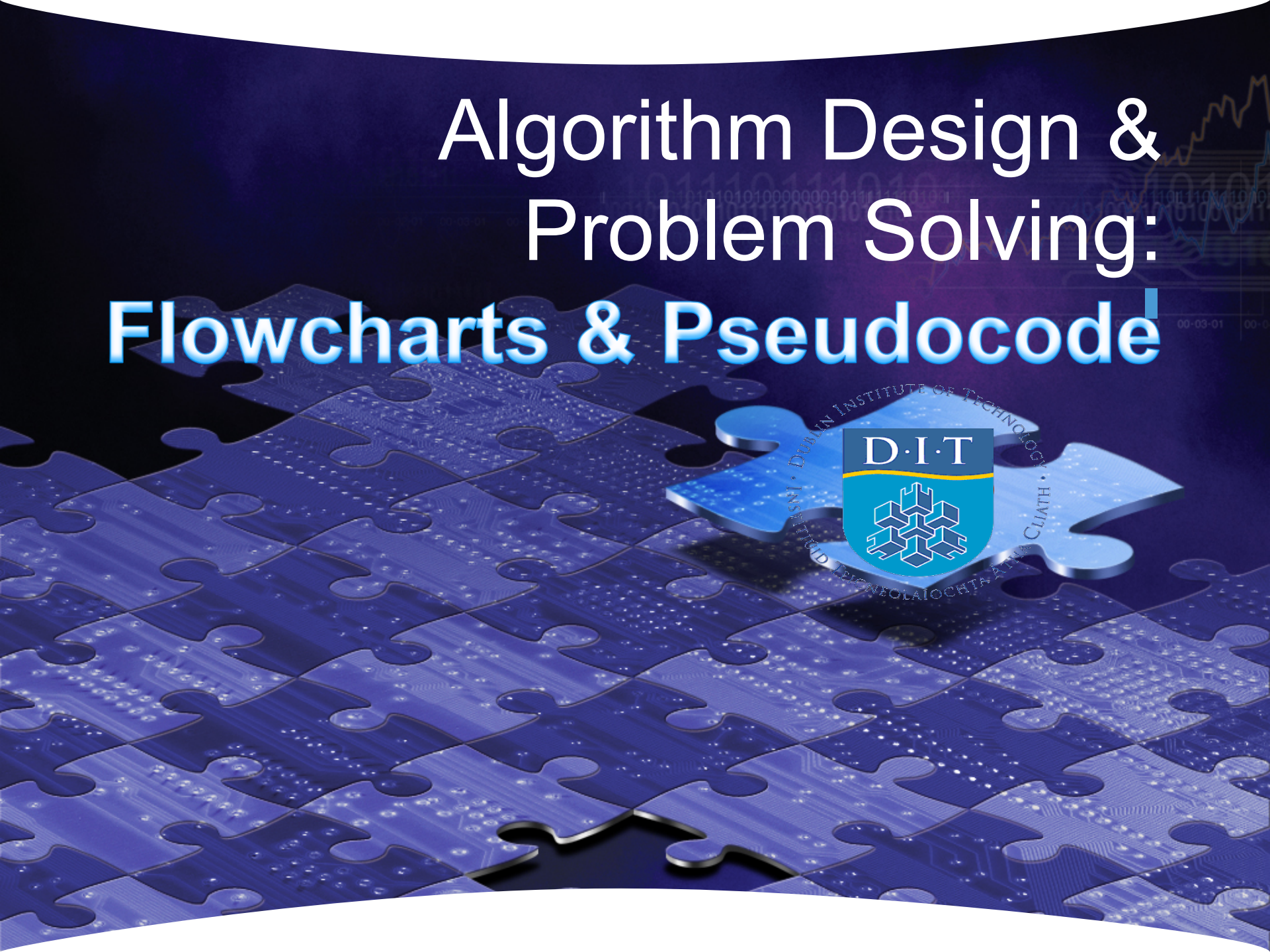
Algorithm Design & Problem Solving:

