

Sample Problem – Approx. 25 minutes

A company collects the quarterly production results (in 1000 tons) for each of its plants as shown in Table 1.

Table 1. Production of Coal by Plant per Quarter of the year (numbers in 1000 tons)

Plant	Quarter 1	Quarter 2	Quarter 3	Quarter 4
1	4	4	2	3
2	2	2	6	1
3	3	4	5	2
4	5	3	4	2

You wish to determine the production related information from the plants in your company.

- [2 pts]** Create a section header in your script file called Part I and add in all necessary housekeeping commands.
- [3 pts]** Create a matrix, called **Prod**, to represent the data from Table 1 (white portion of the table **ONLY**). NOTE: these values will be changed when testing your code including the number of plants (rows).
- [2 pts]** Ask the user to input the name of the company and store the variable as **Company**.
- [3 pts]** Determine the number of plants in the company and store in a variable named **NumPlant**.
- [7 pts]** Determine the plant with the worst quarter (identify which plant and which quarter it occurred and how much was produced). You will need this information for the formatted output statements in #9.
- [3 pts]** Create an array, named **PlantYrProd**, which stores the total production of each plant for the year.
- [3 pts]** Create an array, named **ProdQ**, which stores the total production of the company for each quarter.
- [3 pts]** Determine the total production, **ProdTot**, of the company for the year.
- [6 pts]** Produce the following formatted output to the Command Window. Make sure to add a blank line after the output.

```
Company produced ###x10^3 tons of coal for the year, using ### plants.  
Plant ### had the worst quarter in the company producing ###x10^3 tons of coal in  
Quarter ###.
```
- [6 pts]** Create a combined matrix (white portion of the table **ONLY**) named **ProdSummary** that contains the total production of each plant for the year on the last row and the annual totals in the last column (see example table below).

Plant	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
1	4	4	2	3	13
2	2	2	6	1	11
3	3	4	5	2	14
4	5	3	4	2	14
Total	14	13	17	8	52

- [2 pts]** Export the **ProdSummary** to an .xls or .csv file. The file should be named **Exam2Part1**.