Google Drive

Google Drive is a cloud-based storage service that allows users to store, access, and share files and folders online from any device.

* Creating files/folders: You can create new folders to organize content or new files using the integrated Google applications (Docs, Sheets, etc.).
* Saving and downloading: Files created in Google apps are automatically saved to your Drive. You can also upload existing files from your computer and download any file from Drive in various formats.
* Sharing: You can share files or entire folders with specific people by entering their email addresses or by generating a shareable link. You control access by setting permissions as "Viewer," "Commenter," or "Editor".

Google Docs

Google Docs is a web-based word processor for creating, editing, and storing text documents online.

* Creating and sharing: Multiple users can edit the same document at the same time. Collaborators can be added via email or link, and their changes are visible in real-time.
* Import and export: You can import documents in formats like .docx (Microsoft Word) and convert them to Google Docs format. You can also export Google Docs files as Word documents, PDFs, and other formats.

Google Sheets

Google Sheets is a web-based spreadsheet program for organizing, analyzing, and visualizing data.

* Creating and sharing: Like Docs, Sheets supports real-time, multi-user collaboration. It is also fully integrated with other Google products, including Google Forms, which can automatically send data to a Sheet.
* Import and export: Data can be imported from Excel files (.xlsx), Comma-Separated Value (.csv) files, and other formats. You can also export a Sheet in formats like .xlsx or .csv.

Google Forms

Google Forms is an online tool for creating surveys, quizzes, and other data-gathering web forms.

* Creating and sharing: You can design forms with various question types and share them with an audience via email, a direct link, or by embedding them on a website.
* Form responses: Responses are automatically collected and can be viewed directly within Forms as a summary of charts and graphs. For detailed analysis, responses can be sent to a connected Google Sheet.

Google Slides

Google Slides is a web-based presentation tool for creating and delivering slideshows.

* Creating and sharing: It works like other presentation software, with support for real-time collaboration. Users can share presentations with others and grant varying levels of access (viewing, commenting, or editing).
* Presenting ideas: A presentation can be shown in full-screen slideshow mode. Presenter View allows you to see speaker notes and control the presentation. Slides can also be published to the web for public viewing via a link.

# Questions

Google Drive

1. File Management: How would you organize a new project folder in Google Drive and ensure only your project team can access and edit the files?
2. Permissions: Explain the difference between "Viewer," "Commenter," and "Editor" access when sharing a folder in Google Drive.
3. Downloading: If you need to access a Google Doc offline, what is the process for downloading it, and what file format might you choose?
4. Creation: Name three different types of files you can create directly from the Google Drive interface.
5. Access: How can you share a file with someone who does not have a Google account?

Google Docs

1. Collaboration: You and a partner need to work on a single text document at the same time. How do you share the document, and how do you monitor your partner's changes?
2. Importing: What is the procedure for importing a Microsoft Word file (.docx) into Google Docs for online editing?
3. Exporting: After finishing a document, you need to provide a non-editable copy to a client. What is the best file format to export it as?
4. Version History: If you accidentally delete a crucial paragraph from a document, what feature in Google Docs can help you restore it?
5. Comments: What is the purpose of adding a comment in Google Docs, and when would you use it instead of directly editing the text?

Google Sheets

1. Data Import: How can you transfer data from an external file, like a .csv file, into a Google Sheet?
2. Formulas: What is a common formula you might use to count the number of unique entries in a column?
3. Sharing: You want to share a sales report spreadsheet with your manager but only want them to view the data, not change it. What access permission should you set?
4. Integration: Explain how Google Forms and Google Sheets work together.
5. Exporting: What download options are available in Google Sheets if you need to export the data for use in another program?

Google Forms

1. Question Types: Name three different types of questions you can add to a Google Form and provide an example for each.
2. Response Collection: What is the best way to collect and organize the responses to a survey created with Google Forms for later analysis?
3. Required Questions: How do you make a question mandatory so that a user cannot submit the form without answering it?
4. Customization: What options are available to change the look and feel of a Google Form?
5. Sharing: Describe two different methods for distributing a Google Form to gather responses from others.