Flowcharts & Pseudocode



Contents

1. Flowchart revision
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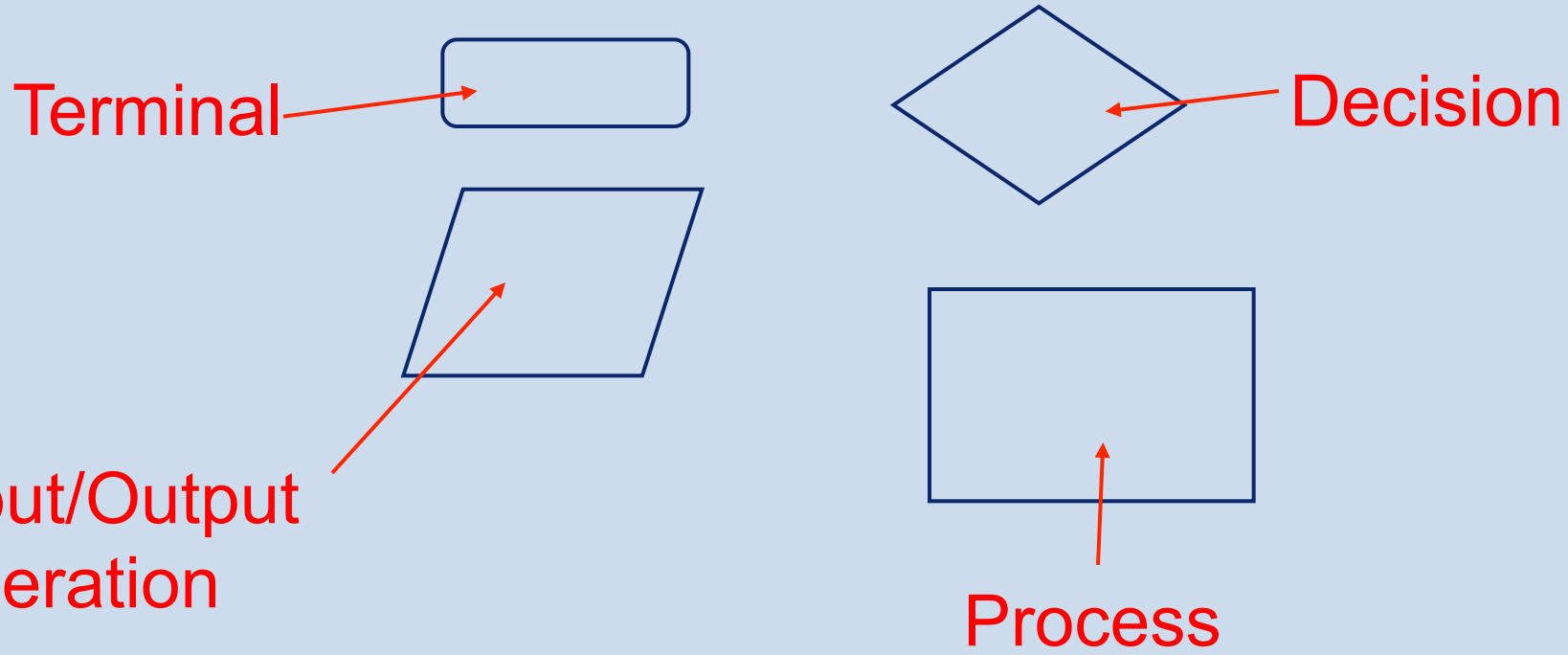
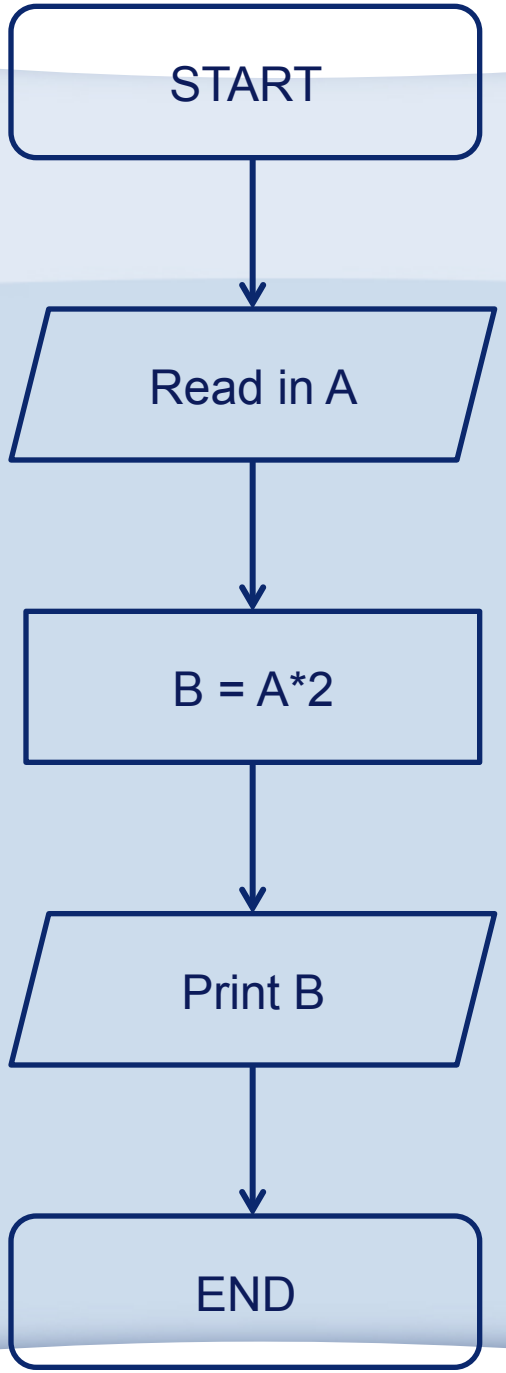
What is a flowchart?

- A **flowchart** is a graphical diagram which can be used to represent an algorithm

Symbols





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What is pseudocode?

- **Pseudocode** is a readable description of what an algorithm should do, which can be implemented in any language

Structured English and Pseudocode

Structured English

PROGRAM PrintNumber:

Read in a number and print it out.

