Charity Digital Academy: Advanced Excel – tips and tricks

Charity Digital Academy

superhighways

harnessing technology for community benefit

What does Superhighways do?

Superhighways helps small charities and community groups gain essential digital and data skills backed by the right tech to achieve their goals.

What we'll cover today

Session 1: Managing your data

- ✓ Using Tables
- ✓ Classic Formulas
- ✓ Data validation
- ✓ Conditional formatting
- ✓ Total rows

Session 2: Pivot tables, charts and summary sheets

- ✓ Pivot tables & Charts
- ✓ Get Pivot Data
- ✓ Countif
- ✓ Xlookup

Session 3: Power Query

- ✓ Creating connection queries
- ✓ Appending queries
- ✓ Adding data and refreshing queries

How we'll run the training:

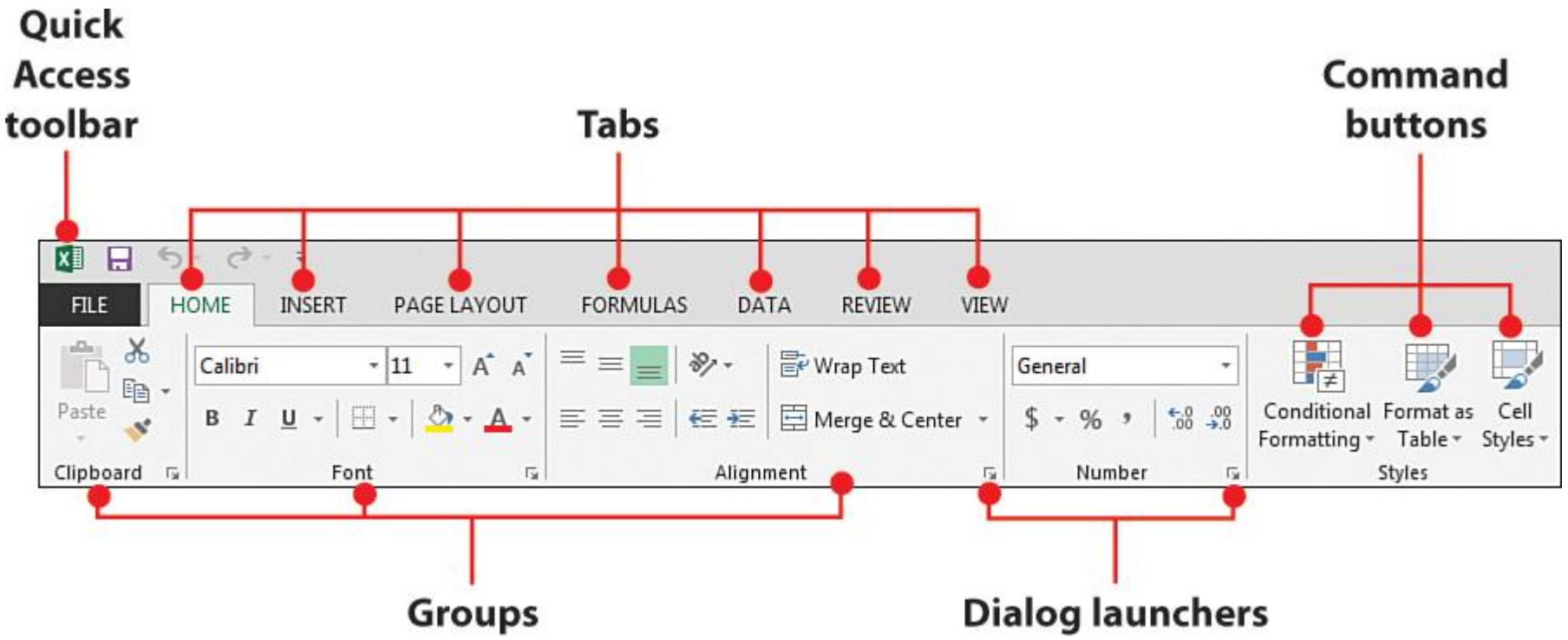
- ✓Each session will be divided up into a short topic demo & then the opportunity for you to put it into practice.
  Please don't start trying to do the exercise during the demo, you'll have plenty of time to do it afterwards
- ✓Questions – please ask questions either in Chat or out loud at the end of a topic before we do the exercise
- ✓Step by step guidelines have been emailed to you – use them if you get stuck (but try to resist!)
- ✓We welcome cameras on & lots of questions and input as it makes it feel more friendly!
- ✓Please type **Done** into chat once you have completed each Exercise