Google Slides

1. Creation: Name two ways to start a new presentation in Google Slides.
2. Collaboration: Your team is working on a presentation together. How does real-time collaboration work in Google Slides, and what benefits does it offer?
3. Theme and Layout: After creating a presentation, how can you apply a pre-designed theme or change the layout of a single slide?
4. Presenting: During a presentation, you need to see your speaker notes without your audience seeing them. What is the proper way to do this?
5. Importing Slides: If you need to add slides from another Google Slides presentation into your current one, what is the procedure?

# MS Word concepts, tools, and uses

Core concept: MS Word is a word-processing program for creating and formatting text-based documents.

Common uses:

* Creating documents like letters, resumes, and reports.
* Typing academic papers with citations and footnotes.
* Generating marketing materials like newsletters or flyers.

Key tools:

* Home Tab: Contains basic formatting tools.
  + Clipboard: Cut, Copy, and Paste text.
  + Font: Adjust font style, size, color, and apply bold, italic, or underline.
  + Paragraph: Control alignment (left, center, right, justify), line spacing, and add bullet points or numbering.
  + Styles: Apply predefined formatting for headings and body text to maintain consistency.
* Insert Tab: Adds different elements to a document.
  + Tables: Insert tables to organize data into rows and columns.
  + Illustrations: Add pictures, shapes, icons, and charts.
  + Header & Footer: Insert information, like page numbers, at the top or bottom of pages.
  + Links: Create hyperlinks to external websites or other parts of the document.
* Layout Tab: Manages the overall page setup.
  + Page Setup: Adjust margins, page orientation (portrait or landscape), and paper size.
  + Paragraph: Control text indentation and spacing.
* Review Tab: Tools for proofreading and collaboration.
  + Proofing: Checks for spelling and grammar errors.
  + Comments: Allows users to add feedback without changing the text.
  + Track Changes: Records and displays all edits made to a document.
* Mailings Tab: Creates mail merges, envelopes, and labels.

# MS Excel concepts, tools, and uses

Core concept: MS Excel is a spreadsheet program that organizes data into rows and columns for calculations, analysis, and visualization.

Common uses:

* Financial Analysis: Creating budgets, financial models, and tracking expenses.
* Data Management: Storing and organizing large datasets, customer information, or inventories.
* Reporting: Generating business reports and performance dashboards.
* Project Management: Tracking project timelines, tasks, and deadlines.

Key tools:

* Formulas and Functions: The backbone of Excel's calculation power.
  + SUM, AVERAGE, MIN, MAX: Perform basic mathematical operations on a range of cells.
  + IF, VLOOKUP, XLOOKUP: Conduct logical comparisons and search for data within tables.
* Data Tab: Tools for managing and analyzing data.
  + Sort & Filter: Organize data in ascending or descending order or apply filters to view specific data.
  + Data Validation: Set rules for what can be entered into a cell to minimize data entry errors.
  + Text to Columns: Splits the content of a single cell into multiple cells.
  + Remove Duplicates: Automatically deletes duplicate entries from a dataset.
* Insert Tab: Adds visual elements for data visualization.
  + Charts: Create various charts (bar, line, pie) to represent data visually.
  + PivotTable: Summarizes and analyzes large datasets by rearranging fields.
* Conditional Formatting: Applies special formatting, such as color coding, to cells that meet specific criteria.
* Macros: Automates repetitive tasks by recording a series of actions.

# MS PowerPoint concepts, tools, and uses

Core concept: MS PowerPoint is a presentation program that uses a series of slides to display information in a graphical and engaging way.

Common uses:

* Business Presentations: Delivering sales pitches, project proposals, or corporate reports.
* Educational Presentations: Lecturing in a classroom or presenting research findings.
* Event Planning: Creating presentations for conferences, workshops, or personal events.

