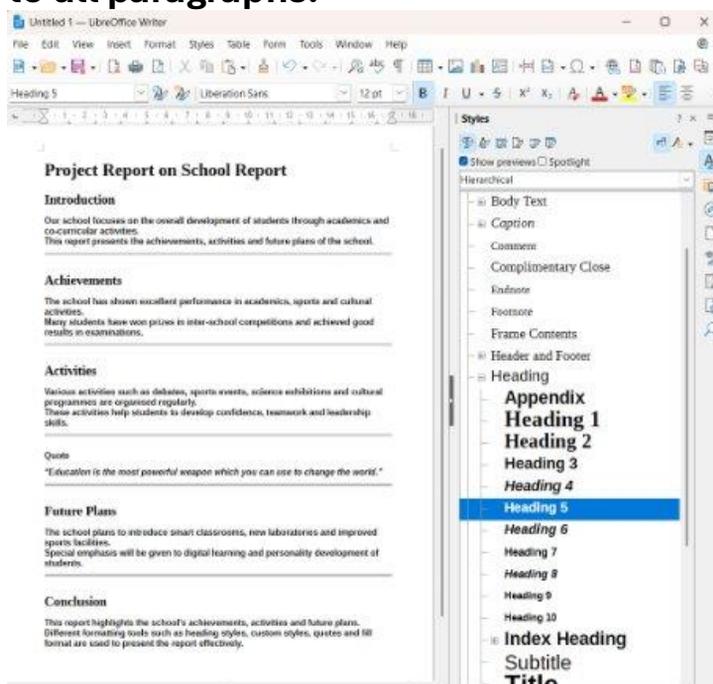
“Education is the most powerful weapon which you can use to change the world.”

Step 7: Select the quote, apply Bold + Italic, then go to Styles → New Style from Selection and create a Custom Quote Style.

Step 8: In the Styles panel, click on Fill Format Mode (paint bucket icon) and apply the same style to all required paragraphs.

Step 9: To turn off Fill Format Mode, press the Esc key.

Step 10: Save the document using File → Save As.



Q5 Manish is designing the cover page of your school magazine.

- Insert an image of the school building at the centre of the cover page.
- Crop and resize the image proportionately.
- Add a drop shadow to the image for emphasis.



Q5 – Steps

Step 1: Open LibreOffice Draw.

Step 2: Create a new drawing and type the title of the school magazine at the top of the page.

Step 3: Click on Insert → Image and insert the image of the school building.

Step 4: Select the image and place it at the centre of the page.

Step 5: Resize the image proportionately using the corner handles.

Step 6: Right-click on the image, select Crop, and remove unnecessary parts.

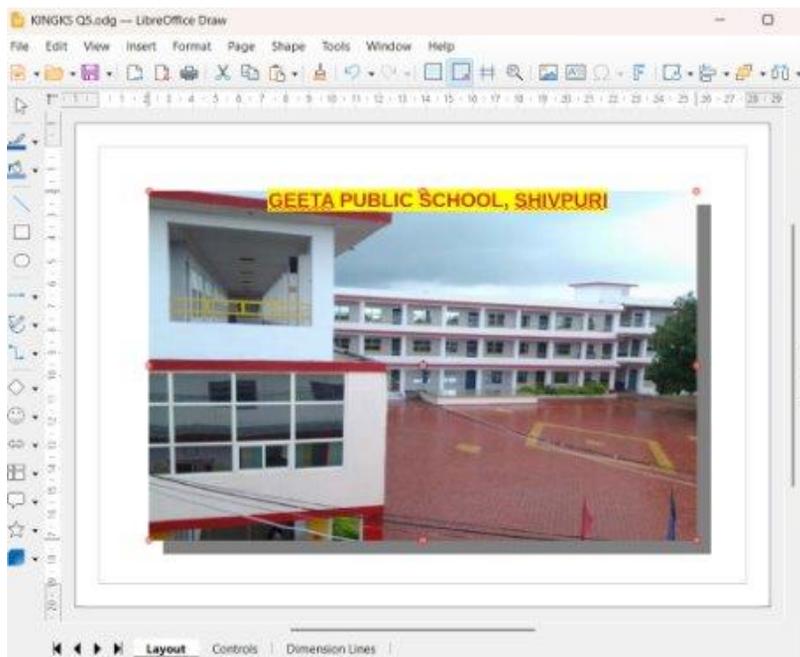
Step 7: Select the image, open Properties, and enable the Drop Shadow option.

Step 8: Adjust the image position and size to make the cover page attractive.

Step 9: Click on File → Save As and save the drawing.

Result

The cover page of the school magazine is created with a centred image, proportional resizing, cropping and drop shadow effect.



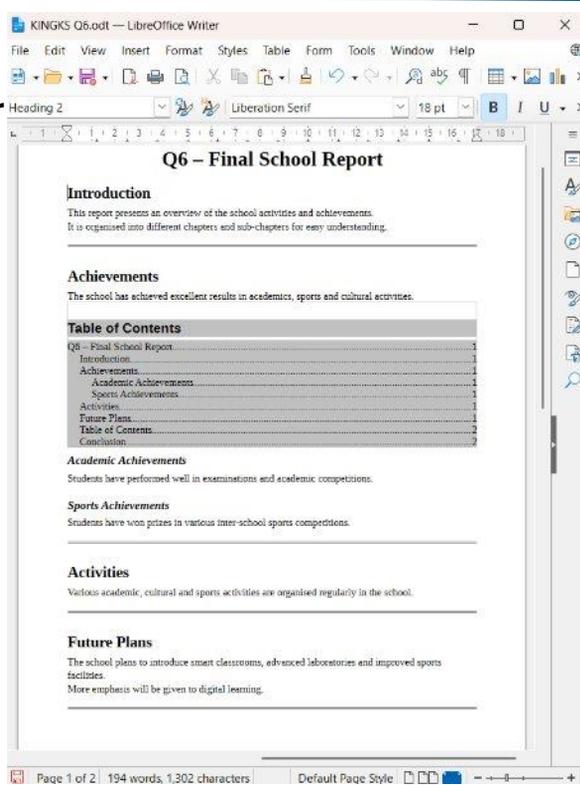
Q6 You are compiling the final report for your school, which includes multiple chapters.

- Create a Table of Contents (TOC) that reflects the report with main topics and subtopics.
- Apply character styles to the TOC to differentiate between main topics (bold) and subtopics.
- Update the TOC as new sections are added to the report.

Step 1: Open LibreOffice Writer and open the school report document.

Step 2: Apply Heading styles to the report:

- Main title → Heading 1
- Main sections → Heading 2
- Sub-sections → Heading 3



Step 3: Place the cursor at the position where the Table of Contents (TOC) is required.

Step 4: Click on Insert → Table of Contents and Index → Table of Contents and click OK.

Step 5: Select the main topics in the TOC and apply Bold character style.

Step 6: Select the sub-topics in the TOC and apply *Italic* character style.

Step 7: Add a new section in the report using the appropriate Heading style.

Step 8: Right-click on the TOC and select Update Index to update the TOC.