Today's data

Music Mentors work with young offenders in 3 prisons. The young people sign up to take part in group sessions where they work together with each other and with mentors to write, play and record music.

The data we are using today is fictional programme data which we have created for training purposes.

Understanding the Excel ribbon



Advantages of using tables in Excel

- ✓ **Quick Styles**
  Apply instant formatting—like banded rows, colour schemes, and styled headers—with a single click to make your data instantly easier to scan and interpret

- ✓ **Named Tables**
  Give your table a unique name to reference it easily in formulas, PivotTables, and charts. No more fiddling with cell ranges!

- ✓ **Cleaner Formulas**
  Table-aware formulas automatically reference column names not cells (e.g., =[@Session] rather than B2:B24), making your it easier to read, write, and debug

✓ **Auto Expansion**
Add a row or column to your data, and the table automatically includes it — no need to adjust ranges or update formulas.

✓ **Instant Filtering & Subtotals**
Tables come with built-in filter buttons. You can add dynamic subtotals that update automatically as filters change—perfect for quick snapshots or report slices

✓ **Calculated Columns**
Enter a formula once in a column, and Excel auto-fills it down the table—no dragging required. It even adapts if your structure changes.

✓ **Dynamic PivotTables & Queries**
When a Pivot Table or Query's source is a table, it becomes dynamic: the data range automatically adjusts as you add or remove records. Your Pivot or query stays fresh without manual updates.

Session 1: Managing Data with Tables

Exercise 1 : Creating tables

- ❑ Make the data in the All Participants tab into a table (Insert tab)
- ❑ Name the table "All_participants" (Table Design tab, Properties group)
- ❑ Format the table to make it a different style & colour (Table design tab)
- ❑ Calculate & flash fill the Change in optimism (add a simple **Optimism at end-Optimism at start** formula to the first cell of the Change column, flash fill should do the rest)
- ❑ Calculate & flash fill the Difference in hours (add a simple **Hours booked – Hours attended** formula to the first cell of the Hours missed column, flash fill should do the rest)

Remember the **=** sign to start the formula and use the **Enter** key to complete the calculation

Session 1: Managing data in tables
Exercise 2: List data validation

- Select all the cells in the Ethnicity column (CTRL+Space) & select **Data validation** (Data tab – data validation)
- Select List & click into the source field and then go to the data validation list and select the table
- Test by adding an Ethnicity that's not on the list (or has a typo) and by adding another person to the table.
- Change the error style from **Stop** to **Warning**

  You could also try adding a new option in your list of Ethnicities and updating your drop-down validation list

Session 1: Managing data in tables

Exercise 3: Conditional formatting - directional

- ❑ Select the Change in optimism column
- ❑ On the Home tab go to Conditional formatting select Icon sets and directional arrows
- ❑ Use the Filter arrow to access sort & filter – try sorting and filtering by your directional arrows

Exercise 4: Conditional formatting –duplicates

- ❑ Select the name column
- ❑ On the Home tab go to Conditional formatting select Highlight duplicates and then Duplicate values

Session 1: Managing data in tables
Exercise 5: Adding totals

- ❑ Add a total row to the table (Table design menu)
- ❑ Count the number of participants (Select count in the total row for the column Prison number)
- ❑ Sum the number of hours booked & hours attended (Select Sum in the total row for the column hours booked)
- ❑ Average the change in optimism (Select Average in the total row for the change in optimism column)

Pivot tables & charts

Enable you to **summarise, explore, and analyse large datasets quickly and interactively**—without writing formulas from scratch.

