

2 Electronic Spreadsheets

The screenshot displays the Microsoft Excel ribbon interface. The ribbon tabs are FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, VIEW, and QUICKBOOKS. The HOME tab is active, showing groups for Clipboard, Font, Paragraph, Styles, Cells, and Editing. The Font group includes options for font face (Calibri), size (11), bold (B), italic (I), underline (U), and color. The Paragraph group includes options for bullet points, numbering, indentation, and text alignment (General, Left, Center, Right, Merge & Center). The Cells group includes options for Insert, Delete, Format, and Sort & Find & Filter. The Editing group includes options for Undo, Redo, and Find. The worksheet grid is visible below the ribbon, with columns A through Q and rows 1 through 20. The sheet name 'Sheet1' is visible in the bottom left corner. Annotations with green boxes and arrows point to the Menu bar (FILE tab), Text Formatting Tools (Font group), Alignment and Positioning Tools (Paragraph group), and Sheets (Sheet1 tab).

Activity 2.1




Let us work on spreadsheet

When a spreadsheet software is opened, a worksheet appears.

1. To open a new worksheet, click on 'New sheet'



2. To give a different name for the worksheet:

- Take mouse to  and right click on it.
- Select re-name. Type name and press 'Enter'.

3. To remove worksheet:

- Right click mouse on name of worksheet. Select 'Delete'.

Activity 2.2



Enter data into worksheet

A children's society decided to collect funds to purchase sports items for its students. They issued cards to fill boxes for the purpose.

The details about the money collected during the weekend, money collected by each student, the balance after deducting Rs. 50 /= at the printing cost are entered to a worksheet. The worksheet is shown in the following page.

	A	B	C	D	E	F	G
1	No	Name	Saturday	Sunday	Total	Printing	Balance
2	1	Sugath	Rs 250.00	Rs 340.00	Rs 590.00	Rs 50.00	Rs 540.00
3	2	Neela	Rs 450.00	Rs 423.00	Rs 873.00	Rs 50.00	Rs 823.00
4	3	Prabath	Rs 300.00	Rs 567.00	Rs 867.00	Rs 50.00	Rs 817.00
5	4	Mahesh	Rs 200.00	Rs 345.00	Rs 545.00	Rs 50.00	Rs 495.00
6	5	Shereen	Rs 290.00	Rs 234.00	Rs 524.00	Rs 50.00	Rs 474.00
7	6	Kaveesha	Rs 500.00	Rs 100.00	Rs 600.00	Rs 50.00	Rs 550.00
8	7	Lankesh	Rs 650.00	Rs 77.00	Rs 727.00	Rs 50.00	Rs 677.00
9	8	Jagath	Rs 350.00	Rs 45.00	Rs 395.00	Rs 50.00	Rs 345.00
10	9	Suresh	Rs 200.00	Rs 123.00	Rs 323.00	Rs 50.00	Rs 273.00
11	10	Sagarika	Rs 150.00	Rs 432.00	Rs 582.00	Rs 50.00	Rs 532.00
12	11	Menaka	Rs 130.00	Rs 234.00	Rs 364.00	Rs 50.00	Rs 314.00
13	12	Gayan	Rs 455.00	Rs 265.00	Rs 720.00	Rs 50.00	Rs 670.00
14	13	Pabath	Rs 230.00	Rs 324.00	Rs 554.00	Rs 50.00	Rs 504.00
15	14	Hemash	Rs 160.00	Rs 245.00	Rs 405.00	Rs 50.00	Rs 355.00
16	15	Kanathi	Rs 150.00	Rs 320.00	Rs 470.00	Rs 50.00	Rs 420.00

Let us create the spreadsheet shown above:

- Step 1 - On Sheet 1, type the titles as No, Name, Saturday and Sunday and other relevant information.
- Step 2 - Change the name of the worksheet as “Weekend Collection”.
- Step 3 - Save worksheet in your computer.