Key tools:

* Home Tab: Basic slide and content management.
  + Slides Group: Add new slides, change a slide's layout, and manage sections.
  + Font and Paragraph Groups: Basic text formatting options.
* Insert Tab: Add media and other objects.
  + Tables, Pictures, Shapes, Charts: Insert tables, images, and other visuals.
  + SmartArt: Add professional diagrams like flowcharts or hierarchies.
  + Media: Embed audio and video clips into slides.
* Design Tab: Controls the overall visual style.
  + Themes: Apply predefined design templates with consistent colors, fonts, and effects.
  + Slide Size and Format Background: Customize the slide's dimensions and background.
* Transitions Tab: Adds animation effects between slides.
  + Transition to This Slide: Choose from various visual effects to control how you move from one slide to the next.
* Animations Tab: Adds movement to specific objects on a slide.
  + Animate: Apply animations to text, images, or shapes.
* Slide Show Tab: Manages the presentation delivery.
  + Start Slide Show: View the presentation from the beginning or a specific slide.
  + Presenter View: See speaker notes, a timer, and a preview of upcoming slides while the audience sees only the main presentation.

# EXCEL formulas

There are hundreds of formulas in Excel, and describing all of them comprehensively is not feasible. Below are descriptions and implementations for the most important categories and functions, which are fundamental for a wide range of tasks, from basic calculations to advanced data analysis.

The foundation of Excel formulas

* Syntax: All formulas must begin with an equal sign (=).
* Elements: Formulas can combine functions, cell references, names, operators, and constants.
* Automatic Updates: Formulas automatically update their results if you change the data in the cells they reference.

Mathematical functions

Excel includes functions like SUM for adding numbers, SUMIF and SUMIFS for conditional sums, AVERAGE for calculating the mean, and COUNT and COUNTIF for counting cells based on criteria. Functions like MIN and MAX are used to find the smallest and largest values in a range.

Logical functions

These functions test conditions and return results based on whether they are TRUE or FALSE. Examples include IF, AND, and OR. The IFS function allows checking multiple conditions without nesting.

Lookup and reference functions

Functions such as VLOOKUP and XLOOKUP are used to search for and retrieve data from ranges or tables. The combination of INDEX and MATCH offers a flexible alternative for lookups.

Text functions

Functions like CONCATENATE join text strings, TRIM removes extra spaces, LEFT, RIGHT, and MID extract characters, and LEN counts characters.

Date and time functions

These functions help with date and time calculations. TODAY and NOW return the current date and time, respectively. DATEDIF calculates the difference between dates, and NETWORKDAYS counts working days. For more details, see LinkedIn.

Financial functions

Excel offers functions for financial analysis. PMT calculates loan payments, and NPV and FV deal with net present and future values of investments. RATE calculates the interest rate. For more details on PMT, NPV, and FV, see Corporate Finance Institute.

Statistical functions

Excel includes many statistical tools like AVERAGEIF/AVERAGEIFS, STDEV.S, and CORREL.

Array formulas

Array formulas operate on ranges of cells. SUMPRODUCT multiplies and sums corresponding array components. Dynamic array functions in Office 365, such as FILTER, UNIQUE, and SORT, automatically spill results into multiple cells.

# Sum:

| **A** | **B** |
| --- | --- |
| Name | Marks |
| Rahul | 85 |
| Priya | 72 |
| Amit | 90 |
| Neha | 60 |
| Rohit | 75 |

=SUM(B2:B6) This will add all the marks **85+72+90+60+75 = 382**.

**2. SUMIF – Conditional sum (one condition)**

Formula:

=SUMIF(B2:B6, ">80")

👉 Adds marks **greater than 80** → (85 + 90) = **175**.

**3. SUMIFS – Conditional sum (multiple conditions)**

Formula:

=SUMIFS(B2:B6, B2:B6, ">70", B2:B6, "<90")

👉 Adds marks that are **greater than 70 but less than 90** → (85 + 72 + 75) = **232**.

**4. AVERAGE – Mean value**

Formula:

=AVERAGE(B2:B6)

👉 (85+72+90+60+75) ÷ 5 = **76.4**

**5. COUNT – Count total numbers in a range**

Formula:

=COUNT(B2:B6)

👉 Counts numeric values → **5 students**.