Result

The Table of Contents is created and updated with main topics in bold and sub-topics in *italic*.

Q7 Devash creates a template for the monthly school newsletter.

- **Design a template with predefined sections for the Principal's message, events, achievements and student spotlights.**
- **Include a background colour and custom fonts.**
- **Save the template and use it to format the current month's newsletter.**

Step 1: Open LibreOffice Writer and create a new document.

Step 2: Type the title Geeta Public School – Monthly Newsletter and apply Heading 1.

Step 3: Create fixed sections Principal's Message, Events, Achievements and Student Spotlight and apply Heading 2 to all section headings.

Step 4: Apply a background colour using Format → Page Style → Area.

Step 5: Change the font style and size of the title, headings and text to use custom fonts.

Step 6: Adjust spacing and alignment to make the layout uniform.

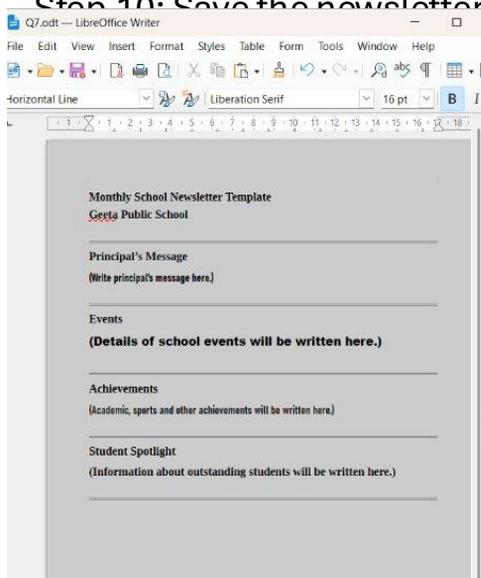
Step 7: Save the document as a template using

File → Templates → Save as Template and name it School Newsletter Template.

Step 8: Create a new file using the saved template by clicking File → New → Templates and selecting the saved template.

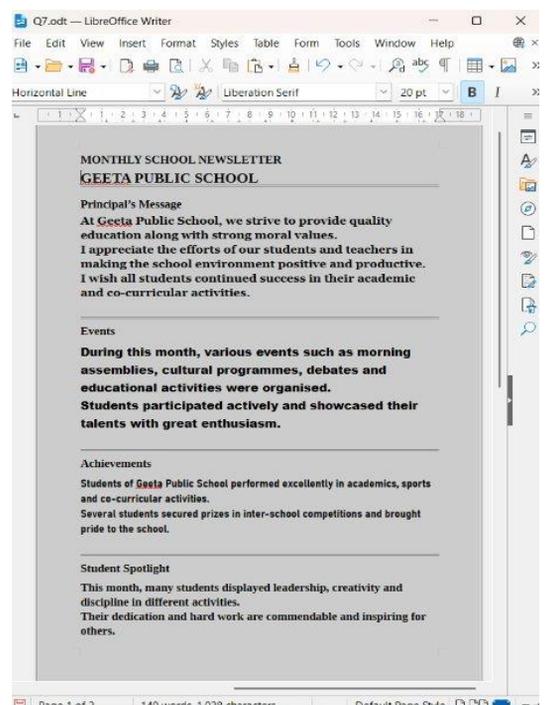
Step 9: Enter the current month's newsletter content in the predefined sections.

Step 10: Save the newsletter file.



<<<<<< **TEMPLATE**
Q7

USED TEMPLATE
Q7 >>>>>



Q8 Create the following sheet and calculate the profit based on different units sold.

Step 1: Open LibreOffice

Calc and create a new spreadsheet.

Step 2: Enter the headings

as shown below:

- A1: Cost Price
- A2: Selling Price
- A3: Unit Sold
- A4: Profit

	A	B	C	D	E
1	Cost Price	200		Unit Sold	Profit
2	Units Sold	280		200	
3	Sales Price	500		300	
4	Profit	40000		400	
5				500	
6				600	
7				700	
8				800	
9					
10					
11					

Step 3: Enter the given values:

- B1: 200
- B2: 280
- B3: 500

Step 4: Click on cell B4 and type the formula to calculate

profit: $=(B2-B1)*B3$

Press Enter.

(Profit will be displayed, e.g. 40000)

Step 5: Now create the second table for different units sold.

Enter headings:

- D1: Unit Sold
- E1: Profit

Step 6: Enter unit sold values in column D:

- D2 → 200
- D3 → 300
- D4 → 400
- D5 → 500
- D6 → 600
- D7 → 700
- D8 → 800

Screenshot of LibreOffice Calc showing the first table. The formula bar shows $=(B2-B1)*B3$. The spreadsheet shows the following data:

	A	B	C	D	E
1	Cost Price	200		Unit Sold	Profit
2	Units Sold	280		200	16000
3	Sales Price	500		300	24000
4	Profit	$=(B2-B1)*B3$		400	32000
5				500	40000
6				600	48000
7				700	56000
8				800	64000
9					

Screenshot of LibreOffice Calc showing the second table. The formula bar shows $=(B2-B1)*D6$. The spreadsheet shows the following data:

	A	B	C	D	E	F
1	Cost Price	200		Unit Sold	Profit	
2	Units Sold	280		200	16000	
3	Sales Price	500		300	24000	
4	Profit	40000		400	32000	
5				500	40000	
6				600	$=(B2-B1)*D6$	
7				700	56000	
8				800	64000	
9						
10						
11						
12						

$$\text{Profit} = (\text{Selling Price} - \text{Cost Price}) \times \text{Units Sold}$$

Step 7: Click on cell E2 and enter the formula:

$=(B2-B1)*D2$

Press Enter.

Step 8: Use the Fill Handle to copy the formula from E2 to E8 to calculate profit for all units sold.

Step 9: Adjust column width and save the file.

Result

Profit is calculated successfully for different units sold using formulas in LibreOffice Calc.

Conclusion

LibreOffice Calc helps in calculating profit easily by using formulas and fill handle feature.

Q9 Consider the following marksheet and use the Goal Seek feature to find the marks in place of question mark (?).

Step 1: Open LibreOffice Calc and create a new spreadsheet.

Step 2: Create the marksheet table by entering Subject in column A and Grade in column B.

Step 3: Enter the given marks for all subjects and leave the cell with question mark (?) blank.

Step 4: In the Average cell, enter the formula to calculate average, for example:

`=AVERAGE(B2:B9)`

Step 5: Select the cell containing the Average value.

Step 6: Click on Tools → Goal Seek.

Step 7: In the Goal Seek dialog box, fill the following:

- Formula cell: Average cell
- Target value: 70
- Variable cell: Cell containing the missing marks (?)

Step 8: Click OK and then click Yes to accept the result.

