## Nested Loops

The purpose of this exercise is to practice some numerical logic that needs to occur in a nested loop. This exercise contains three parts. Feel free to implement all three in the same source file.

Part 1: Write a nested loop (i.e. 2 loops, one inside the other) that has this output:

| 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
|  | 35 | 35 | 35 | 35 | 35 | 35 |
|  |  | 30 | 30 | 30 | 30 | 30 |
|  |  |  | 25 | 25 | 25 | 25 |
|  |  |  |  | 20 | 20 | 20 |
|  |  |  |  | 15 | 15 |  |
|  |  |  |  |  |  | 10 |

Part 2: Write a nested loop that has this output:

| 40 |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 35 | 40 |  |  |  |  |  |
| 30 | 35 | 40 |  |  |  |  |
| 25 | 30 | 35 | 40 |  |  |  |
| 20 | 25 | 30 | 35 | 40 |  |  |
| 15 | 20 | 25 | 30 | 35 | 40 |  |
| 10 | 15 | 20 | 25 | 30 | 35 | 40 |

Part 3: This will be a generalization of part 2. Write a triply nested loop (a nest of 3 loops) that has this output:

20
1520
$10 \quad 15 \quad 20$

25
2025
$15 \quad 20 \quad 25$
$\begin{array}{lll}10 & 15 & 20 \\ 25\end{array}$

30
2530
$20 \quad 2530$
$\begin{array}{llll}15 & 20 & 25 & 30\end{array}$
$\begin{array}{lllll}10 & 15 & 20 & 25 & 30\end{array}$

35
3035
$\begin{array}{lll}25 & 30 & 35\end{array}$
$\begin{array}{llll}20 & 25 & 30 & 35\end{array}$
$\begin{array}{lllll}15 & 20 & 25 & 30 & 35\end{array}$
$\begin{array}{llllll}10 & 15 & 20 & 25 & 30 & 35\end{array}$

40
3540
$\begin{array}{lll}30 & 35 & 40\end{array}$
$\begin{array}{llll}25 & 30 & 35 & 40\end{array}$
$\begin{array}{lllll}20 & 25 & 30 & 35 & 40\end{array}$
$\begin{array}{llllll}15 & 20 & 25 & 30 & 35 & 40\end{array}$
$\begin{array}{lllllll}10 & 15 & 20 & 25 & 30 & 35 & 40\end{array}$