A pivot table takes raw data (like a long list of interactions or survey responses) and lets you:

- ✓ **Group** it by categories (e.g. region, month, project)
- ✓ **Summarise** it with calculations (e.g. totals, averages, counts)
- ✓ **Rearrange** it dynamically to explore different angles

It's called "pivot" because you can rotate rows and columns to see your data from different perspectives.

Session 2: Pivot tables & charts
Exercise 1 & 2: Creating a pivot table & Chart

- ❑ Create a Pivot table and name it Enjoyment (Insert / Pivot Table)
- ❑ Select fields: Prison, Prison number, Enjoyed the sessions
  (Make sure you have **Count** of Prison number in the Values area)
- ❑ Convert values to percentages (Change the Value Field Settings to show as % of Row Total)
- ❑ Now repeat – creating a Pivot Table for the Build a relationship with mentor (Name it Relationship)
- ❑ In the Relationship Pivot, create a Pivot chart (Click on Table Design and Insert Chart)
- ❑ Choose a Stacked Bar chart
- ❑ Now add the Musical experience field to the Filter area of the Pivot Table
- ❑ Explore in the Chart whether prior musical experience is likely to affect building a relationship with a mentor

Session 2: Bringing data from one sheet to another

Exercise 3: Summary sheets & Get Pivot data

- ❑ In the Summary sheet, bring in the data for Really enjoyed and Enjoyed from the Enjoyment Pivot sheet (Start the Formulae with = and move to the Enjoyment pivot to complete the calculation, then press Enter)
- ❑ Experiment copying this formulae down and amending (See Handbook for manual and automated adjustments)
- ❑ Repeat for the Built a relationship data

Session 2: Bringing data from one sheet to another

Exercise 4: Count if formula

- In the Summary sheet, Attendance column, use the Countif formula to add in data for the number of participants for the respective prisons from the All participants sheet
- Follow the format below (Check in the Handbook for further hints)

```
COUNTIF(range, criteria)
```

Session 2: Bringing data from one sheet to another

Exercise 5: Xlookup formula

- In the Summary sheet, Number of mentors column, use Xlook up to bring in data for the respective prisons from the Prison info sheet
- Follow the format below (Check in the Handbook for further hints)

```
XLOOKUP(lookup_value, lookup_array, return_array, [if_not_found], [match_mode], [search_mode])
```

Session 3: Bringing data together with Power Query

Exercise 1: Creating connection queries

- ❑ Create a query for Prison 1 : Belmarsh (Data tab – From data from Table/range)
- ❑ Close and Load to Connection (Home menu - Close & load to – connection only)
- ❑ Repeat for prisons 2 & 3

Session 3: Bringing data together with Power Query

Exercise 2: Appending queries

- ❑ Launch the Power Query Editor (Data tab – Get data – Launch Power Query Editor)
- ❑ Create an Append query (Home tab, select **Append query** as new, select all the tables, click on **Add,** rename the query to **All participants,** then **Close and Load** the query to create a new worksheet)

Session 3: Bringing data together with Power Query

Exercise 3: Adding data and refreshing queries

- ❑ Add a row to any of your 3 prison's worksheet for a new participant
- ❑ Refresh your query (Data tab – Refresh All)

Other ideas for using Power Query

- ✓Merging different data but for the same person / organisation together
- ✓Managing multi-select fields in surveys

Practice exercises

- ❑ In the **Prison 1** worksheet add conditional formatting to the **Name** column to highlight duplicates

- ❑ In the **Prison 1** worksheet, add data validation to musical experience column.

About Superhighways....

A project of Kingston Voluntary Action, we provide digital, data & tech advice, support & training to the sector, including:

- ✓ Tech support
- ✓ Current training
- ✓ Training brochure
- ✓ Websites
- ✓ Digital, data & tech strategy
- ✓ Digital inclusion
- ✓ Digital / data consultancy
- ✓ Datawise London

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Thanks for listening

superhighways

harnessing technology for community benefit

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