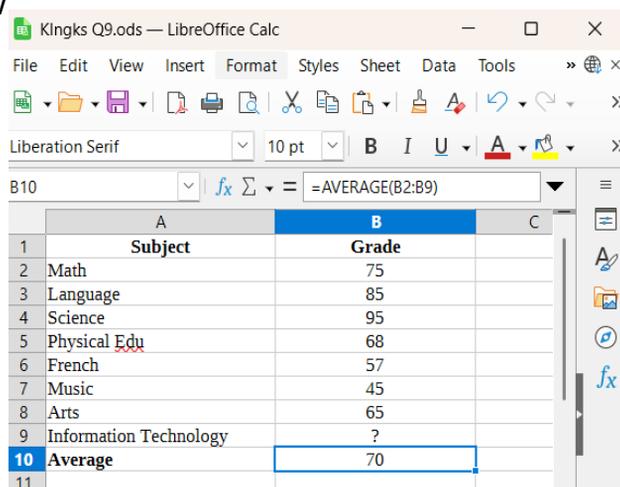
Step 9: The required marks in place of (?) are displayed automatically.

Result

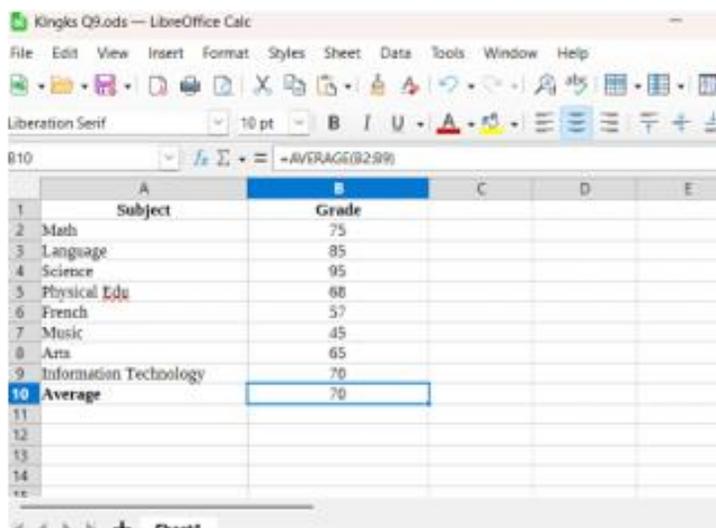
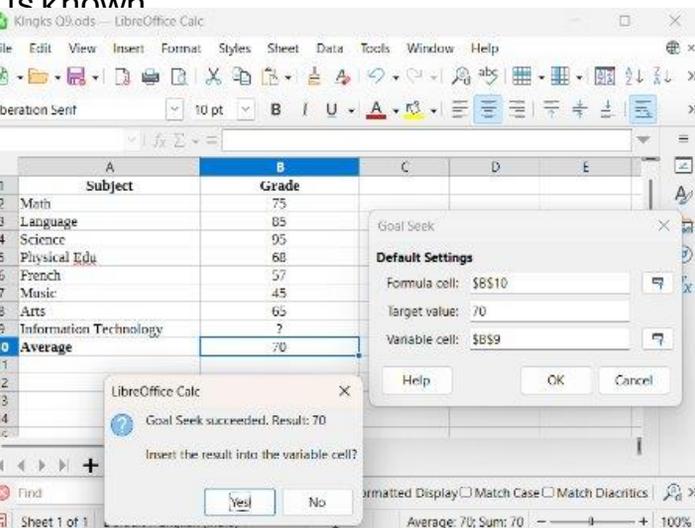
The missing marks are calculated successfully using the GoalSeek feature.

Conclusion

Goal Seek in LibreOffice Calc is used to find an unknown value when the desired result is known.



	A	B	C
1	Subject	Grade	
2	Math	75	
3	Language	85	
4	Science	95	
5	Physical Edu	68	
6	French	57	
7	Music	45	
8	Arts	65	
9	Information Technology	?	
10	Average	70	
11			



	A	B	C	D	E
1	Subject	Grade			
2	Math	75			
3	Language	85			
4	Science	95			
5	Physical Edu	68			
6	French	57			
7	Music	45			
8	Arts	65			
9	Information Technology	70			
10	Average	70			
11					
12					
13					
14					

Q10 You and your classmates are working on a group project using a shared spreadsheet.

Perform the following tasks:

- Set up a shared spreadsheet for collaboration among classmates.
- Practice entering, editing and formatting comments to enhance communication and clarity within the spreadsheet.
- Learn to manage changes effectively by reviewing and either accepting or rejecting them.

Step 1: Open LibreOffice Calc and create a new spreadsheet.

Step 2: Save the file so that it can be shared with classmates.

Step 3: Enable sharing by clicking Tools → Share Spreadsheet and click OK.

Step 4: Enter data in the spreadsheet collaboratively with classmates.

Step 5: To add a comment, right-click on a cell and select Insert Comment.

Step 6: Type the comment and format it if required for clarity.

Step 7: Enable change tracking by clicking Edit → TrackChanges → Record.

Step 8: Make changes in the spreadsheet (edit data).

Step 9: Review changes by clicking Edit → Track Changes → Manage.

Step 10: Accept or reject changes as required and save the spreadsheet.

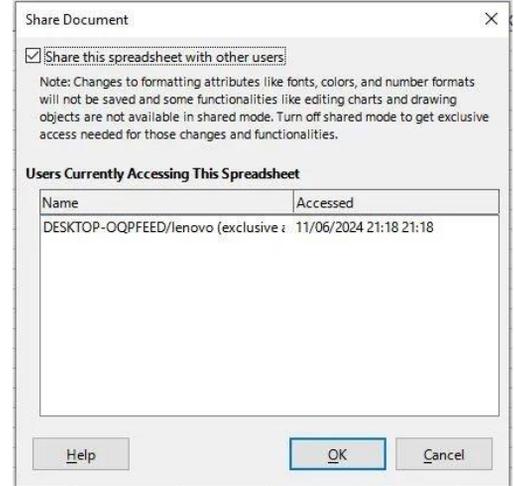
Result

A shared spreadsheet is created where comments are added and changes are tracked, reviewed and managed successfully.

Conclusion

LibreOffice Calc provides tools to collaborate using shared spreadsheets, comments and track changes for effective group work.

In this task, a shared spreadsheet is created using LibreOffice Calc, which is a spreadsheet application based on open-source software. LibreOffice Calc works on a cell-based spreadsheet system, where data is organised in rows and columns. The spreadsheet is shared to allow multiple classmates to collaborate on the same file. Comments are added to cells to improve communication and clarity while working on the project. The Track Changes feature of LibreOffice Calc is used to record all edits made by different users. These changes are reviewed and either accepted or rejected as required. This ensures proper collaboration, transparency, and effective management of group work.



