Practical 5 (due 2022-03-25 @ 09:00)

This practical will focus on the use of vectors and developer created libraries and namespaces.

Create a menu-driven, function-based system, using a developer created library which performs the following operations.
The program operates on four vectors: `vecData`, `vecSmall`, `vecLarge`, `vecSame` and `vecSum`

- Displays the contents of each of the vectors to the screen
- Empties the contents in each of the vectors
- Fills `vecData` with a user-provided set of random numbers in a user-provided range.
- Prompts the user for a number and fills `vecSmall` with those values in `vecData` which were smaller than the number, `vecLarge` with those values larger than the number and `vecSame` with those values equal to the number.
- A function which when given the `vecData` vector returns a `vecSum` containing the sums of the digits in those numbers.
  For example, if the following data is in `vecData`:
    o   vector: 5 12 78 1001 9 0 5 300 100 512 100
  The result will be*:
      a)   5 3 15 2 9 0 5 3 1 8 1
  *i.e. 5 is a single digit, 1 + 2 = 3, 7 + 8 = 15, etc.
- Your design only needs to cover the generation of `vecSum`.

For this program, you must use user-defined libraries with functions defined and declared in the VectorSpace namespace.

Please note: Submissions will be checked for originality. If you use someone else's code or code is taken from the Internet, then your prac will come under scrutiny for a potential copy, which may result in zero marks being awarded. Programs that do not compile will be capped at 40%

Mark sheet	
Display vector contents	15
Empty vectors	10
Function for generating a random value in a range	15
Fill vector with random values in a given range	15
Splitting the data between vecSmall, vecLarge, and vecSame	15
Calculating vecSum	20
Design for one of the functions	10
Total	/100