Let us save the file

- Select File → Save.
- From ‘Save in’, select a suitable location.
- Type a suitable file name as "Collection".
- Click "Save" button.

At the end of each action, save the document.

Activity 2.3



Find total collection during the weekend from each child

- In spreadsheets, formulas are used in calculations.
- "=" Symbol is used before any formula.
- In a formula, cell name (instead of cell contents) is used.
- Symbols such as +, -, *, / on keyboard are used in calculations between cells.
- The result is displayed by clicking the 'Enter' key after each formula.

Step 1 - In cell E1, type "Total"

Step 2 - Click E2 cell, which is in front of the name of the first student.

	A	B	C	D	E	F
1	No	Name	Saturday	Sunday	Total	
2	1	Sugath	250	340		

Step 3 - Type the formula below in the cell and click 'Enter'.

=C2+D2

The formula used to obtain the first result can be copied accordingly in order to obtain the total for other students:

Method 1

Step 1 - Click the cell with the total already obtained.

Step 2 - Move the mouse pointer to the right hand side corner at the bottom of the square. A small cross known as 'Fill handle' will be displayed now.

Saturday	Sunday	Total
250	340	590



Fill handle

Step 3 - Click the mouse on the 'Fill Handle'. Keeping the mouse clicked drag to E 16; the last student and release.

Step 4 - Then the total of each student will be obtained separately.

Method 2

Step 1 - Click on cell with first total.

Step 2 - Click 'Home' → 'Copy' in the menu.

Step 3 - Keeping mouse clicked, select cell range for totals.

Step 4 - Click 'Home' → 'Paste' on menu.

Step 5 - The total for each student appears.

Step 6 - Once complete, save the document.

Activity 2.4



Find balance after deducting Rs 50/= from each student

Step 1 - In cell F1, type "Printing". In cell G1, type "Balance". In column F, the cell after "Printing" type 50. Use "Fill Handle" and cover the rest of the list.

F
Printing
50
50
50
50
50
50
50

Step 2 - Click mouse on cell G2. Type the formula given below and press Enter.

=E2-F2

Step 3 - To find the balance for other students, use “Fill Handle” or 'Copy → Paste'




Save the file after each activity.

Activity 2.5



Let us format the worksheet

Some formatting have been done to the above document. They are as follows;

1. There is a border around the cells.
 - Select cell range to add border by clicking the mouse (A1:A16).
 - In menu, under 'Home' ribbon, click on Borders  and select all borders.
2. The cells are coloured to make them clearer.
 - Use the mouse to select the cell range to add colours.
 - In Menu, under 'Home', Click on 'Fill color'  to select suitable colours.
3. Boldface headings.
 - Select the headings. In Menu, under 'Home', Click on .

4. Date and Information in the cells are aligned.

- To align, select cell range for alignment using the mouse.

- In Menu, under 'Home', Click on the tools for alignment.



5. Use the number format to show the data as currency unit.

- Select the cell range for number formatting using the mouse.

- In Menu, under 'Home', click on the tool and select 'Currency'.



- At the end of each action, save the document.



Note - If the currency unit is not in 'Rupees', follow the steps given below;

Control panel → 'Region' → 'Formats' → 'Additional settings' → 'Currency'. Change the Currency symbol in the currency ribbon to Rs. and select 'Apply' and then 'Ok'

Create a new worksheet

Obtain a new worksheet and create the following document. Use formula for calculations. Do the necessary formatting.