Q11 Consider the following Product table and perform these tasks:

- **Sort the Product table by Price in descending order.**
- **Use a wildcard to create a query that retrieves all products where the ProductName starts with letter 'T'.**
- **Generate a report based on the Product table.**
- **Format the report to show products in ascending order of ProductID.**
- **Add the page number in the footer of the report.**

Software: LibreOffice Base

Base: Open-source database management system

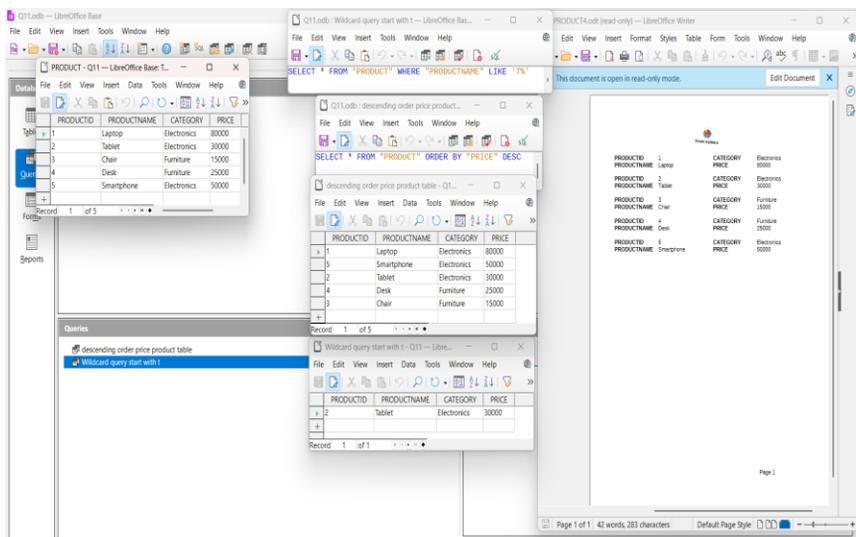
A. Create Database

Step 1: Open LibreOffice Base.

Step 2: Select Create a new database and click Next.

Step 3: Choose Yes, register the database and click Finish.

Step 4: Save the database with a suitable name (e.g. Q11.odb).



B. Create Table using Design View

Step 5: Click on Tables → Create Table in Design View.

Step 6: Create the following fields:

Field Name	Data Type
PRODUCTID	Integer
PRODUCTNAME	Text (VARCHAR)
CATEGORY	Text (VARCHAR)
PRICE	Integer

Step 7: Set PRODUCTID as the Primary Key.

Step 8: Save the table as PRODUCT.

C. Enter Records

Step 9: Open the PRODUCT table in Data View.

Step 10: Enter the given product records and save the table.

D. Query (Sort by Price – Descending) – Design View

Step 11: Click Queries → Create Query in Design View.

Step 12: Add the PRODUCT table and click Close.

Step 13: Drag all fields to the query grid.

Step 14: In the Sort row of PRICE, select Descending.

Step 15: Click Run Query and save it as descending order price product table.

E. Query (Wildcard – ProductName starts with T)

Step 16: Create a new query in Design View.

Step 17: Add the PRODUCT table.

Step 18: Drag required fields to the grid.

Step 19: In the Criteria row under PRODUCTNAME, type: `LIKE 'T%'`

Step 20: Run and save the query as Wildcard query start with T.

F. Create Report using Wizard

Step 21: Click Reports → Use Wizard to Create Report.

Step 22: Select PRODUCT table and move all fields to the report.

Step 23: Click Next and select PRODUCTID for sorting in Ascending order.

Step 24: Choose a report layout and click Next.

Step 25: Give a suitable report name and click Finish.

G. Add Page Number in Footer

Step 26: Open the report in Edit Mode.

Step 27: Click Insert → Page Number.

Step 28: Place the page number in the Footer section.

Step 29: Save and close the report.



Result

The PRODUCT table is created, sorted, queried using wildcard, and a report is generated with ProductID in ascending order and page number in the footer.

Conclusion

LibreOffice Base helps in creating tables, queries and reports efficiently using Design View and Wizard tools.

Q12 You are tasked with organising student marks data in a spreadsheet and automating the calculation of total marks using a macro named “TotalMarks”.

- Set up a spreadsheet with three columns: Student Name in column A, Subject in column B, and Marks Obtained in column C. Ensure data starts from row 2.
- Develop a macro named “TotalMarks” that iterates through each row of the spreadsheet (starting from row 2) to calculate the total marks obtained by each student.
- For each student, sum up the marks obtained from all subjects listed.
- Display the total marks for each student in column D, starting from row 2.
- Execute the macro to automatically calculate and populate the total marks for each student based on the data provided in the spreadsheet.

The image shows two overlapping windows from LibreOffice Calc. The background window is a spreadsheet with the following data:

Student Name	Subject	Marks Obtained	Total Marks
Peter	Maths	85	85
Peter	Science	72	157
Peter	Eng. Lab	55	212
Peter	Computers	30	242
Alice	Social Studies	78	78
Alice	IT	68	146
Alice	Art	72	218
Alice	Lib. Studies	60	278
Alice	Physical	12	290

The foreground window is the Macro Editor, showing a macro named "TotalMarks" with the following code:

```
1 Sub TotalMarks
2   Dim cell As Range
3   Dim i As Integer
4   Dim total As Integer
5
6   Const c As Integer = Application.CurrentController.ActiveSheet
7   total = 0
8
9   For i = 2 To 8 ' Row 2 to Row 8 (8 total rows)
10    total = total + c.WorksheetCells(i, 3).Value
11    c.WorksheetCells(i, 4).Value = total
12  Next i
13 End Sub
```

Software: LibreOffice Calc

Step 1: Open LibreOffice Calc and create a new spreadsheet.

Step 2: In Row 1, enter the headings:

- A1: Student Name
- B1: Subject
- C1: Marks Obtained
- D1: Total Marks

Step 4: Click on Tools → Macros → Organize Macros → LibreOffice Basic.

Step 5: Create a new module and write a macro named TotalMarks.

Step 6: Program the macro to read marks from Column C and calculate the cumulative total of all subjects.

Step 7: Display the calculated total marks in Column D for each row.

Step 8: Save and close the Macro editor.

Step 9: Run the macro using Tools → Macros → Run Macro and select TotalMarks.

Result

The total marks of the single student across all subjects are calculated automatically.

Conclusion

The macro TotalMarks is used to calculate the total marks of one student studying multiple subjects.

Q13 You have received two versions of a financial report from different teams. You need to identify discrepancies and reconcile the differences between the two sheets. How would you do this task in LibreOffice Calc?

Answer

To identify and reconcile discrepancies between two versions of a financial report, both sheets are opened in LibreOffice Calc. The Compare Document feature is used to compare the two reports and highlight differences. The Track Changes option helps in reviewing all modifications made in the sheets. Required changes are accepted and incorrect entries are rejected to reconcile the data. Finally, the corrected spreadsheet is saved to ensure accuracy and consistency in the financial report.

Q14 Create the following table using the Design View in LibreOffice Base:

REG_NO	NAME	DATE_OF_SUBMISSION	MARKS_OBTAINED	GRADE
T/121/15	Anshu Verr	11/07/15	18	A
T/137/15	Anjali Kum	12/07/15	20	A+
T/145/15	Deepak Kc	14/07/15	17	B+

- **Name the table as “MARKS_DISTRIBUTION”.**
- **Enter at least three records in the table.**
- **Sort the data on the basis of grades.**

Step 1:
Open LibreOffice Base.

Step 2:
Click File → New → Database.

Step 3:
Select Create a new database
→ Click Next → Click Finish.