**6. COUNTIF – Count based on condition**

Formula:

=COUNTIF(B2:B6, ">80")

👉 Counts how many marks are greater than 80 → (85, 90) → **2 students**.

**7. MIN – Smallest value**

Formula:

=MIN(B2:B6)

👉 Smallest mark = **60**

**8. MAX – Largest value**

Formula:

=MAX(B2:B6)

👉 Largest mark = **90**

| **A** | **B** |
| --- | --- |
| Name | Marks |
| Rahul | 85 |
| Priya | 72 |
| Amit | 90 |
| Neha | 60 |
| Rohit | 75 |

**. IF – Check a condition and return result**

Formula:

=IF(B2>=75, "Pass", "Fail")

👉 For **Rahul (85)** → condition is TRUE → result = **Pass**.  
👉 For **Neha (60)** → condition is FALSE → result = **Fail**.

**2. AND – Returns TRUE only if all conditions are TRUE**

Formula:

=IF(AND(B2>=70, B2<=90), "Within Range", "Out of Range")

👉 For **Priya (72)** → both conditions TRUE → **Within Range**.  
👉 For **Amit (90)** → TRUE for first, TRUE for second → **Within Range**.  
👉 For **Neha (60)** → fails → **Out of Range**.

**3. OR – Returns TRUE if any one condition is TRUE**

Formula:

=IF(OR(B2<65, B2>85), "Special Case", "Normal")

👉 For **Neha (60)** → first condition TRUE → **Special Case**.  
👉 For **Amit (90)** → second condition TRUE → **Special Case**.  
👉 For **Rohit (75)** → both FALSE → **Normal**.

**4. IFS – Check multiple conditions (no nesting)**

Formula:

=IFS(B2>=90, "Outstanding",

B2>=75, "Good",

B2>=60, "Average",

TRUE, "Poor")

👉 For **Amit (90)** → **Outstanding**  
👉 For **Rahul (85)** → **Good**  
👉 For **Priya (72)** → **Average**  
👉 For **Neha (60)** → **Average**  
👉 If marks were below 60 → **Poor**

| **A** | **B** | **C** |
| --- | --- | --- |
| ID | Name | Marks |
| 101 | Rahul | 85 |
| 102 | Priya | 72 |
| 103 | Amit | 90 |
| 104 | Neha | 60 |
| 105 | Rohit | 75 |

**1. VLOOKUP – Vertical Lookup**

👉 Suppose you want to find the **Marks of Amit (103)**.

Formula:

=VLOOKUP(103, A2:C6, 3, FALSE)

Explanation:

* 103 → value to search (ID)
* A2:C6 → lookup table
* 3 → column number in the table to return (Marks)
* FALSE → exact match

Result = **90**

**2. XLOOKUP – Modern, more powerful lookup**

👉 Same task: Find **Marks of ID 104**.

Formula:

=XLOOKUP(104, A2:A6, C2:C6, "Not Found")

Explanation:

* 104 → value to search (ID)
* A2:A6 → lookup column (IDs)
* C2:C6 → return column (Marks)
* "Not Found" → optional message if ID doesn’t exist

Result = **60**

**3. INDEX + MATCH – Flexible Lookup Alternative**

👉 Find the **Marks of Priya**.

Formula:

=INDEX(C2:C6, MATCH("Priya", B2:B6, 0))

Explanation:

* MATCH("Priya", B2:B6, 0) → Finds the row where Priya is (Row 3 in this range).
* INDEX(C2:C6, 2) → Returns the 2nd value from the Marks column = **72**

Result = **72**

**VLOOKUP** → Simple but only searches left-to-right.

**XLOOKUP** → More powerful, searches both directions.

**INDEX+MATCH** → Flexible, often used in advanced reporting

| **A** | **B** |
| --- | --- |
| First | Last |
| Rahul | Sharma |
| Priya | Verma |
| Amit | Singh |
| Neha | Gupta |

**1. CONCATENATE (or CONCAT) – Join text strings**

Formula:

=CONCATENATE(A2," ",B2)

👉 Joins **First + Last name** with a space.  
Result for Rahul → **Rahul Sharma**

*(In newer Excel versions, you can also use =CONCAT(A2," ",B2) or =A2 & " " & B2)*

**2. TRIM – Removes extra spaces**

Suppose cell C2 contains " Amit Singh " (with extra spaces).

