

Module: Information & Digital Technologies | THEG_Year1

CA#2 – Spreadsheets (30%) & Databases (20%) - Accounts for 50% of Final Grade

Submission Due –30.04.2025 – Upload to VLE_MOODLE Portal

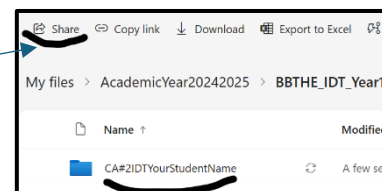
NB - Before completing CA#2, please ensure you complete the following tasks using your Student ONEDRIVE.

CA#2 | Spreadsheets

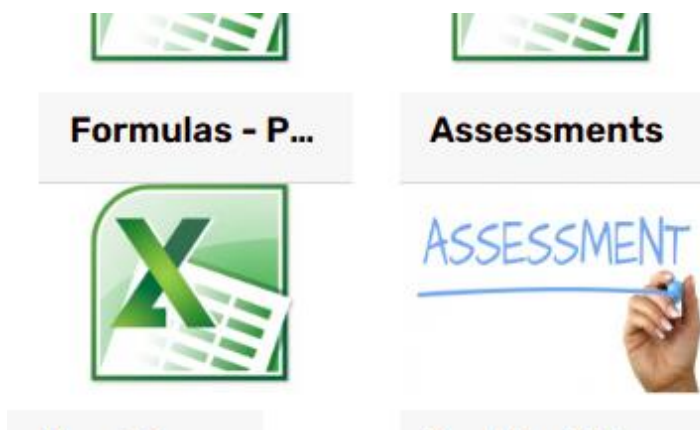
30%

PartA:

1. Once you have logged on in the Computer Lab, please access your student ONEDRIVE and create a new folder called **CA2IDTYourStudentName**.
2. **NB** - All sub folders | files you create, download and work on **must** be saved / stored / uploaded to this new folder. **NB** – Please ensure you share the folder and its contents with me | michelle.glynn@atu.ie (use the Share option on ONEDRIVE).



NB - You will also be required to upload all completed files to the relevant submission portals on VLE_Moodle for the **Information & Digital Technologies** module in the Assessments Detail Block - see screenshot below:



CA#2PartB – Family Budget – Page 2

CA#2PartC – Tables – Page 4

CA#2PartB – Family Finance

Data File Required for PartB – CA2.xlsx and texture.jpg

Eamonn and Bridget want to purchase a new home. They are considering two houses with different mortgages. They want you to create a family budget worksheet for them. They want the budget worksheet you create to display the impact of monthly mortgage payments on the couple's cash flow. The couple have already designed the workbook and entered estimates of their take-home pay and expenses for the upcoming year. They want you to set up the formulas.

You are required to complete the following using the spreadsheet CA2.xlsx

1. Open the **CA2.xlsx** workbook located on VLE_MOODLE in the *Assessments* Block and then save the workbook as **YourStudentNameCA2.xlsx**.
2. In the Documentation sheet, enter your name in cell B4 and the date in cell B5 (using any date function from the Function Library). Format the date in cell B5 with the Long Date cell format and left-align the date in the cell.
3. Set the background of the Documentation sheet to the **texture.jpg** image file (also located in the *Assessment Block*) and then change the fill color of the range B4:B6 to white.
4. In the Family Budget worksheet in the range C17:N17, use Autofill to enter month names January through December.
5. In the range C20:N20, calculate the family's take-home pay. In the range C26:N26, calculate the monthly expenses. In the range C27:N27, calculate the monthly net cash flow.
6. In cell C6, enter a formula to calculate the sum of Eamonn's monthly salary for the entire year. In cell D6, calculate Eamonn's average take-home pay each month. In cell E6, calculate Eamonn's maximum monthly take-home pay. In cell F6, calculate Eamonn's minimum monthly take-home pay.
7. Select the range C6:F6, and then use Autofill to copy the formula in the C6:F6 range into C7:F15 range. Use the Autofill Options button to copy only the formulas into the selected range and not both the formulas and formats.
8. In the range J5:J12, enter the following loan and loan conditions of the first mortgage:
 - a. Loan Amt is 315,000.
 - b. Annual interest rate is 6.7%.
 - c. Interest rate is compounded 12 times a year.
 - d. Mortgage will last for 30 years.
9. In cell J11, enter the PMT function to calculate the monthly payment required to repay this loan.
10. In cell J11, enter a minus symbol between = and PMT to make the value positive.
11. In the range N5:N12, enter the following loan and loan conditions of the second mortgage:
 - a. Loan Amt is 218,000.
 - b. Annual interest rate is 6.7%.
 - c. Interest rate is compounded 12 times a year.
 - d. Mortgage will last for 20 years.
12. In cell N11, enter the PMT function to calculate the monthly payment required to repay this loan, and then make the PMT value positive.
13. Eamonn and Bridget would like to view their monthly cash flow under both mortgage possibilities. The mortgages being applied to the budget will be determined by whether 1 or 2 is entered into cell C3. To switch from one mortgage to another, do the following:
 - a. In cell C25, enter an IF function that tests whether cell C3 equals 1. If it does, display the value from cell J11; otherwise display the value from cell N11. (NB - Remember the

