

Instructions

- Save your file under “ID_yourName_Assignment#2”
- **Deadline: Thursday 6/5/2021 at 11:59 p.m.**
- The assignment will not be accepted if the instructions are not followed (**No Exceptions**)

Format and fill your sheet as required:

Exercise # 1:

Given below is a voter's registration file for the elections. One cell reference contains the voter's birth date. However, rather than showing a voter was 28, we want to define them as “Young” and so on. Use VLOOKUP to populate the “Segment” column based on the voters' approximate ages.

| First | Last | DOB | Age | Segment | | Age | Label |
|----------|------------|------------|-----|---------|--|-----|--------|
| Sophia | Collins | 9/23/1978 | 42 | | | 18 | New |
| Evelyn | Bennett | 2/14/1967 | 54 | | | 21 | Young |
| Geneva | Allen | 6/6/1990 | 30 | | | 39 | Mature |
| Silvia | Walsh | 5/30/1983 | 37 | | | 60 | Senior |
| Katrina | Rodriquez | 12/23/1998 | 22 | | | | |
| Sandy | Day | 7/24/1973 | 47 | | | | |
| Dallas | Roberts | 6/12/1952 | 68 | | | | |
| Jamie | Harrington | 8/22/1958 | 62 | | | | |
| Jermaine | Shelton | 10/23/1977 | 43 | | | | |
| Freddie | Baker | 5/12/1968 | 52 | | | | |

Exercise # 2:

Company ABC contributes to each eligible employee's retirement plan at the rate of 4% of the employee's annual salary. However, to be eligible for this benefit, an employee must have full-time status with two or more years of employment.

There are three retirement contribution possibilities to account for:

- An employee works full time AND has been employed two or more years. -> The retirement benefit applies.
- An employee works full time but has NOT been employed two or more years. ->The retirement benefit does not apply.
- An employee does NOT work full time. -> The retirement benefit does not apply.

You are required to write the formula that calculate the Retirement Contribution for all the employees.

Moreover, the company also supplies two health plan options:

1. Up to \$10K of annual coverage for employees who choose the family plan.
2. Up to \$8K of annual coverage for employees who choose the individual plan.

Write the formula to calculate the Health Plan Cost for all the employees.

| Name | Employment Satus | Health Plan | Salary | Hire Date | # Years Employed | Retirement Contribution | Health Plan Cost |
|-------------|------------------|-------------|------------|-----------|------------------|-------------------------|------------------|
| Alice | Part Time | Family | \$ 45,000 | 2016 | 5 | | |
| Harry | Full Time | Family | \$ 120,000 | 2008 | 13 | | |
| Ben | Full Time | Individual | \$ 145,000 | 2019 | 2 | | |
| Jerry | Full Time | Individual | \$ 100,000 | 2019 | 2 | | |
| Karen | Full Time | Individual | \$ 115,000 | 2016 | 5 | | |
| Christopher | Part Time | Family | \$ 55,000 | 2014 | 7 | | |
| Jane | Full Time | Other Plan | \$ 95,000 | 2017 | 4 | | |
| John | Part Time | Family | \$ 15,000 | 2020 | 1 | | |
| Mark | Full Time | Family | \$ 124,000 | 2019 | 2 | | |

Exercise # 3:

Open a new sheet. Name it “Matrices”.

$$P = \begin{bmatrix} 1 & 0.5 \\ 1 & -0.5 \end{bmatrix} \quad Q = \begin{bmatrix} 2 & -1 \\ 1 & 4 \end{bmatrix} \quad T = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$$

Find:

- a. $R = P + Q$
- b. Inverse of Q and T
- c. Determinant of P
- d. Transpose of R (**using matrices functions**)
- e. $L = P * T$

Exercise # 4:

Open a new sheet. Name it “Frequency”. The following data represents the records of high temperatures in degrees Fahrenheit (°F) for each of a 50 states:

| | | | | |
|-----|-----|-----|-----|-----|
| 112 | 110 | 107 | 110 | 111 |
| 100 | 116 | 112 | 118 | 120 |
| 127 | 108 | 114 | 117 | 113 |
| 120 | 110 | 115 | 116 | 120 |
| 134 | 121 | 118 | 118 | 117 |
| 118 | 113 | 117 | 122 | 105 |
| 105 | 120 | 118 | 114 | 110 |
| 110 | 119 | 122 | 114 | 118 |
| 109 | 111 | 106 | 105 | 112 |
| 112 | 104 | 114 | 109 | 114 |

- a. Construct a grouped frequency distribution for the data using the 7 classes: (105 – 110 - ... - 135) using the frequency function.
- b. Construct a histogram using the Histogram option in “Data Analysis”.
- c. For the resulted chart of histogram, let the gap width be 0, the color of the columns green, the border of the column black and the scale of the y-axis (frequency) 0-3-6-...
- d. Remove the legend of the chart.