Formula:

=TRIM(C2)

👉 Removes all extra spaces → **Amit Singh**

**3. LEFT – Extract characters from the start**

Formula:

=LEFT(B2, 3)

👉 Takes first 3 letters of last name **Sharma** → **Sha**

**4. RIGHT – Extract characters from the end**

Formula:

=RIGHT(B2, 3)

👉 Takes last 3 letters of last name **Sharma** → **ma**

**5. MID – Extract characters from the middle**

Formula:

=MID(B2, 2, 3)

👉 From **Sharma**, starting at position 2, take 3 letters → **har**

**6. LEN – Count number of characters (including spaces)**

Formula:

=LEN(B2)

👉 For **Sharma** → 6 characters

**1. Date & Time Functions**

Example: Assume today is **11-Sep-2025**.

| **A** | **B** |
| --- | --- |
| Start | End |
| 01-Jan-2024 | 11-Sep-2025 |
|  |  |

**a) TODAY → Current date**

=TODAY()

👉 Returns **11-Sep-2025**

**b) NOW → Current date & time**

=NOW()

👉 Returns **11-Sep-2025 10:30 AM** (example, depends on system time)

**c) DATEDIF → Difference between two dates**

=DATEDIF(A2, B2, "Y")

👉 Full years between Jan 2024 and Sep 2025 = **1 year**

=DATEDIF(A2, B2, "M")

👉 Full months = **20 months**

**d) NETWORKDAYS → Working days between two dates**

=NETWORKDAYS(A2, B2)

👉 Returns number of weekdays (excludes Saturdays/Sundays).

**💰 2. Financial Functions**

Example: You take a **loan of ₹100,000** at **10% annual interest**, to be repaid in **5 years (60 months)**.

**a) PMT – Loan payment**

=PMT(10%/12, 60, -100000)

👉 Monthly EMI ≈ **-2124.70** (negative = cash outflow).

**b) NPV – Net Present Value of investment**

Future cash inflows: 20,000 each year for 5 years. Discount rate = 8%.

=NPV(8%, 20000,20000,20000,20000,20000)

👉 NPV = **79,854**

**c) FV – Future Value**

Invest ₹2,000 per month at 6% annual interest for 3 years.

=FV(6%/12, 36, -2000, 0, 1)

👉 Future value ≈ **78,572**

**d) RATE – Interest rate calculation**

Suppose loan EMI is ₹2,124.70, 60 months, loan ₹100,000.

=RATE(60, -2124.7, 100000)\*12

👉 Returns ~ **10% annual interest**

**📊 3. Statistical Functions**

Example: Marks = {85, 72, 90, 60, 75}

**a) AVERAGEIF – Average with condition**

=AVERAGEIF(A2:A6, ">70")

👉 Average of marks greater than 70 = **80.67**

**b) AVERAGEIFS – Multiple conditions**

=AVERAGEIFS(A2:A6, A2:A6, ">60", A2:A6, "<90")

👉 Average of marks between 60 and 90 = **77.33**

**c) STDEV.S – Standard deviation of sample**

=STDEV.S(A2:A6)

👉 ≈ **11.25**

**d) CORREL – Correlation between two sets**

Marks vs Hours studied:

| **Marks** | **Hours** |
| --- | --- |
| 85 | 5 |
| 72 | 4 |
| 90 | 6 |
| 60 | 2 |
| 75 | 3 |

=CORREL(A2:A6, B2:B6)

👉 Returns ~ **0.97** (strong positive correlation).