- different type of cell references).
- b. Use Autofill to copy the formula in cell C25 into the range D25:N25.
 - c. Verify that the values in the range C25:N25 match the monthly payment for the first mortgage condition.
14. In cell C3, edit the value from 1 to 2. Verify that the monthly payment for the second mortgage appears in the range C25:N25.
 15. Change the theme of the workbook to Wisp.
 16. Change the tab color of the Documentation sheet tab to the Brown, Accent 3 theme color. Change the tab color of the Product Sales sheet tab to the Olive Green, Accent 5 theme color. . Change the tab color of the Family Budget sheet tab to the Gold, Accent 4 theme color.
 17. In the Expenses range of the spreadsheet, add coloured data bars (conditional formatting) to represent the values in the cells.
 18. Create a chart of your choice (Chart that displays multiple series) and insert the chart as a new sheet, rename as BudgetCHART (insert after the Family Budget worksheet).
 - a. Place the legend on the right side of the chart area.
 - b. Rename the Chart Title appropriately.
 - c. Add primary gridlines to the chart.
 - d. Change Chart Style to Style 9.
 - e. Change the interval between the major tick marks and between labels on the category axis if necessary to ensure the chart is easy to read / interpret and no labels overlap.
 19. Save and close the workbook.

CA#2PartC –Tables | Data File Required – YourStudentNameCA2.xlsx (from PartB above)

You are required to complete the following:

1. In the **JanuaryProcedures** worksheet, using the data in the range A1:G64, create a table and format the table with the table style Blue-Gray, Table Style Medium 7. Widen the columns as necessary to fully display the field names.
2. Remove the banding of the table rows.
3. Add the record shown below to the end of the table:

PROCEDURE CODE	PROCEDURE	DATE	AMOUNT BILLED	PAYMENT	PROVIDER	PATIENT ID
601Q	THERAP PROC 2	1/15/2021	€65	€30	Rubin	1189

4. Delete the record in row 8 for procedure code 251D.
5. Remove any duplicate records by checking for matching procedure codes.
6. Add a new column to the table by entering a field named Balance in cell H1. Calculate the balance for each procedure using structured references to subtract the payment from the amount billed. Format the balance amounts in column H in Accounting format with the € symbol and no decimal places.
7. Sort the table by Balance in ascending order.
8. Use a custom sort to sort the table first by the procedure in descending order, and then within each procedure by the provider in ascending order.
9. Filter the table to show only Martin's procedures, then copy the filtered records to the **MartinProcedures** worksheet. Do not copy the field names. Insert a chart of your choice to this worksheet showing only the filtered records. Clear the filter from the table on the January Procedures worksheet.
10. Filter the table to show only records where the amount billed is greater than or equal to €80 and less than or equal to €200. Copy the filtered records to the **>= 80 <=200** worksheet. Do not copy the field names. Remove the filter from the table on the January Procedures worksheet.
11. On the **JanuaryProcedures** worksheet, enter 467B in cell J2. Enter a VLOOKUP function in cell J4 to retrieve the procedure based on the procedure code entered in cell J2. Make sure you have an exact match with the procedure code. Test the function by changing the procedure code in cell J2 to 331E.
12. Use the database function DSUM in cell J10 to total the amount billed for Rubin using the criteria in J7:J8. Format cell J10 in the Accounting format with the € symbol and no decimal places.
13. Using the criteria in J7:J8, enter a database function in cell J12 to count the number of procedures performed by Rubin.
14. Use the Data Validation dialog box to add an in-cell dropdown list to the cells in the provider column that restricts entries to Axel, Martin, and Rubin. Check the list by clicking any cell in column F.
15. Add print titles to repeat the first row at the top of each printed page, enter your name in the centre section of the worksheet footer, enter January Procedures in the centre section of the header, then activate cell A1.
16. Edit the headers/ footers on all worksheets in the workbook as per the following:
 - a. Header: enter your student number in the centre section; the sheet name (using the sheet name button) in the right section
 - b. Footer: Enter the following - Page &[Page] of &[Pages] in the centre section, and the current date in the right section
17. In the Documentation worksheet, create hyperlinks entries in cells A8, A9, A10 and A11 respectively, that point to cell A1 of the other worksheets in the workbook. For each hyperlink add View WorksheetTabName as the ScreenTip message. Save the workbook, preview it.
18. **NB - Upload your completed file to the assigned VLE/MOODLE portal.**
19. **NB - Share a copy of your completed file with me michelle.glynn@atu.ie**