- File → New → Blank Workbook → Create

	A	B	C	D	E	F	G	H	I	J	K
1	ABC Stationaries Stock information										
2	Item No	Item	Stock	Sold	Balance	Replacement 1	Total	Packeted	No of Packs	Packets per week	Grand total
3	1	Pencils	80	23	57	100	157	10	15.7	7	109.9
4	2	Pens	45	43	2	150	152	10	15.2	7	106.4
5	3	Erases	45	23	22	300	322	10	32.2	7	225.4
6	4	Books	34	43	-9	200	191	10	19.1	7	133.7
7	5	Bags	67	23	44	50	94	10	9.4	7	65.8
8	6	Colours	87	54	33	300	333	10	33.3	7	233.1
9	7	Bottles	67	23	44	250	294	10	29.4	7	205.8
10	8	Boxes	54	64	-10	200	190	10	19	7	133
11	9	Toffees	78	43	35	300	335	10	33.5	7	234.5
12	10	Baloon	90	56	34	400	434	10	43.4	7	303.8
13											


Formula for calculations

- ▲ Balance = Stock - Sold
=C3-D3
- ▲ Total = Balance+Replacement1
=E3+F3
- ▲ No. of packets = Total/Packeted
=G3/H3
- ▲ Grand Total = Number of Packets * Packets per week
=I3*J3

Tools for formatting ;

1. Boldface
2. Alignment
3. Adding colours to cell range
4. Using borders
5. Inserting a row above the worksheet. Data and information are center aligned.

Inserting row/column and merge and center

1. Click the right mouse button on column/row. Click 'Insert' → 'Enter row'.
2. In the new row obtained on the top, type the text you want and click 'Merge and Center'. 

This tool enables merge two or more cells and center align the entered data.

Activity 2.6



Let us create a mark sheet

	A	B	C	D	E	F	G	H	I	J
1	MarkSheet 2018									
	No	Name	subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Total	Average	
2										
3	1	Kasun	56	45	24	78	89	292	58.4	
4	2	Seetha	ab	45	ab	98	87	230	76.667	
5	3	Kanthi	ab	ab	78	59	87	224	74.667	
6	4	Gayani	89	76	76	76	76	393	78.6	
7	5	Deepal	78	77	67	96	ab	318	79.5	
8	6	Naseem	67	ab	ab	56	69	192	64	
9	7	Thanuka	56	45	24	78	89	292	58.4	
10	8	Bimalika	ab	67	23	56	ab	146	48.667	
11	9	Thiwanga	54	65	78	65	ab	262	65.5	
12	10	Pradeepa	56	45	24	78	ab	203	50.75	
13										
14	Maximum Marks		89	77	78	98	89			
15	Minimum Marks		54	45	23	56	69			
16	No of Present Students		7	8	8	10	6			
17	No of Students in class		10	10	10	10	10			
18										

Tools for formatting;

1. Boldface letters and numbers
2. Alignment
3. Add colours to cell ranges
4. Adding borders
5. Inserting a row on the top of the worksheet, centre aligning and merging data in a cell range
6. Orientation - changing direction of letters


Orientation - changing direction of letters

Step 1 - Before orientation, space between columns and rows need increasing.

To increase the space drag mouse as shown, among column and rows. If it is a column, drag the clicked mouse to right. If it is a row, drag the clicked mouse down.

	A	B	C
1			

	A
1	
2	
3	
4	

- Step 2 - Select cells to be changed orientation. Click on arrow for orientation icon.  Select required direction.
- Step 3 - Change the name of the worksheet to "Mark Sheet".
(Sheet 1 → Mark Sheet)
- Step 4 - Save the created workbook as "First term marks - 1" and close the workbook.

Activity 2.7



Using functions

To calculate the values in a range of cells, functions are used. After the "=" symbol, to begin a formula, the function is included. Then the cell range is included within brackets. To indicate that it is a cell range, the names of the first cell and the last cell are written within and the symbol ":".

Let us identify a few such functions;

To calculate the total sum in a cell range
= sum(first cell:last cell).

To find the average in a cell range,
= average(first cell:last cell).

To count the cells with numbers only
= count(first cell:last cell).

To count cells with data in a cell range, use
= counta(first cell:last cell).

Let us use the relevant functions in the worksheet created above.

Open “Mark Sheet 1” that you created and saved earlier.

- File → Open → First term marks - 1 → Open

Use the following functions, complete the Mark sheet 1.