**🧮 4. Array Formulas**

**a) SUMPRODUCT – Multiply arrays & sum results**

| **Qty** | **Price** |
| --- | --- |
| 10 | 50 |
| 5 | 40 |
| 8 | 30 |

=SUMPRODUCT(A2:A4, B2:B4)

👉 (10×50 + 5×40 + 8×30) = **820**

**b) FILTER – Extract matching data (Dynamic Array, Office 365)**

=FILTER(A2:C6, C2:C6>70)

👉 Returns all rows where Marks > 70

**c) UNIQUE – Get unique values**

If column has {Rahul, Priya, Amit, Rahul, Neha}:

=UNIQUE(A2:A6)

👉 Returns {Rahul, Priya, Amit, Neha}

**d) SORT – Sort values automatically**

=SORT(C2:C6, 1, -1)

👉 Sorts Marks column in descending order

# QueStions

**MS Excel**

1. Formulas and Functions:
   * What is the difference between an absolute cell reference and a relative cell reference, and why is this distinction important when copying a formula?
   * Explain the purpose of the VLOOKUP function. What is one of its primary limitations, and what modern function has largely replaced it to overcome this limitation?
   * Write a formula to calculate the average sales for a specific product category from a table named SalesData, where the category is in column B and the sales figures are in column C.
2. Data Management:
   * You have a large dataset of customer names and email addresses. How would you quickly remove all duplicate entries from the list?
   * Explain how to create a drop-down list in a cell using data validation.
   * Describe the steps for creating a PivotTable to summarize monthly sales data from a raw data sheet.
3. Data Visualization and Analysis:
   * What is conditional formatting, and provide an example of how you would use it to highlight the top 10% of sales figures in a column.
   * When would you choose a bar chart over a pie chart to display your data?
   * How can you use the "What-If Analysis" tool, specifically "Goal Seek," to find the necessary sales figure to reach a specific profit target?
4. Macros:
   * Explain the concept of a macro in Excel. When would you use a macro, and what is the programming language used to create and edit them?
5. Data Integrity:
   * You are sharing a complex Excel workbook with a colleague. How can you protect certain cells or entire sheets to prevent them from being accidentally changed?

**MS Word**

1. Document Formatting:
   * What are "Styles" in MS Word, and how do they help maintain consistent formatting throughout a document, especially for headings and body text?
   * Explain how to create a Table of Contents automatically based on the headings in your document.
2. Collaboration and Review:
   * Describe the function of "Track Changes." How would you accept or reject individual changes made by a reviewer?
   * What is the purpose of the "Comments" feature, and when would you use it instead of directly editing the text?
3. Advanced Features:
   * Explain the Mail Merge process. What is the "data source," and what is the "main document"?
   * How can you insert a watermark into a Word document to indicate that it is a "Draft" or "Confidential"?
4. Document Layout:
   * Explain the difference between inserting a "Page Break" and a "Section Break."
   * How would you apply a custom border to a specific page or section of a document?
5. Document Structure:
   * What is the purpose of a "Header" and "Footer"? How would you configure them to have different content on the first page versus the rest of the document?

**MS PowerPoint**

1. Presentation Basics:
   * How would you use the "Slide Master" view to ensure a consistent logo, font, and color scheme across all slides in your presentation?
   * Explain the difference between a "Slide Transition" and an "Animation."
2. Interactive Presentations:
   * How can you use hyperlinks and "Action Buttons" to create a non-linear or interactive presentation that allows the user to jump to specific slides or resources?
   * Describe how to create a self-running slideshow that loops continuously for a kiosk display.
3. Multimedia Integration:
   * You need to add a YouTube video to a slide without leaving the presentation. How would you do this? What is a prerequisite for this to work during a presentation?
   * How do you record a narration for a slide show to present without a live speaker?
4. Presentation Delivery:
   * What is "Presenter View," and how does it help a speaker deliver a presentation more effectively?
   * If you need to share a presentation with someone who doesn't have PowerPoint, what export option would you use, and what are the advantages?
5. Object Management:
   * How would you align and evenly distribute multiple shapes or images on a slide for a clean, professional look?
   * What is the benefit of grouping multiple objects (like a text box and an arrow) together on a slide?