Save the database
(e.g., Q14.odb).

Steps to Create Table Using
Design View

Step 4: Click on Tables in the left panel.

Step 5: Click Create Table in Design View.

Step 6: Enter the following fields and data types:

- REG_NO – Text [VARCHAR]
- NAME – Text [VARCHAR]
- DATE_OF_SUBMISSION – Date [DATE]
- MARKS_OBTAINED – Integer [INTEGER]
- GRADE – Text [VARCHAR]

Step 7: Set REG_NO as the Primary Key.

Step 8: Save the table with the name MARKS_DISTRIBUTION.

Step 9: Open the table and enter the given records.

Steps to Create Query Using SQL View

Step 10:

Click on Queries in the left panel.

Step 11:

Click Create Query in SQL View.

Step 12:

Type the following SQL command:

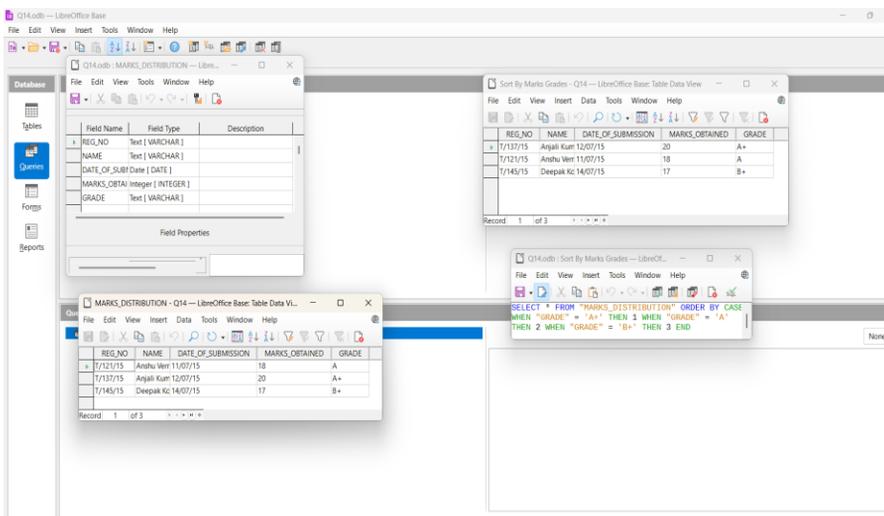
```
SELECT *  
FROM "MARKS_DISTRIBUTION"  
ORDER BY  
CASE  
  WHEN "GRADE" = 'A+' THEN 1  
  WHEN "GRADE" = 'A' THEN 2  
  WHEN "GRADE" = 'B+' THEN 3  
END;
```

Step 13: Click the Run (▶) button to execute the query.

Step 14: The records are displayed in sorted order based on grades.

Step 15: Save the query with a suitable name (e.g., Sort_By_Grade).

Final Result :- The data is sorted according to grade priority instead of alphabetical order.



Q15 Create the following table using the Design View.

ROLL_NO	NAME	DATE_OF_BIRTH	PHONE_NO	PLACE
A001	Manan Gupta	12/09/87	2354667667	Delhi
A002	Ryansi Sharma	09/05/86	3435555555	Chhattisgarh
A003	Rahul John	02/05/90	6565544324	Mumbai

Perform the following operations:

- **Sort the Place in decreasing order.**
- **Set Roll No. as the Primary Key.**
- **Delete the record A002.**
- **Add another record to the table.**

Step 1: Open LibreOffice Base

1. Open LibreOffice.
2. Click on Base.
3. Select Create a new database → Click Finish.
4. Save the database as Q15.odb.

Step 2: Create Table using Design View

1. Click on Tables from the left panel.
2. Click Create Table in Design View.
3. **Enter the following fields:**

Field Name	Field Type
ROLL_NO	Text (VARCHAR)
NAME	Text (VARCHAR)
DATE_OF_BIRTH	Date (DATE)
PHONE_NO	Text (VARCHAR)
PLACE	Text (VARCHAR)

Step 3: Set Primary Key

1. Right-click on ROLL_NO.
2. Click Primary Key.
3. A key icon will appear next to ROLL_NO.

Step 4: Save the Table

Press Ctrl + S.

Name the table as STUDENTS And Click OK.

Step 5: Enter Records

Enter the following records in Table Data View:

Roll No	Name	Date of Birth	Phone No	Place
A001	Manan Gupta	12/09/1987	2354667667	Delhi
A002	Ryansh Sharma	09/05/1986	3435555555	Chhattisgarh
A003	Rahul John	02/05/1990	6565544324	Mumbai

Step 6: Sort Place in Decreasing

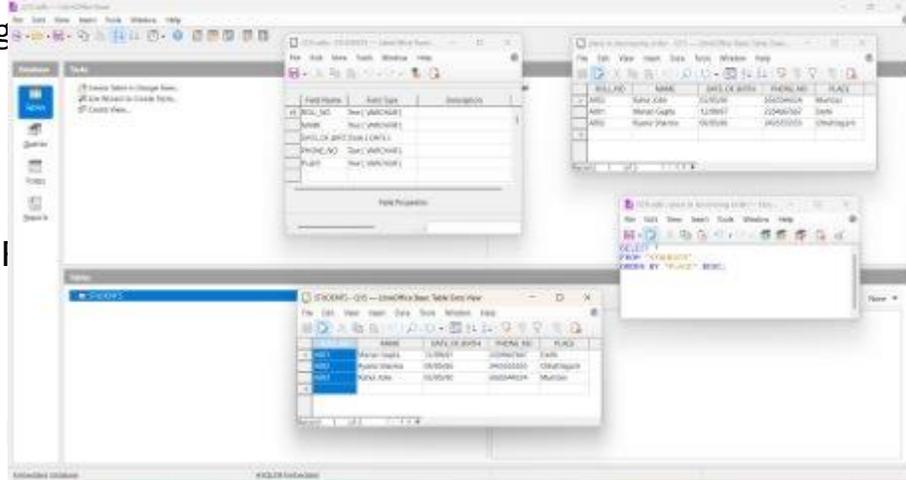
1. Click on Queries → Create Query in SQL View.

