

## 06. Use data validation in MS Excel

### Data validation

#### Overview

Data validation in Microsoft Excel is a powerful tool that ensures accuracy and consistency within your spreadsheets. It allows you to control the type of data that can be entered into a cell, reducing errors, and maintaining data integrity. With data validation, you can create rules or criteria for what is acceptable in a cell, such as numerical ranges, dates, lists of options, or custom formulas.

This feature not only helps in preventing incorrect data entry but also provides prompts and messages to guide users in inputting the correct information. Whether you're managing inventory, creating surveys, or analyzing financial data, understanding how to use Excel's data validation will greatly enhance the efficiency and reliability of your spreadsheets. In this handout, we'll explore the various techniques and options available for implementing data validation effectively.

The following activities will help students to use the data validation feature in spreadsheet applications.

#### **Defined Name**

- In Excel, a "Defined Name" is a feature that allows you to assign a meaningful name to a cell, range of cells, constant, or formula. This name can then be used in formulas and functions instead of referring to the actual cell or range address.



[Defined Name](https://support.microsoft.com) – support.microsoft.com



**Activity 06.1:** What advantages can be realized through the use of defined names for your cells or cell ranges?



**Activity 06.2**

“O-Zone” a leading software company in Sri Lanka, has recently recruited some employees to different departments of their company.

## ITC1370: Information Technology for Business (2024)

Department of Information Technology  
Faculty of Management Studies and Commerce  
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The details of the newly recruited employees, including their respective departments and provinces, are provided in the sheet titled 'New Recruits Information.' Please use this sheet to perform the following tasks.

	A	B	C	D	E	F
1	<b>O-Zone Employees</b>					
2		<b>Finance</b>	<b>Operations</b>	<b>Marketing</b>	<b>Accounting</b>	<b>Human Resource</b>
3	<b>Northern</b>	Sithara Aththanayake	Nuwanthi Wijethunga	Kugan Kuganeshwaran	Susen Mohamed	Nipuni Yasarath
4	<b>Southern</b>	Danushka Atapaththu	Rifan Arshad	Jayani Hettiarachchi	Chamara Senanayake	Kasun Perera
5	<b>Western</b>	Akeel Kasim	Sugandi Ranathunga	Gouthaman Chandrasekar	Thushini Liyanage	Sulakshana Samaranayaka
6	<b>Eastern</b>	Sasikumar Selvendra	Selvaraja Kandiyar	Tharindu Padumasena	Kavitha Ranjan	Fareeha Halim
7	<b>North Eastern</b>	Nuwan Gunawardena	Vishmi Perera	Kavindi Gunasinghe	Saheera Ameen	Sugath Jayewardena
8						
9						
10	<b>Department Chosen</b>	Operations	<b>Department position</b>	2		
11	<b>Province Chosen</b>	Southern	<b>Province position</b>	2		
12						
13						
14			<b>Employee</b>	Rifan Arshad		

1. You are required to create appropriate range names for cells B2 to F2 and cells A3 to A7.
2. Create data validation lists for cells B10 and B11 using the range names defined.
3. Create a formula in cells D10 and D11 to calculate the positions of the department/province choices made in cells B10 and B11 (use the MATCH function)
4. Now create a formula in the D14 cell to show the employee relevant for this department/province combination (use INDEX function)
5. Use the IFERROR function to handle the errors in formulas where necessary.
6. Define an appropriate range name for cells B3 to F7.

### Data validation

- Data validation in Excel is a feature that allows you to control what can be entered into a cell or range of cells.



[Apply data validation to cells](https://support.microsoft.com) – support.microsoft.com



**Activity 06.3:** What are the drawbacks of not using data validation in Spreadsheets?



**Activity 06.4**

“O-Zone” uses the “Emp\_Master” sheet to save the employees' details of the company.

	A	B	C	D	E	F	G
1	<b>O-Zone Employees</b>						
2	<b>Employee Number</b>	<b>Department</b>	<b>Name</b>	<b>Salary</b>	<b>Bonus</b>	<b>Date of Birth</b>	<b>Date of Appointment</b>
3	E1000	Operations	Nuwanthi Wijethunga	LKR 25,000.00	LKR 2,500.00	3/2/2004	2/2/2024
4	E1001						
5	E1002						
6	E1003						
7	E1004						
8	E1005						
9	E1006						

Use the “Emp\_Master” sheet to do the following data validations.

1. Insert data validation to the **Employee Number** column where its length should be exactly 5 characters long. If the user enters an incorrect value, display a warning style error alert saying, “Employee number should be a five-character value.” with a customized message title.
2. New recruits will be given a salary in the range of LKR 20,000 – LKR 25,000. Insert a suitable data validation into the **Salary** column.
3. **Bonus** cannot be greater than 10% of the salary.
4. **Date of Birth** is not permitted to enter dates within the last 18 years from today.
5. **Date of the Appointment** should be a weekday, appointment date should not be a weekend date.
6. Create a data validation list in **Department** Column cells to select Departments given in the table named “New Recruits Information” (use the defined range name).
7. Create a Dependent Drop-Down List in **Name** Column cells to select employees in relevant departments given in the table named “New Recruits Information” (Use Index function with match function)



### **Self-Learning Activity**

#### **Activity 06.5**

Hasitha is a retail business owner. He maintains an excel workbook to enter daily transactions. Recently he has hired a new employee to maintain this data. But he needs to make sure that new employees will enter the accurate data. So, he is asking for your help to perform some mechanism to prevent entering inaccurate data. Use the data validation knowledge to prevent entering wrong data in relevant cell ranges.

1. ITEM code should contain only 5 characters (E.g. S1001)
2. Provide a validation to prevent entering past or future dates in Date cell. (only today date needs to be displayed)
3. Suppose the shop starts at 8:30 am and closes at 6.30 PM. Provide a suitable validation to prevent entering time before opening time or after closing time.
4. This shop is involved with the only wholesale business and in one batch they only include items between 10-50. Provide a correct validation to enter the number of units between 10-50. Quantity should be a whole number.
5. Write a formula to get the total price. Provide a suitable validation to prevent incorrect calculation for the total price.
6. The maximum discount amount is 10%. Provide a suitable validation to prevent inputs which exceed the maximum discount amount.
7. The discount should be deducted from the total price to get the selling price. Write a formula to get the selling price. Provide suitable validation to prevent incorrect calculation to get the sales price.