#### CD/CN4001 LAB SHEET -TOPIC 5 (PROGRAMMING WITH LOOPS)

### Before your lab session, make sure you have:

- watched the WEEK 5 lecture videos on the CD/CN4001 Moodle Site by clicking here
- logged on to the live lecture Q&A on Monday 10-11am via the CD4001/CN4001
  Teams site by clicking here.
- When joining the Q&A on Teams, please make sure you click the **Tap-In** button at the top of the **General channel** at 10am (link here):



Then check your timetable to find out the day/time/location of your lab session.

If you have permission from your course leader to study remotely, follow these instructions to access your remote lab (Tuesday 4-6pm):

- Go to the ON-LINE LAB (Tue 4-6) channel on your CN4001/CD4001 Software Development Microsoft Teams site by clicking <u>here</u>.
- 2. Wait for your tutor to start the lab session. To join the session, click on the "**Join**" button that will appear when your tutor starts the session.

## **JDoodle**

To open the web-based Java IDE called **JDoodle** click <u>here</u>

# ASSESSED TASK: 4 marks

For this task we will write a program that displays a times table on the screen.

- a) Delete the existing code in the main method, move the curly brackets so that they align and rename the class **TimesTableApp**.
- b) Use a **for** loop to display the following message **12** times:

x 6 =

The program should end with an "END OF PROGRAM" message.

c) Modify the display command within the loop to now display the following:

 $1 \times 6 =$ 

 $2 \times 6 =$ 

 $3 \times 6 =$ 

and so on.

d) Modify this code so that the result is now also displayed:

 $1 \times 6 = 6$   $2 \times 6 = 12$   $3 \times 6 = 18$   $4 \times 6 = 24$   $5 \times 6 = 30$   $6 \times 6 = 36$   $7 \times 6 = 42$   $8 \times 6 = 48$   $9 \times 6 = 54$   $10 \times 6 = 60$   $11 \times 6 = 66$   $12 \times 6 = 72$ 

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- e) Adapt the program further so that instead of a "6 times table", the user chooses which times table is to be displayed.
- f) Modify the code by making use of a **while** loop to ensure that the user enters a number that is never more than 100 or less than 2. If an invalid number is entered an error message should be displayed and the user is asked to enter another number.
- g) Add some Javadoc comments into this program
- i) Download this file from JDoodle and then upload the **TimesTableApp.java** file to **Moodle** via you're the appropriate **submission link**