2. Write the following SQL command:

```
SELECT * FROM "STUDENTS" ORDER BY "PLACE" DESC
```

3. Click Run Query.

4. Save the query as place in decreasing order.



Step 7: Delete Record with Roll

5. Click Tools → SQL.

6. Enter the following command:

```
DELETE FROM "STUDENTS" WHERE "ROLL_NO" = 'A002';
```

7. Click Execute.

8. The record A002 will be deleted successfully.

Step 8: Add a New Record

1. Again open Tools → SQL.

2. Write the following SQL command:

```
INSERT INTO "STUDENTS" ("ROLL_NO", "NAME", "DATE_OF_BIRTH", "PHONE_NO", "PLACE") VALUES ('A004', 'Toshi Dubey', '1992-03-18', '9876543210', 'Indore');
```

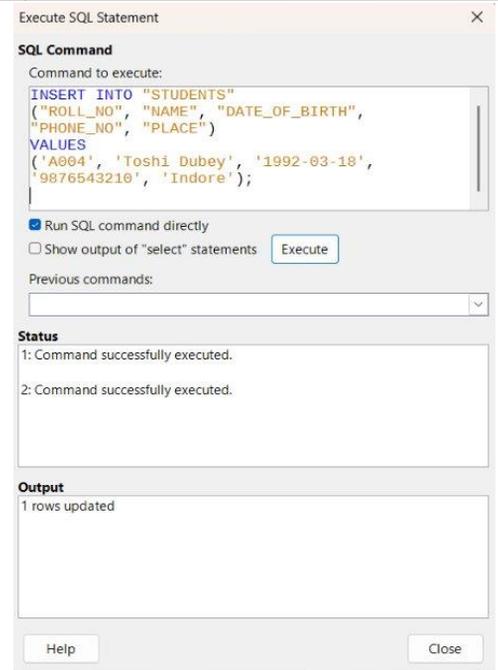
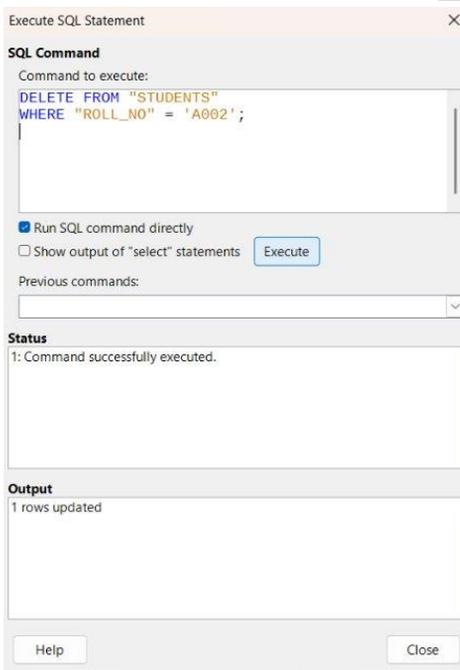
3. Click Execute.

ROLL_NO	NAME	DATE_OF_BIRTH	PHONE_NO	PLACE
A001	Manan Gupta	12/09/87	2354667667	Delhi
A003	Rahul John	02/05/90	6565544324	Mumbai
A004	Toshi Dubey	18/03/92	9876543210	Indore

Final Result

The table now contains:

- Primary Key set on ROLL_NO
- Records sorted by Place in decreasing order
- Record A002 deleted
- New record A004 added



Q16 You are a school database that includes two main tables: Students and Classes.

Students Table

StudentID	StudentName	DateOfBirth	ClassID
1	Priya Sharma	15/03/05	101
2	Rahul Kapoor	22/07/04	102
3	Meena Patel	10/11/05	101
4	Aisha Khan	25/02/04	103
5	Dev Rai	30/05/05	102

Classes Table

ClassID	ClassName	TeacherName
101	Mathematics	Mr. Prakash
102	Science	Ms. Yashika
103	History	Mrs. Seema

- **Set up a relationship between the Students table and the Classes table.**
- **Write a query to list all students along with the class they are in and the teacher of that class.**

Step 1: Create a New Database

1. Open LibreOffice Base.
2. Click Create a new database → Next → Finish.
3. Save the database as Q16.odb.

Step 2: Create CLASSES Table using Design View

1. Click Tables → Create Table in Design View.
2. Enter the following fields:

Field Name	Field Type
ClassID	Integer
ClassName	Text (VARCHAR)
TeacherName	Text (VARCHAR)

- Set ClassID as Primary Key.
- Save the table as CLASSES.

Step 3: Create STUDENTS Table using Design View

- Click Tables → Create Table in Design View.
- Enter the following fields:

Field Name	Field Type
StudentID	Integer
StudentName	Text (VARCHAR)
DateOfBirth	Date
ClassID	Integer

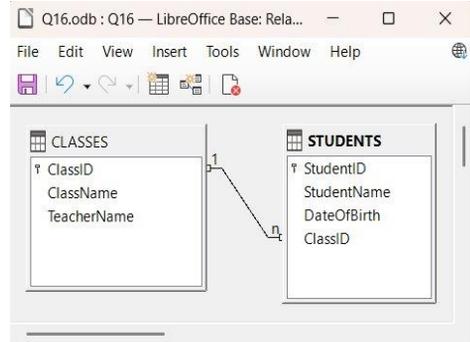
- Set StudentID as Primary Key.
- Save the table as STUDENTS.

Step 4: Enter Records in Both Tables

- Enter records in CLASSES table (Mathematics, Science, History with teachers).
- Enter records in STUDENTS table with proper ClassID values.

Step 5: Create Relationship between Tables

- Click Tools → Relationships.
- Add CLASSES and STUDENTS tables.
- Drag ClassID from CLASSES to ClassID in STUDENTS



1. A one-to-many relationship (1:n) is created.
2. Save and close the relationship window.

Step 6: Create Query using SQL View

1. Click Queries → Create Query in SQL View.

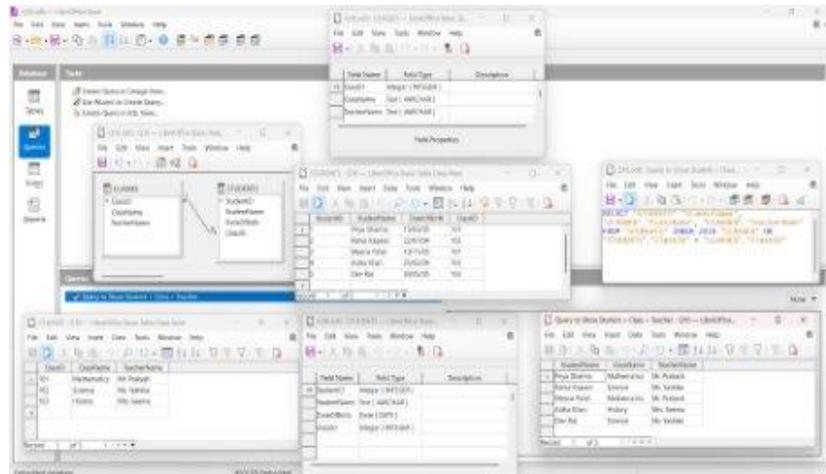
2. Type the following SQL command:

```
SELECT "STUDENTS"."StudentName", "CLASSES"."ClassName",
"CLASSES"."TeacherName" FROM "STUDENTS" INNER JOIN "CLASSES" ON
"STUDENTS"."ClassID" = "CLASSES"."ClassID";
```

3. Click Run Query (F5).

Step 7: Save the Query

1. Save the query as
Query to Show
Student + Class + Teacher.



```
Q16.odt : Query to Show Student + Class...
File Edit View Insert Tools Window Help
SELECT "STUDENTS"."StudentName",
"CLASSES"."ClassName", "CLASSES"."TeacherName"
FROM "STUDENTS" INNER JOIN "CLASSES" ON
"STUDENTS"."ClassID" = "CLASSES"."ClassID"
```

Q17 Create the following table for the Students' Details:

	BookID	StudentName	Class	Section
	1	Amit Kumar	7	C
	2	Ria Aggarwal	8	A
	3	Yash Yadav	6	D
	4	Ananya Gupta	8	B
	5	Praveen Soni	7	C

- Create a form for the *Students' Details* table.
- Enter the following records through the form.

