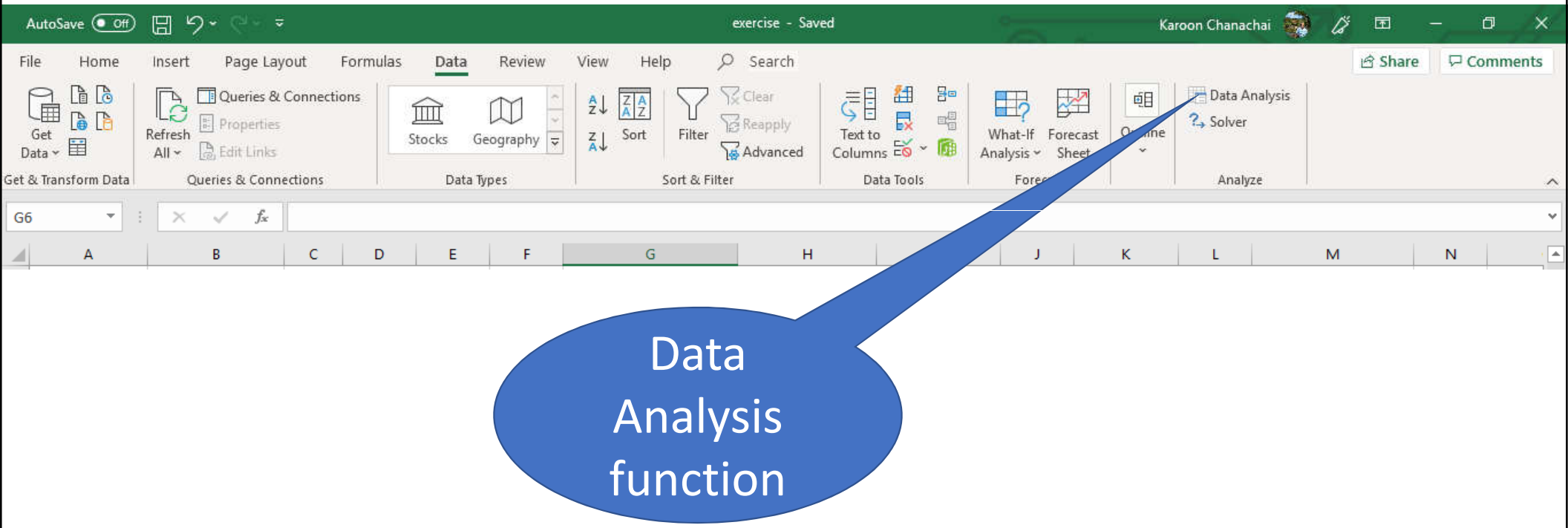
How to use Excel to Facilitate your Epidemiological Study

Before the class

- Add analysis toolpak function in excel spreadsheet by following this guideline https://support.office.com/th-th/article/%E0%B9%82%E0%B8%AB%E0%B8%A5%E0%B8%94-analysis-toolpak-%E0%B9%83%E0%B8%99-excel-6a63e598-cd6d-42e3-9317-6b40ba1a66b4
- Make sure that “data analysis” function appears in your Excel
- Download excel workbook named “exercise” that contain data and some questions and answers
- Spend time to review basic calculation function of Excel

Data analysis function



Data Analysis function

Learning objectives

After the participation, trainee should

- Have basic skill to use Excel functions that can facilitate your epidemiological work
  - Data entry, cleaning and validation – “data validation” functions
  - Data management – “if”, “OR”, “AND” and “VLOOKUP” functions
  - Pivot table to create summary tables – “PivotTable” function
  - Data analysis – “Analysis ToolPak” Add-ins

Pre-exercise: basic calculation functions (15 minutes)

- “+”, “-”, “*”, “/” – plus, minus, multiply, devide
- “^” – power
- “$” – fix row or column

Data entry template: “Data validation”

- To make data entry template
- To validate data

Lock cell to prevent other people change format and only enter data

- “Unlock” cell that you want other people to make change (fill-in) and “lock” cell that other people cannot make change
- Then, “protect” the worksheet.