=sum(C3:G3)

=average(C3:G3)

=max(C3:C12)

=min(C3:C12)

=count(C3:C12)

=counta(C3:C12)

Saving presaved file in a different name

- Select 'File' → 'Save as'
- Select a saving location from 'Save in'.
- In front of file name, type a suitable name "First term mark - 2"
- Click 'Save' button.

Activity 2.8



Sorting

	A	B	C	D	E	F	G	H	I
1	MarkSheet 2018								
	No	Name	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Total	Average
3	3	Gayani	89	76	76	76	76	393	78.6
4	2	Deepal	78	77	67	96	ab	318	79.5
5	5	Kasun	56	45	24	78	89	292	58.4
6	9	Thanuka	56	45	24	78	89	292	58.4
7	10	Thiwanga	54	65	78	65	ab	262	65.5
8	8	Seetha	ab	45	ab	98	87	230	76.667
9	4	Kanthi	ab	ab	78	59	87	224	74.667
10	7	Pradeepa	56	45	24	78	ab	203	50.75
11	6	Naseem	67	ab	ab	56	69	192	64
12	1	Bimlaka	ab	67	23	56	ab	146	48.667
14	Maximum Marks		89	77	78	98	89		
15	Minimum Marks		54	45	23	56	69		
16	No of Present Students		7	8	8	10	6		
17	No of Students in class		10	10	10	10	10		

Sorting data according to total marks obtained

	A	B	C	D	E	F	G	H	I
1	MarkSheet 2018								
	No	Name	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Total	Average
3	1	Bimlaka	ab	67	23	56	ab	146	48.667
4	2	Deepal	78	77	67	96	ab	318	79.5
5	3	Gayani	89	76	76	76	76	393	78.6
6	4	Kanthi	ab	ab	78	59	87	224	74.667
7	5	Kasun	56	45	24	78	89	292	58.4
8	6	Naseem	67	ab	ab	56	69	192	64
9	7	Pradeepa	56	45	24	78	ab	203	50.75
10	8	Seetha	ab	45	ab	98	87	230	76.667
11	9	Thanuka	56	45	24	78	89	292	58.4
12	10	Thiwanga	54	65	78	65	ab	262	65.5
14	Maximum Marks		89	77	78	98	89		
15	Minimum Marks		54	45	23	56	69		
16	No of Present Students		7	8	8	10	6		
17	No of Students in class		10	10	10	10	10		

Sorting data in the alphabetical order (A.....Z) / (ZA)

Data can be sorted according to our requirements. First, the cell range needs selecting. Select all cells in range leaving out only the cells with the titles.

Next, click 'Sort Filter'  in the 'Home' menu.

Select 'sort A to Z' or 'sort Z to A'.