BookID	StudentName	Class	Section
6	Toshi Dubey	8	B
7	Sanskar Parihar	6	A

Step 1: Create Database

- Open LibreOffice Base.
- Select Create a new database → Click Next → Finish.
- Save the database as Q17.odb.

Step 2: Create Table in Design View

- Click Tables → Create Table in Design View.
- Create the following fields:

Field Name	Field Type
BookID	Integer (AutoValue = Yes, Primary Key)
StudentName	Text (VARCHAR)
Class	Integer
Section	Text (VARCHAR)

- Set BookID as Primary Key and AutoValue = Yes.
- Save the table as STUDENTS_DETAILS.

Step 3: Insert Records in Table

Enter the following records (BookID will be auto-generated):

StudentName	Class	Section
Amit Kumar	7	C
Ria Aggarwal	8	A
Yash Yadav	6	D
Ananya Gupta	8	B
Praveen Soni	7	C

Step 4: Create Form

1. Click Forms → Use Wizard to Create Form.
2. Select table STUDENTS_DETAILS.
3. Move all fields to selected fields.
4. Click Next → Next and choose Columnar Layout.
5. Click Finish and save the form as STUDENTS_FORM.

Step 5: Enter Records Through Form

Using STUDENTS_FORM, add the following records:

StudentName	Class	Section
Toshi Dubey	10	A
Sanskar Parihar	10	A

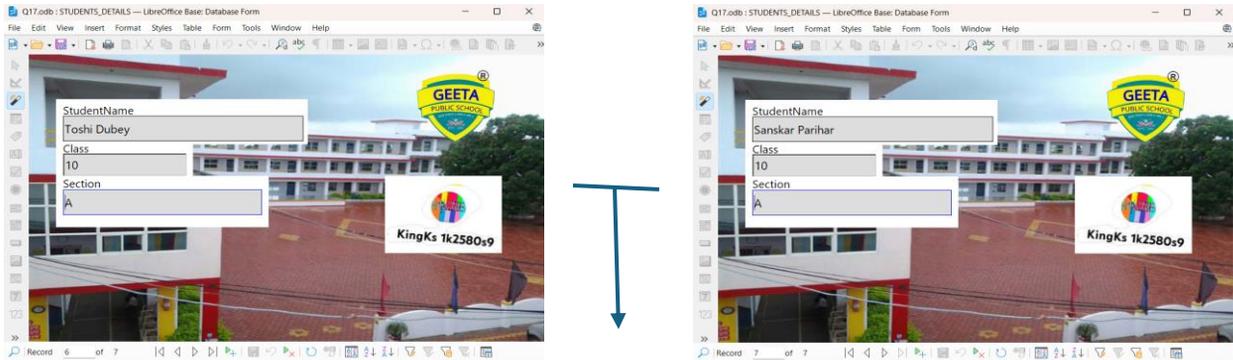
(BookID is generated automatically starting from 1)

Step 6: Result

All records are successfully entered through the form and BookID is auto-generated.

Conclusion

The Students' Details table was created using Design View, a form was designed using Form Wizard, and records were entered successfully through the form.



BookID	StudentName	Class	Section
1	Amit Kumar	7	C
2	Ria Aggarwal	8	A
3	Yash Yadav	6	D
4	Ananya Gupta	8	B
5	Praveen Soni	7	C
6	Toshi Dubey	10	A
7	Sanskar Parihar	10	A

Q18. Consider the following spreadsheet:

Product	Units Sold
A	69
B	73
C	88
D	82

Average Unit Sold is calculated in cell B8.

Calculate the average units sold in cell B8.

Maximise the average number of units sold to 95 using Goal Seek.

The criteria for maximising the average number of units sold is as follows:

B2 <= 88

B3 >= 82

B4 <= 90

B5 >= 60

Step 1: Enter the data

- Open LibreOffice Calc.
- Enter Units Sold values in column B:
- B2 = 69
- B3 = 73
- B4 = 88
- B5 = 82

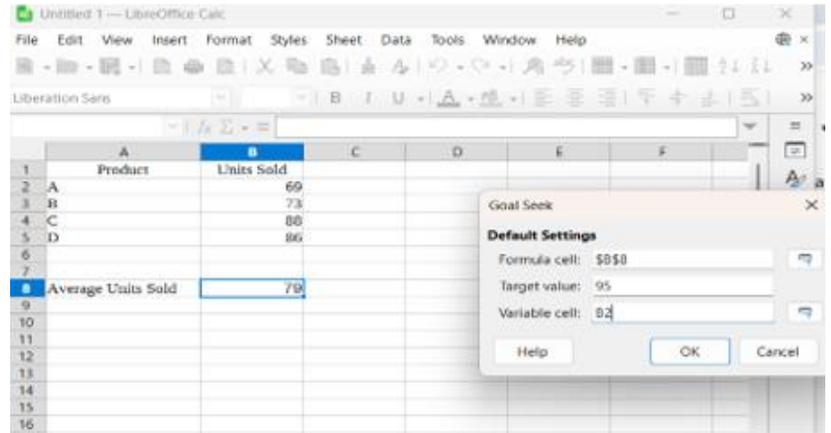
	A	B		A	B	C
1	Product	Units Sold		Product	Units Sold	
2	A	69		A	69	
3	B	73		B	73	
4	C	88		C	88	
5	D	86		D	86	
6						
7						
8	Average Units Sold	79		Average Units Sold	=AVERAGE(B2:B5)	
9						

Step 2: Calculate the Average

- In cell B8, enter:
=AVERAGE(B2:B5)
- Press Enter.

Step 3: Apply Goal Seek

- Go to Tools → Goal Seek.
- Fill the dialog box:
- Formula cell: \$B\$8
- Target value: 95
- Variable cell: B2



1. Click OK.

- 👉 LibreOffice Calc changes the value of B2.
- 👉 Average becomes 95.

Step 4: Verify the Conditions

Now check the given conditions:

- B2 ≤ 88 ❌ (B2 becomes greater than 88)
- B3 ≥ 82 ❌ (B3 is still 73)
- B4 ≤ 90 ✔️
- B5 ≥ 60 ✔️

	A	B	C	D
1	Product	Units Sold		
2	A	133		
3	B	73		
4	C	88		
5	D	86		
6				
7				
8	Average Units Sold	95		

Important Observation

- ✔️ The average value 95 is achieved
- ❌ But all the given conditions are NOT satisfied

Goal Seek changes only one cell, ignoring the remaining constraints.

PROOF (Why conditions are violated)

Reason 1: Single-variable limitation

- Goal Seek works on only one variable cell at a time
- It does not enforce multiple conditions simultaneously

Reason 2: Mathematical contradiction

To maintain all conditions, maximum possible values are:

- B2 = 88
- B3 = 82
- B4 = 90
- B5 = 60

Maximum possible average: $(88 + 82 + 90 + 60) \div 4 = 80$

But achieved average is: 95

Therefore, reaching 95 automatically breaks at least one condition.