Exercise 1 (30 minutes)

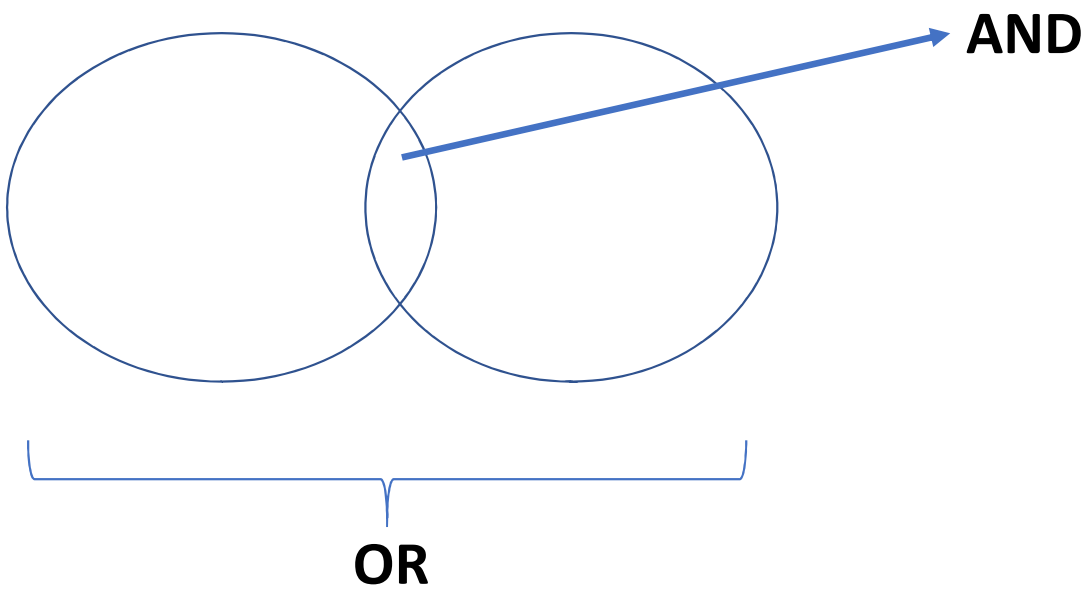
Please explore one-by-one “validation criteria” and create data entry form for the Questionnaire and protect to allow only for data entering

Data management: “if”, “OR” and “AND”

- To convert data to various form by given conditions

Data management: “OR” or “AND”

- To convert data to various form by given conditions



Exercise 2: please use basic calculation function and “if” to calculate BMI of participants in June course and group them into
normal = less than 25,
overweight = greater than or equal to 25
(15 minutes)
Use “OR” to convert physical exercise behavior and eating behavior into 2 groups (15 minutes)

Data management: “VLOOKUP”

Use for

- Combine two databases together

Exercise 3:

You want to use data from 2 databases, population dataset in the district and disease dataset. Two databases are collected separately, and name of the district is index column that can link these 2 databases.

Please use ‘Lookup” function to combine these 2 database. (15 minutes)

Data validation and analysis

“PivotTable” function

- Validate data before making analysis
- Summarize data to table (aggregated data)

Exercise 4: Please use pivot table to describe information of trainees (30 minutes)
And do epidemic curve using given dataset (10 minutes)

Add-in function: “Data Analysis”

- Descriptive analysis
- Test for equality of Variance
- Test for continuous data: Anova, T-test
- …..

Exercise 5: Please do descriptive data analysis and analytical statistic (F-test (test for equality of variance), t-test and ANOVA) by using “data analysis” (30 minutes)

At the end of the class you should

- Have basic skill to use Excel functions that can facilitate your epidemiological work
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  - Data management – “if”, “OR”, “AND” and “VLOOKUP” functions
  - Pivot table to create summary tables – “PivotTable” function
  - Data analysis – “Analysis ToolPak” Add-ins