1. 1. What is Excel? Why do we use Excel?

Ans

a software program created by Microsoft that uses spreadsheets to organize numbers and data with formulas and functions. Excel analysis is ubiquitous around the world and used by businesses of all sizes to perform [financial analysis](https://corporatefinanceinstitute.com/collections/finance).

Excel is typically used to organize data and perform financial analysis.  It is used across all business functions and at companies from small to large.

The main uses of Excel include:

* Data entry
* Data management
* [Accounting](https://corporatefinanceinstitute.com/collections/accounting)
* [Financial analysis](https://corporatefinanceinstitute.com/collections/finance)
* Charting and graphing
* Programming
* Time management
* Task management
* [Financial modeling](https://corporatefinanceinstitute.com/resources/knowledge/modeling/what-is-financial-modeling/)
* Customer relationship management (CRM)
* Almost anything that needs to be organized!

Excel is used **to store, analyze, and report on large amounts of data**. It is often used by accounting teams for financial analysis, but can be used by any professional to manage long and unwieldy datasets. Examples of Excel applications include balance sheets, budgets, or editorial calendars.

2.List all the versions of Microsoft excel. Compare excel software provided from multiple vendors.

Ans

[Excel 365](https://thesmartmethod.com/excel-versions-explained/#365)  
[Excel 2021](https://thesmartmethod.com/excel-versions-explained/#2021)  
[Excel 2019](https://thesmartmethod.com/excel-versions-explained/#2019)  
[Excel 2016 and 365](https://thesmartmethod.com/excel-versions-explained/#2016)  
[Excel 2013 (Windows)](https://thesmartmethod.com/excel-versions-explained/#2013)  
[Excel 2011 (Mac)](https://thesmartmethod.com/excel-versions-explained/#2011)  
[Excel 2010 (Windows)](https://thesmartmethod.com/excel-versions-explained/#2010)  
[Excel 2008 (Mac)](https://thesmartmethod.com/excel-versions-explained/#2008)  
[Excel 2007 (Windows)](https://thesmartmethod.com/excel-versions-explained/#2007)  
[Excel 2004 (Mac)](https://thesmartmethod.com/excel-versions-explained/#2004)  
[Excel 2003 (Windows)](https://thesmartmethod.com/excel-versions-explained/#2003)  
[Older Windows versions (2002, 2000, 97, 95, 4.0, 3.0, 2.0)](https://thesmartmethod.com/excel-versions-explained/#olderwindows)  
[Older Mac versions (2001, 2000, 98, 5, 4, 3, 2, 1)](https://thesmartmethod.com/excel-versions-explained/#oldermac)  
[OS/2 Versions (2.2, 2.3, 3)](https://thesmartmethod.com/excel-versions-explained/#os2)

**Excel 365**

Excel 365 is planned to have an infinite life.  Instead of the old 3-year update cycle, 365 is a constantly evolving product with new features arriving as each new version is released.

Because business users don’t want constant change (and need rock-solid reliable releases) Microsoft introduced the concept of “update channels” for Office 365.  Large corporate users can opt in to a six-monthly update channel.  This provided a solid and tested “Semi-annual” version  in January and July each year.  The Smart Method supports the ever-changing nature of Office 365 by publishing a new version of our books every time significant new features are added.

## Excel 2021

Many commentators speculated that there would never be an Excel 2021 but they were wrong for a second time.

It does seem strange to release yet another “perpetual licence” version of Office that would be sold alongside Excel 365.

It is clear that Microsoft have completely embraced the SaaS (software as a service) model where software is rented and not sold.  They seem to have also acknowledged that there are some purchasers that still prefer the “buy once use forever” model.

## Excel 2019

Many commentators speculated that there would never be an Excel 2019.

Microsoft kept us guessing right up to the last minute before announcing that there would indeed be another “perpetual licence” version of Office that would be sold alongside Excel 365.

It is clear that Microsoft have completely embraced the SaaS (software as a service) model where software is rented and not sold.  They seem to have also acknowledged that there are some purchasers that still prefer the “buy once use forever” model.

3.How to create bar charts in excel, demonstrated with practical example

Ans

***Bar charts in Excel****are useful in representing the single data on the horizontal bar. They represent the values in horizontal bars. Categories are displayed on the Y-axis in these charts, and values are shown on the X-axis. To create or make a bar chart, a user needs at least two variables, i.e., independent and dependent variables.*

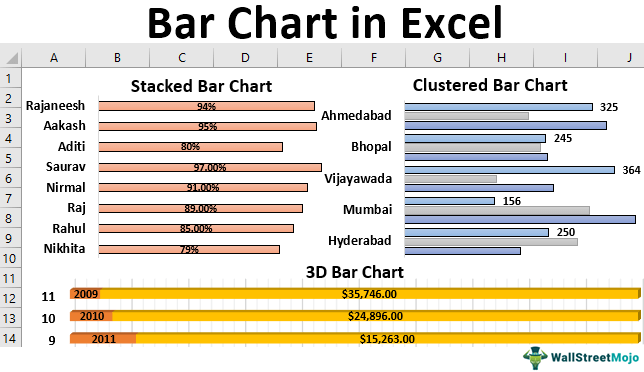
For example, we can potentially turn any Excel data into a stacked bar graph that can display comparisons between categories of data, ranking, part-to-whole, deviation, or distribution. It compares parts of a whole with the ability to break down. We can also use the clustered bar chart to represent more than one data series in clustered horizontal columns when the data is complex and difficult to understand. In addition, we can also use a 3D bar chart to provide the title to the chart and define labels and values to create the chart more understandable.