Q19 Create a table named *Sales* with the columns: *product_id*, *product_name*, *unit_price*, and *units_sold*.

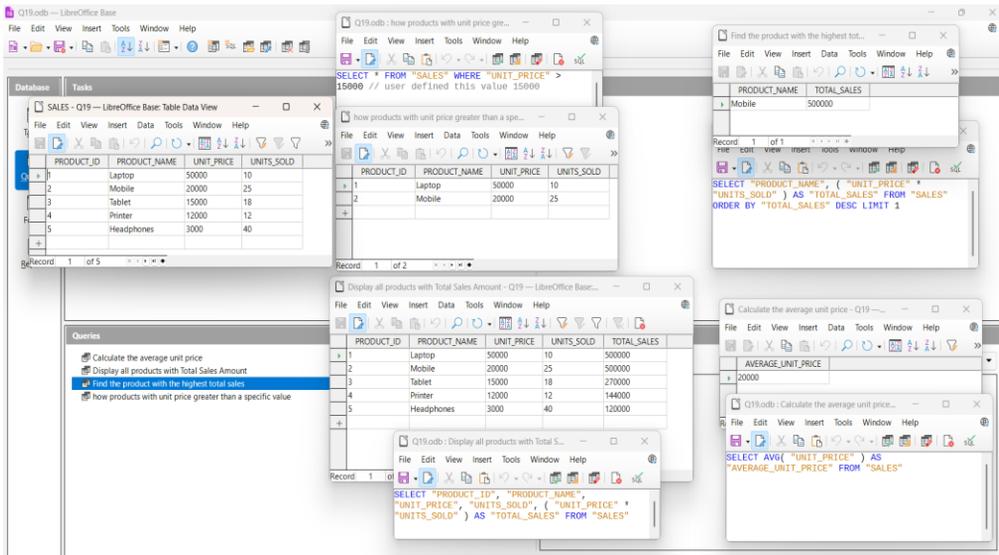
Insert some sample data into the *Sales* table. You can include at least 5 different products with varying prices and unit sales.

Display all products and their total sales amount ($\text{unit_price} \times \text{units_sold}$).

Find the product with the highest total sales amount.

Show all products with a unit price greater than a specific value (user input).

Calculate the average unit price across all products.



Step 1: Create a New Database

- Open LibreOffice → Base
- Select Create a new database
- Click Finish
- Save the file as Q19.odb

Step 2: Create Table in Design View

- Click Tables → Create Table in Design View
- Enter the following fields:

Field Name	Field Type
PRODUCT_ID	Integer
PRODUCT_NAME	Text (VARCHAR)
UNIT_PRICE	Integer
UNITS_SOLD	Integer

- Set PRODUCT_ID as Primary Key
- Save table as SALES

Step 3: Insert Sample Data

Enter at least 5 records, for example:

PRODUCT_ID	PRODUCT_NAME	UNIT_PRICE	UNITS_SOLD
1	Laptop	50000	10
2	Mobile	20000	25
3	Tablet	15000	18
4	Printer	12000	12
5	Headphones	3000	40

Queries (SQL View)

Step 4: Display All Products with Total Sales

1. Click Queries → Create Query in SQL View
2. Write:

```
SELECT "PRODUCT_ID", "PRODUCT_NAME", "UNIT_PRICE", "UNITS_SOLD",
("UNIT_PRICE" * "UNITS_SOLD") AS "TOTAL_SALES" FROM "SALES";
```

3. Click Run
4. Save as Display Total Sales

Step 5: Find Product with Highest Total Sales

1. Create new SQL Query
2. Write:

```
SELECT "PRODUCT_NAME", ("UNIT_PRICE" * "UNITS_SOLD")
AS "TOTAL_SALES" FROM "SALES" ORDER BY "TOTAL_SALES" DESC LIMIT 1;
```

1. Run and save as Highest Total Sales

- Step 6: Show Products with Unit Price Greater Than a Value
(Example: greater than 15000)

- SELECT * FROM "SALES" WHERE "UNIT_PRICE" > 15000;
- Save as Unit Price Greater Than Value
- Step 7: Calculate Average Unit Price

1. Create new SQL Query

2. Write:

```
SELECT AVG("UNIT_PRICE") AS "AVERAGE_UNIT_PRICE" FROM "SALES";
```

1. Run and save as Average Unit Price

Q20 Consider the following Employee table.

	EmployeeID	FirstName	LastName	Department	Salary
▶	1	Aarav	Patel	IT	60000
	2	Riya	Sharma	HR	55000
	3	Kabir	Gupta	Sales	62000
	4	Ananya	Reddy	IT	58000
	5	Advik	Joshi	Sales	60000
+					

Create a report using the Employee table.

Format the report according to the requirement.

Add the page number in the footer of the report.

Step 1: Open LibreOffice Base

- Open LibreOffice Base.
- Open your database file Q20.odt.

Step 2: Create the EMPLOYEE Table

1. Click on Tables → Create Table in Design View.
2. Create the following fields:

Field Name	Data Type
EmployeeID	Integer (Primary Key)
FirstName	Text (VARCHAR)
LastName	Text (VARCHAR)
Department	Text (VARCHAR)
Salary	Integer

- Set EmployeeID as Primary Key.
- Save the table as EMPLOYEE.

Step 3: Insert Records into EMPLOYEE Table

Open the table and insert the following records:

EmployeeID	FirstName	LastName	Department	Salary
1	Aarav	Patel	IT	60000
2	Riya	Sharma	HR	55000
3	Kabir	Gupta	Sales	62000
4	Ananya	Reddy	IT	58000
5	Advik	Joshi	Sales	60000

Save and close the table.

Step 4: Create Report Using Wizard

- Click on Reports → Use Wizard to Create Report.
- Select table EMPLOYEE.
- Move all fields to the right:
- EmployeeID
- FirstName
- LastName
- Department
- Salary
- Click Next.
- No grouping → Next
- Sorting not required → Next.
- Select layout Tabular.
- Orientation Portrait.
- Click Finish.
- Save report as EMPLOYEE_REPORT..

Step 5: Open Report in Design View

- Right-click on EMPLOYEE_REPORT.
- Select Edit.

Step 6: Format the Report

- Increase font size of field labels.
- Make field names Bold.
- Align text properly in Detail section.
- Insert logo image in Page Header (as shown).

Step 7: Add Page Number in Footer

- Click on Page Footer section.
- Insert a Label Field.
- Type the following expression:

= "Page " & PageNum

- Align it to the center.

Step 8: Save and View Report

- Save the report.
- Click View Report.
- Verify:
 - All employee records are shown.
 - Formatting is correct.
 - Page number appears at the bottom.

Final Output

- A properly formatted Employee Report
- Uses EMPLOYEE table
- Includes Page Number
- Matches the given question exactly

THE END

School: Geeta Public School

Class: X (CBSE)

Section: 10th

STUDENT SIGNATURE
