



Advanced Excel Exercise Sheet

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 (or fill down) 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

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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

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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

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Exercise 4: Conditional formatting–duplicates

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

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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)

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 Show Values As to be % 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 PivotTable Analyse 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 Formula with = and move to the Enjoyment pivot to complete the calculation, then press Enter)
- ❑ Experiment copying this formula 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: COUNTIF 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 XLOOKUP 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)