- PBI is a Business Intelligence tool
- Converts raw data into dashboards
- Management can track KPIs (sales, profits)
   (i) Compare regional performance
   (ii) Analyze product level trends
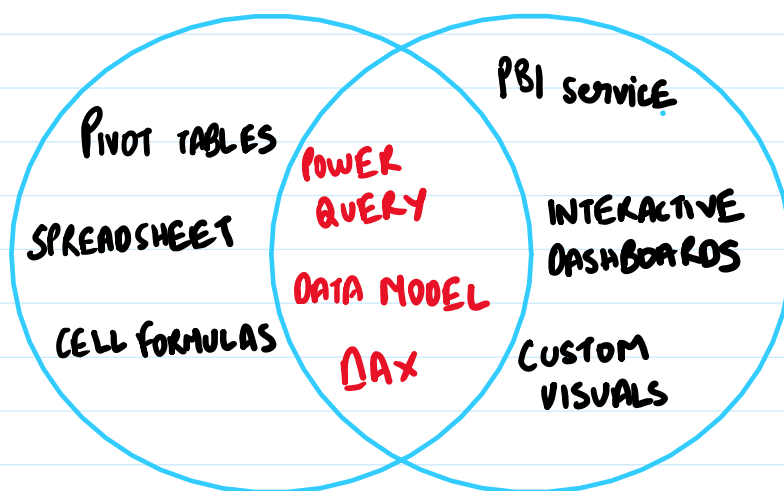   (iii) Identify high value customers

- Connect raw data
- Transform - Power Query
- Build data Model
- Create calculated columns - DAX
- Design dashboard

M code ✗
R/Python visuals ✗
Advanced DAX ✗

EXCEL VS PBI

Pivot Tables
SPREADSHEET
CELL FORMULAS

POWER QUERY
DATA MODEL
DAX

PBI service
INTERACTIVE DASHBOARDS
CUSTOM VISUALS

Download →

Microsoft Store   Website
↓
Automatic updates

PBI Desktop - Free
PBI Service - PRO

PBI Settings

File > options & settings > Options :
   (i) Global > Preview Features → Select all
   (ii) Current file > Data load - NOT SELECTED
         a) Update/delete relationships when refreshing data

(ii) Current file > Data load - NOT SELECTED.
  a) Update/delete relationships when refreshing data
  b) Auto detect new relationships
  c) Time Intelligence > Auto date/Time

Note: Options under [current file] need to be adjusted for every new PBI workbook.

Power Query Editor   Model view   Data view   Report view
        ↓   ↓
   Backend   Front end (ETL)

Power BI is updated monthly, so you may notice ongoing changes to settings, options, tools, etc.
Reference the links below to stay up-to-date on product updates and new feature releases:
Power BI Desktop
https://docs.microsoft.com/en-us/power-bi/fundamentals/desktop-latest-update
Power BI Service
https://docs.microsoft.com/en-us/power-bi/fundamentals/service-whats-new
Power Platform
https://learn.microsoft.com/en-us/dynamics365/release-plans/

POWER QUERY   (M code ✗)

Raw data is extracted, transformed & loaded to Front end (ETL)
  Home > Get data > Multiple connectors
- Power Query Editor

Home Tab:
- • Manage columns < keep ⊗ / Remove   Choose/keep column is useful when source data
                                          has variable number of columns each time
                                          we import the data.

- • Manage Rows < keep / Remove ⊗   • Can remove specific number of rows
                                       (Sub-Totals, headers, footers can be removed)

                                     • Duplicates can be removed

Adding new data from Query Editor:
  Home > New Source ⊗ [Update Table name of all new Tables, rename all new steps in Applied Steps]
Applied Steps: Source, Promoted headers, Changed data type (Automatic)
Change data types if required
Remove columns not required
      Close & apply - load to front end

Extract data from a column:
  Transform > Extract > Text before delimiter = Replace data in existing column
  Add column > Extract > Text before delimiter = Create a new column in the end of
  (Can skip delimiters in ↙   the table with the extracted data...

~~Add column > Extract > Text before delimiter~~ — ~~Create a new column in new over of~~
(can skip delimiters in ←
advanced options)   the table with the extracted data

Replace zero's with NA
        Transform > Replace values

Types of connection/ storage modes:
    Import   — Data is imported within PBI
    Direct Query. — Data is connected to the source
    Composite   — Import + Direct Query (Each table is either Imported or connected)
    Live connection -
    (Difference between Direct Query & Live connection)

Connecting to a Database — SQL, MS Access, My SQL, Oracle, SAP & a lot more
    (If you understand how to connect to one database, you can connect to any)
        ie. enter the server details & credentials
-If you have some data/Table which you do not want to load to Data Model,
    under Queries, right click on the Table & unselect ENABLE LOAD

Extract data from web   (scrape data from web)
        Enter URL < Table view
                      web view

- DATA PROFILING   (Initially column profiling is based on first 1000 rows, we need to change that
    1) View > Column quality   to column profiling based on entire dataset)
Shows % of values within a column that are | VALID , ERROR , EMPTY. |
    • Hover over column quality to see no. of records in each category
    • Right click for options Menu :
            a) Keep errors — check errors before removing them
            b) Remove errors, blanks, duplicates etc.

2) View > Column distribution
        Number of unique & distinct records in each column
    Right click: remove duplicates, errors & empty values

3) View > Column profiling
    • Column statistics = Count, Distinct count, unique, Min, Max
    • Value distributions = Sample distribution of the data

TEXT TOOLS < TRANSFORM
             ADD COLUMNS

Note: Ribbon changes with the type of column we have selected (Dynamic Ribbon)

(X) **Difference between TRANSFORM & ADD COLUMN**
                          ↓   ↓
                   Overwrite existing   ADD a new
                        column   column

Eg. Capitalize each word, Trim, clean, split columns
    Merge columns, Text before/after delimiter

Numerical Tools: < Transform (X) Distinct count, Avg, STD
                   Add column

Date & Time tools: < Transform
                     Add column (Extract Year, month, start of month/End of month)
                          (X) (Create Calendar)

What is date type is in DMY, but we are in US [DMY]
1) Convert data to Text format
2) Data type > Using Locale > UK

Rolling calendar M code – see again