Department of Computer Science and Software Engineering
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HW 5 – More Practice with Nested For Loops!

Aim

This lab aims to reinforce your use of For loops to make you think about problem solving.

Tips:

1. This may be a difficult problem. You can ask about this in the labs, and also ask the TAs at the support sessions.

2. Try to think about the design and the logic of this program before you code it. It may help to think about it on paper, and what you need to draw.

3. Build this program slowly. Get each step working one at a time.

Problem Solving – Drawing a Tree

Given an integer passed into the method, we want to draw a suitable shape. So if we input "5", then we should draw the shape below. Think about the steps involved in drawing this

```
    1
   212
  32123
 4321234
543212345
```

- The full program will use 1 class, and will draw the tree, depending on a number passed into the method

- Working either yourself or with a classmate, work out:
  - What the main steps are?
  - How many and what loops do you need?

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Drawing a Tree - Hints

- Create a new class with a main method, and then Design and implement a method that receives an integer to display this, using nested for loops

- Hints – consider how you used multiple For loops last week
    - Think about the difference between print() and println()
    - Do not try to implement it all at once, try small steps

- When it is working, try using different arguments in the method call

Problem Solving – Number Input – EXTRA

You should have a method stub to receive an integer from a method. Design and implement a method that will check if a number is between 0 and 9, and will pass it into the tree drawing method.

- This will allow you to specify the size of tree by using a scanner input.

- Hint – think about where you did something similar in previous labs.