END.

Pseudocode

PROGRAM PrintNumber:

Read A

Print A

END.

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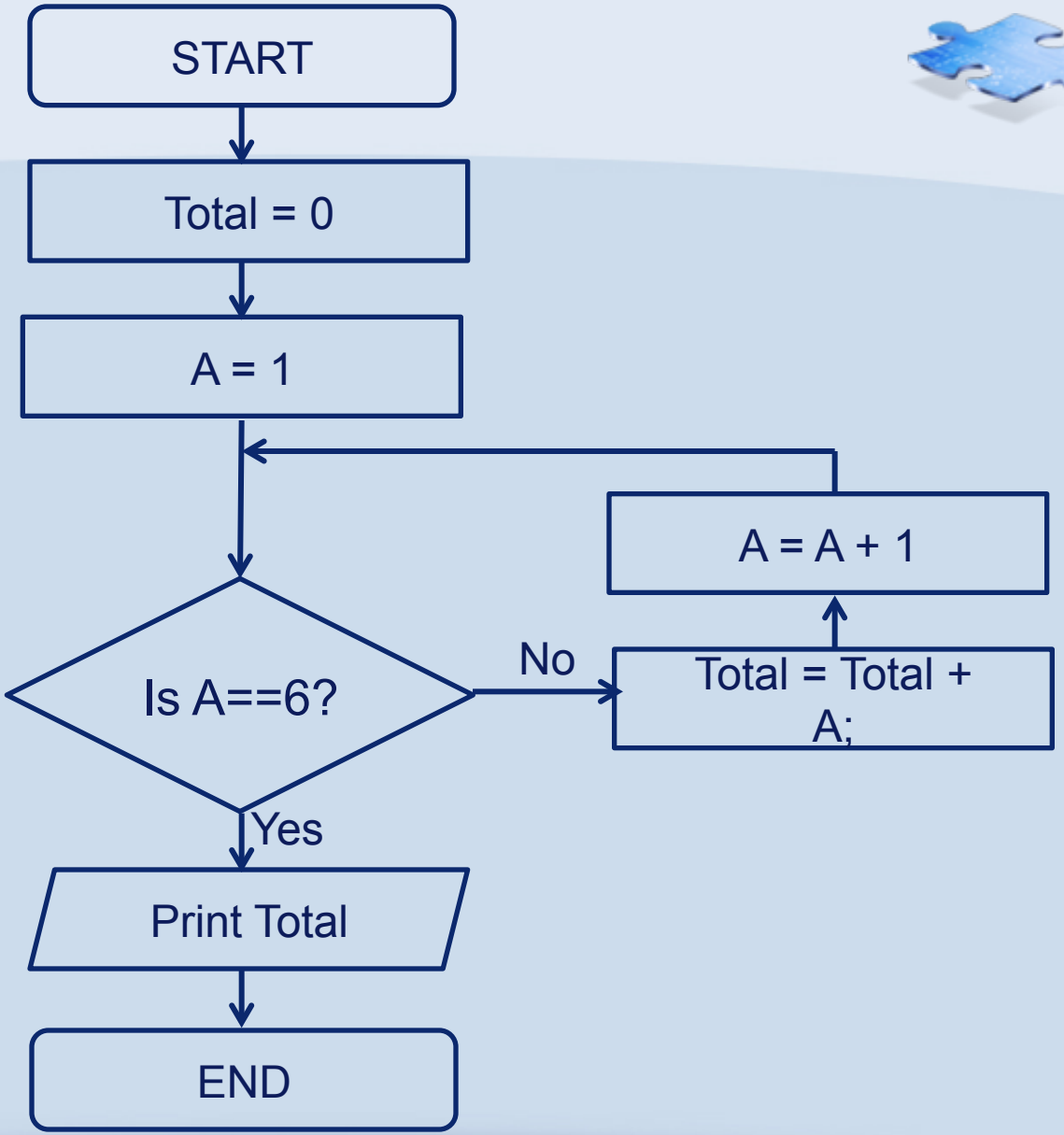
An exercise ….

- Write the following algorithm in both pseudo code and a flowchart:
  - Print the sum of the following numbers -1…5



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Structured English and Pseudocode

Structured English

PROGRAM PrintSum1to5:

Keep adding the numbers from 1 to 5.

END.

Pseudocode

```
PROGRAM PrintSum1to5:
    Total = 0
    A = 1
    WHILE (A NOT EQUAL TO 6) DO
        Total = Total + A
        A = A + 1
    ENDWHILE
    Print Total
END.
```

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More exercises ….

- Alter the previous algorithm so that it calculates the sum of the numbers 1 to 100 but include only multiples of three or five in the sum e.g., 3, 5, 6, 9, 10.

- Given a list of positive numbers return the largest number in the list.

A group exercise ….

- In groups of 4, take a case study, draw a flowchart, and matching pseudocode
- Assign yourself roles (as stated on the handout)
- Take a photo of flowchart & pseudocode and upload to Twitter (one per group)

Thank You !

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