Assignment One

In this assignment, you are required to write a program in any of these languages (Java, C++, python, or MATLAB) which implements two of the bin-packing algorithms. Each student will be assigned two different bin-packing algorithms to implement per Table 1 below:

Table 1: Required algorithm of each student

Aseel	Abdel-Karim	Maysaa'	Nojood	Taymaa'
WFI	BF	WFD	NFD	NFI
FF	WF	FFD	BFD	FFI

Your program must accept three inputs:

1. N is a vector (array) of task utilizations where each element is between 0 and 1.
2. M is the number of bins (e.g. cores) that are available.
3. L is either the number 1 or 2 which specifies which algorithm to use.

Your function must display (e.g. printf, cout, disp … etc) on each line the number of the core, and the task utilizations assigned to fit inside, as well as the total utilization. Your output must be formatted to look similar to this:

```
Core 00:    0.12      0.45      0.1        Utilization = 62%
Core 01:    0.8       0.05                 Utilization = 85%
Core 02:                                   Utilization = 0%
Core 02:                                   Utilization = 0%
```

If the algorithm fails to assign the tasks on the specified number of cores, it must output:

```
The algorithm cannot provide a mapping that fits on the available
cores.
```

Hints:

- Your code will be a simple function with for loops, and array processing.
- MATLAB could be the easiest language to use as you can instantly create vectors/arrays

  Reading Material: https://drsuyyagh.files.wordpress.com/2020/04/bin-packing-algorithms.pdf

Assignment deadline: Saturday 11th April 2020 at midnight