**Independent Variable:** This does not change concerning any other variable.

**Dependent Variable:** This change concerning the independent variable.

Mainly there are three types of bar charts in Excel.

1. **Stacked Bar Chart:** It is also referred the segmented chart. It represents all the dependent variables by stacking them together and on top of other variables.
2. **Clustered Bar Chart:** This chart groups all the dependent variables together to display in a graph format. A clustered chart with two dependent variables is the double graph.
3. **3D Bar Chart:** This chart represents all the dependent variables in 3D representation.



4.Create an analytics dashboard in python and present your findings.

Ans

# Building your first dashboard in Python

Yes, building dashboards in Dash is that simple. Install Pandas and dash with the following command, then start the timer.

pip install dash pandas

In your project directory, create a file called app.py with the below content.

pip install dash pandas

In your project directory, create a file called app.py with the below content.

import dash

import dash\_core\_components as dcc

import dash\_html\_components as html

import plotly.express as px

import pandas as pd

app = dash.Dash()

df = pd.read\_csv(

"https://raw.githubusercontent.com/ThuwarakeshM/geting-started-with-plottly-dash/main/life\_expectancy.csv"

)

fig = px.scatter(

df,

x="GDP",

y="Life expectancy",

size="Population",

color="continent",

hover\_name="Country",

log\_x=True,

size\_max=60,

)

app.layout = html.Div([dcc.Graph(id="life-exp-vs-gdp", figure=fig)])

if \_\_name\_\_ == "\_\_main\_\_":

app.run\_server(debug=True)

let's run the dashboard with the following command:

python app.py

5.How to connect Excel with the databases.

Ans

# Connect Excel to a database in Azure SQL Database or Azure SQL Managed Instance

You can connect Excel to a database and then import data and create tables and charts based on values in the database. In this tutorial you will set up the connection between Excel and a database table, save the file that stores data and the connection information for Excel, and then create a pivot chart from the database values.

You'll need to create a database before you get started. If you don't have one, see [Create a database in Azure SQL Database](https://docs.microsoft.com/en-us/azure/azure-sql/database/single-database-create-quickstart?view=azuresql) and [Create server-level IP firewall](https://docs.microsoft.com/en-us/azure/azure-sql/database/firewall-create-server-level-portal-quickstart?view=azuresql) to get a database with sample data up and running in a few minutes.

In this article, you'll import sample data into Excel from that article, but you can follow similar steps with your own data.

You'll also need a copy of Excel. This article uses [Microsoft Excel 2016](https://products.office.com/).

## Connect Excel and load data

1. To connect Excel to a database in SQL Database, open Excel and then create a new workbook or open an existing Excel workbook.
2. In the menu bar at the top of the page, select the **Data** tab, select **Get Data**, select From Azure, and then select **From Azure SQL Database**.
3. In the **SQL Server database** dialog box, type the **Server name** you want to connect to in the form <*servername*>**.database.windows.net**. For example, **msftestserver.database.windows.net**. Optionally, enter in the name of your database. Select **OK** to open the credentials window.
4. In the **SQL Server database** dialog box, type the **Server name** you want to connect to in the form <*servername*>**.database.windows.net**. For example, **msftestserver.database.windows.net**. Optionally, enter in the name of your database. Select **OK** to open the credentials window.
5. In the **Navigator**, select the database you want to work with from the list, select the tables or views you want to work with (we chose **vGetAllCategories**), and then select **Load** to move the data from your database to your Excel spreadsheet.

## Import the data into Excel and create a pivot chart

Now that you've established the connection, you have several different options with how to load the data. For example, the following steps create a pivot chart based on the data found in your database in SQL Database.

1. Follow the steps in the previous section, but this time, instead of selecting **Load**, select **Load to** from the **Load** drop-down.
2. Next, select how you want to view this data in your workbook. We chose **PivotChart**. You can also choose to create a **New worksheet** or to **Add this data to a Data Model**. For more information on Data Models, see [Create a data model in Excel](https://support.office.com/article/Create-a-Data-Model-in-Excel-87E7A54C-87DC-488E-9410-5C75DBCB0F7B).

The worksheet now has an empty pivot table and chart.

1. Under **PivotTable Fields**, select all the check-boxes for the fields you want to view.

## Create a permanent connection using .odc file

To save the connection details permanently, you can create an .odc file and make this connection a selectable option within the **Existing Connections** dialog box.

1. In the menu bar at the top of the page, select the **Data** tab, and then select **Existing Connections** to launch the **Existing Connections** dialog box.
   1. Select **Browse for more** to open the **Select Data Source** dialog box.
   2. Select the **+NewSqlServerConnection.odc** file and then select **Open** to open the **Data Connection Wizard**.

In the **Data Connection Wizard**, type in your server name and your SQL Database credentials. Select **Next**.

1. Select the database that contains your data from the drop-down.
2. Select the table or view you're interested in. We chose vGetAllCategories.
3. Select **Next**.
4. Select the location of your file, the **File Name**, and the **Friendly Name** in the next screen of the Data Connection Wizard. You can also choose to save the password in the file, though this can potentially expose your data to unwanted access. Select **Finish** when ready.
5. Select how you want to import your data. We chose to do a PivotTable. You can also modify the properties of the connection by select **Properties**. Select **OK** when ready. If you did not choose to save the password with the file, then you will be prompted to enter your credentials.
6. Verify that your new connection has been saved by expanding the **Data** tab, and selecting **Existing Connections**.