Try this!

The table shows the hourly wages, hours worked and output (number of widgets produced) in one week for five widgets makers.

	W1	W2	W3	W4	W5
Hourly Wage ($)	5	5.50	6.50	6	6.25
Hours Worked	40	43	37	50	45
Output (widgets)	1000	1100	1000	1200	1100

Use MATLAB to answer these questions:

- How much did each worker earn in a week?
- What is the total salary amount paid out?
- How many widgets were made?
- How many widgets does each worker produce in one hour?
- Which worker is the most efficient?

Solution:

Command Window

New to MATLAB? See resources for Getting Started.

```
>> HourlyWages=[5 5.5 6.5 6 6.25];
>> HoursWorked=[40 43 37 50 45];
>> Output=[1000 1100 1000 1200 1100];
>> WorkerEarnedInWeek=HourlyWages.*HoursWorked

WorkerEarnedInWeek =

  200.0000  236.5000  240.5000  300.0000  281.2500

>> TotalSalaryPaid=sum(WorkerEarnedInWeek)

TotalSalaryPaid =

   1.2583e+03

>> NumWidgets=sum(Output)

NumWidgets =

        5400

>> WidPerHour=Output./HoursWorked

WidPerHour =

   25.0000   25.5814   27.0270   24.0000   24.4444

>> [MostWid MostEffWorker]=max(WidPerHour)

MostWid =

   27.0270


MostEffWorker =

     3
```

Your turn!

1. Given the data and results from the problem we worked on, create the variable WidgetsCells. The following information should be stored in each cell:

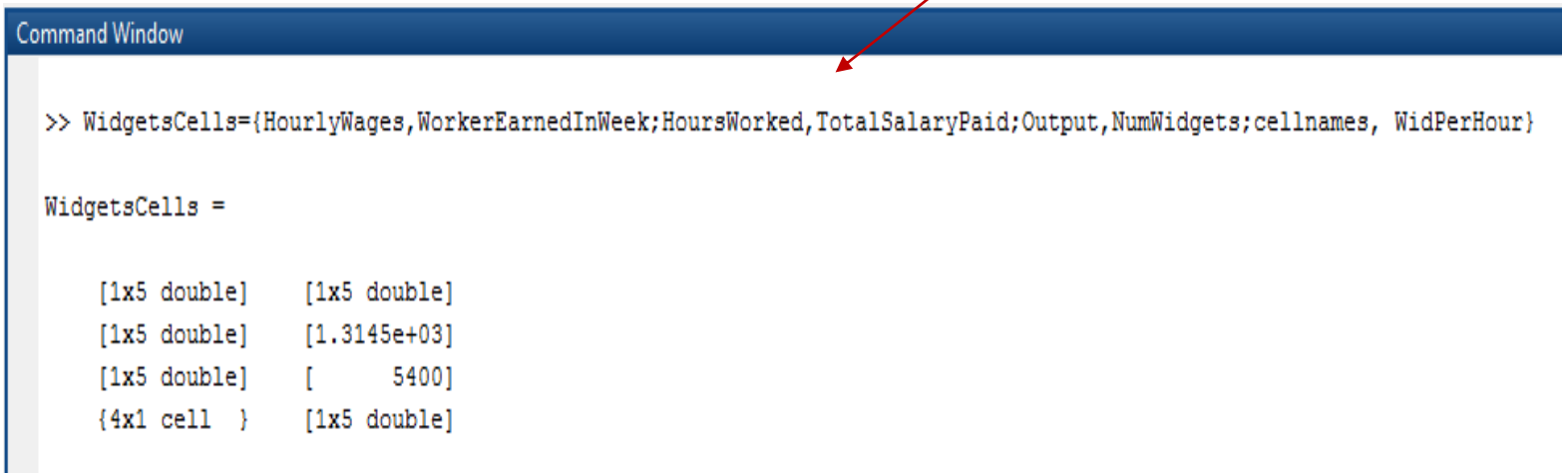
Array with hourly wages	Array with amount each worker earned in a week
Array with hours worked	Total salary paid that week
Array with number of widgets (output)	Total number of widgets produced that week
Worker names (5 workers – names of your choice)	Array with widgets per hour

2. Extract data from the cells to display the name of worker 3 and how many widgets worker 3 produced, as follows:

"The name of worker 3 is *name* and this worker produced *number* widgets"

Solution

Assuming all these variables have been previously created!




```
>> ['The name of worker 3 is ', (WidgetsCells{4,1} (3)), 'and this worker produced ',(WidgetsCells{3,1} (3)), 'widgets']

ans =

    'The name of work...'    'Tom'    'and this worker ...'    [1000]    'widgets'
```

Try this!

Create the following file and save it as LoadFile.txt:

5	5.5	6.5	6	6.25
40	43	37	50	45
1000	1100	1000	1200	1100

Each column represents one worker (W1-W5). The first row represents the hourly wage, the second row represents the hours worked, and the third row represents the output (number of widgets) per week.

- Load the file into Matlab
- Display the data
- Create and display an array called HourlyWage, which should have the hourly wage
- Create and display an array called HoursWorked, which should have the hours worked
- Create and display an array called Widgets, which should have the number of widgets produced

Use MATLAB to answer these questions:

- If each widget is sold for $5, how much revenue did each worker bring in? → Variable called RevenuePerWorker
- What is the total revenue for that week? → Variable called TotalRevenue

Solution:

```
>> load LoadFile.txt
>> LoadFile
    LoadFile =
       1.0e+03 *
        0.0050    0.0055    0.0065    0.0060    0.0063
        0.0400    0.0430    0.0370    0.0500    0.0450
        1.0000    1.1000    1.0000    1.2000    1.1000
>> HourlyWage=LoadFile(1,:)
    HourlyWage =
        5.0000    5.5000    6.5000    6.0000    6.2500
>> HoursWorked=LoadFile(2,:)
    HoursWorked =
        40    43    37    50    45
>> Widgets=LoadFile(3,:)
    Widgets =
          1000       1100       1000       1200       1100
>> RevenuePerWorker=5*Widgets
    RevenuePerWorker =
          5000       5500       5000       6000       5500
>> TotalRevenue=sum(RevenuePerWorker)
    TotalRevenue =
          27000
```