Activity 2.9



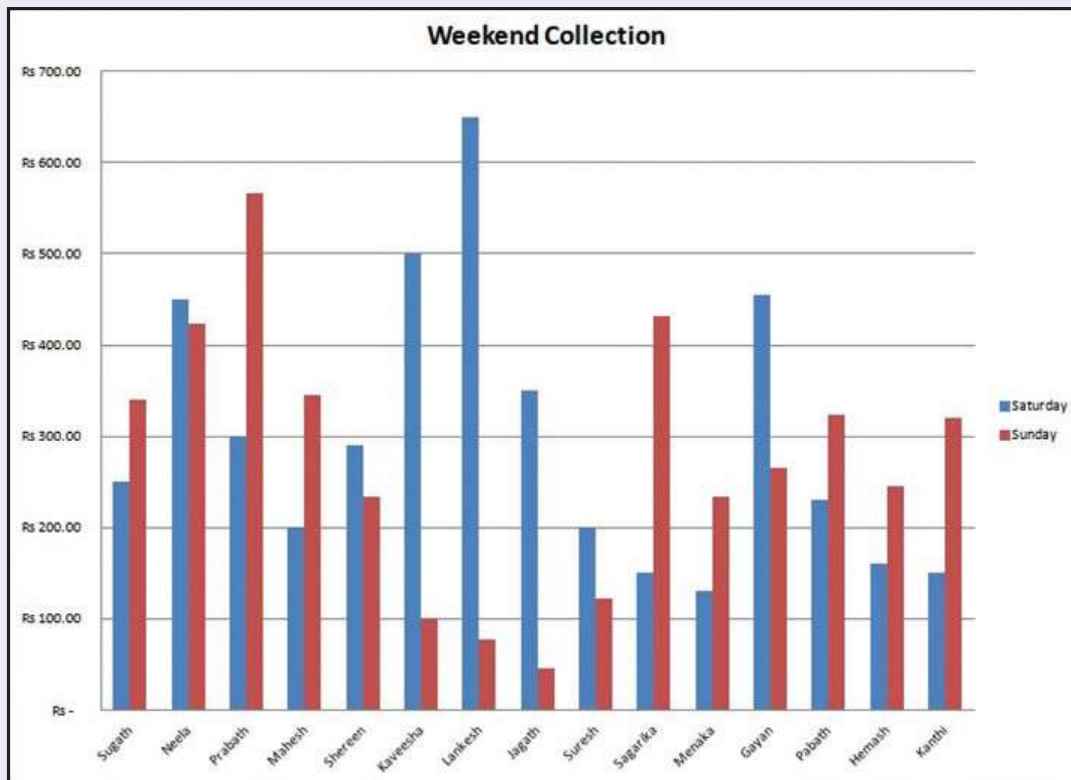
Step 1 - Open the document “Collection” created in Activity 2.2.

Using the information in this document, select the required cell range to create graphs.

	A	B	C	D	E	F	G
1	No	Name	Saturday	Sunday	Total	Printing	Balance
2	1	Sugath	Rs 250.00	Rs 340.00	Rs 590.00	Rs 50.00	Rs 540.00
3	2	Neela	Rs 450.00	Rs 423.00	Rs 873.00	Rs 50.00	Rs 823.00
4	3	Prabath	Rs 300.00	Rs 567.00	Rs 867.00	Rs 50.00	Rs 817.00
5	4	Mahesh	Rs 200.00	Rs 345.00	Rs 545.00	Rs 50.00	Rs 495.00
6	5	Shereen	Rs 290.00	Rs 234.00	Rs 524.00	Rs 50.00	Rs 474.00
7	6	Kaveesha	Rs 500.00	Rs 100.00	Rs 600.00	Rs 50.00	Rs 550.00
8	7	Lankesh	Rs 650.00	Rs 77.00	Rs 727.00	Rs 50.00	Rs 677.00
9	8	Jagath	Rs 350.00	Rs 45.00	Rs 395.00	Rs 50.00	Rs 345.00
10	9	Suresh	Rs 200.00	Rs 123.00	Rs 323.00	Rs 50.00	Rs 273.00
11	10	Sagarika	Rs 150.00	Rs 432.00	Rs 582.00	Rs 50.00	Rs 532.00
12	11	Menaka	Rs 130.00	Rs 234.00	Rs 364.00	Rs 50.00	Rs 314.00
13	12	Gayana	Rs 455.00	Rs 265.00	Rs 720.00	Rs 50.00	Rs 670.00
14	13	Pabath	Rs 230.00	Rs 324.00	Rs 554.00	Rs 50.00	Rs 504.00
15	14	Hemash	Rs 160.00	Rs 245.00	Rs 405.00	Rs 50.00	Rs 355.00
16	15	Kanthi	Rs 150.00	Rs 320.00	Rs 470.00	Rs 50.00	Rs 420.00

Graph 1

Weekend collection of each child is shown in a column graph.



Create column graph

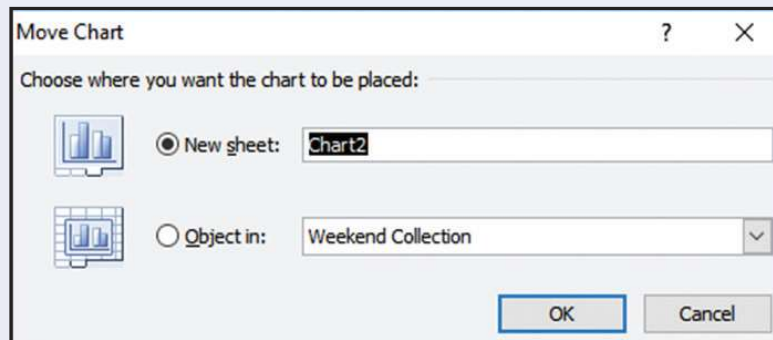
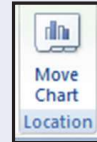
Step 1 - Select the cell range by clicking the mouse on B2:D16.

Step 2 - Click on  in Insert ribbon.

Step 3 - Select a suitable graphs from the list and click on it.

Graphs are always created on the worksheet in which the relevant information is available. Therefore, the graphs have to be taken to “Chart Sheets”. Follow the steps given below for that;

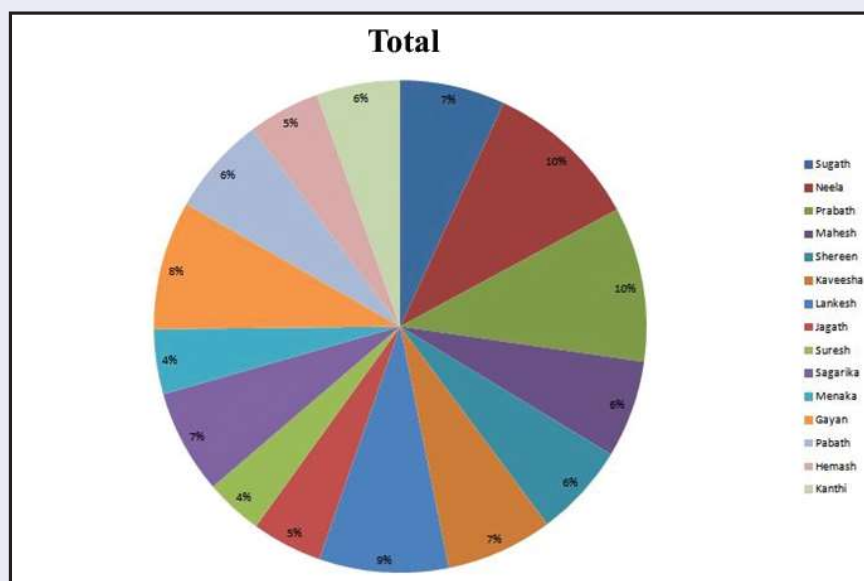
- Step 1 - Click on graph created in the worksheet.
- Step 2 - Click on "Move Chart Location" in the 'Design' ribbon
- Step 3 - In the Move Chart dialogue box, click New Sheet → OK.



- Step 4 - To add a title to the graph.
In the 'Design' ribbon use 'Quick Layout'.
- Step 5 - Select 'Change colours' to add colours to the graph.

Graph 2

The graph bellow shows the collection of each child as a percentage in a Pie chart.



Let us create a pie chart

The cell range for pie chart is the cell range of names (B2:B16) and the total (E2:E16). These cell ranges are not adjoining. Let us select the cell ranges first.

- Step 1 - Select cell range (B2:B16) with the names of the children.
- Step 2 - Pressing the ctrl key on keyboard, select the cell range for totals (E2:E16)
- Step 3 - Click on Pie chart tool in the Insert ribbon.
- Step 4 - Select a suitable graph form the list and click on it.
- Step 5 - Take graph to another graph sheet.
- Step 6 - Do the necessary formatting. Save the document and close it.



Activity 2.10



Create graphs using other information in the table.



Note well : Before crating graphs using information in First term marks 2 enter marks for absent students as well.