

Tutorial Sheet

Pre-Course Assessment

Duration: 1 h 30

Link, fill in, draw and solve. Nothing here needs to be revised beforehand.

Exercise 1 — Link and match

1.1 The linking game

Draw a line from each part on the left to what it does on the right. **One part on the left matches two things on the right** — find it.

keyboard •	• shows the results to you
processor •	• keeps your files when the power is off
screen •	• lets you give information to the machine
RAM •	• does the calculations
hard disk •	• holds the data of a running program
	• forgets everything when you switch off

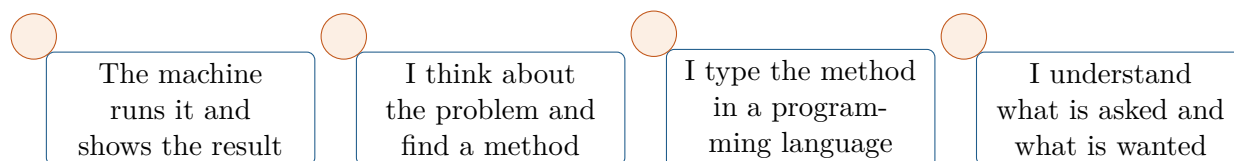
1.2 True or false

Tick one box per line. If you tick False, write the correct word.

	True	False	Correction
A computer stores everything using the ten digits 0 to 9.	☐	☐	
A program must be written before the machine can run it.	☐	☐	
If you switch the machine off, what is on the hard disk is lost.	☐	☐	
The same task can be done by two different correct methods.	☐	☐	

1.3 Put the steps in order

Here are the four things that happen between an idea and a result on the screen. Number them **1** to **4** in the right order.

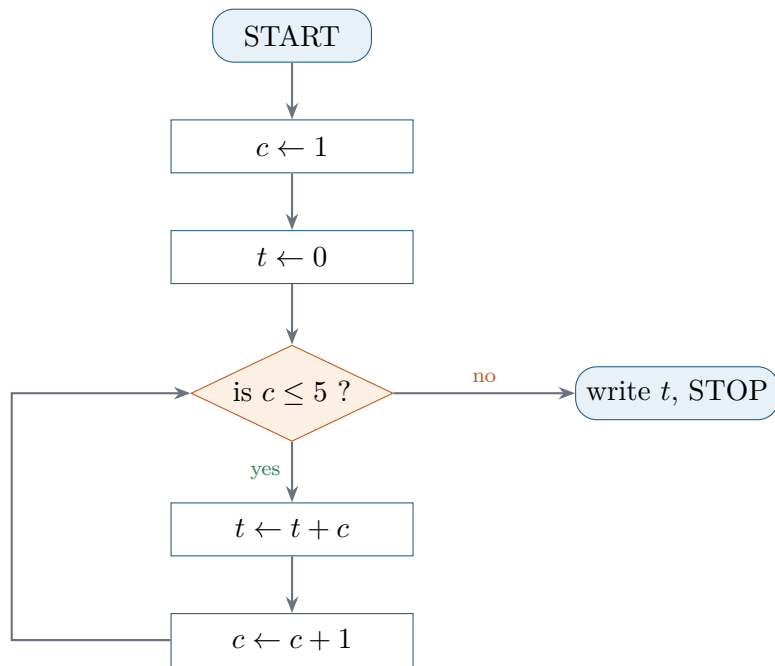


Which of the four is done by **the machine** and not by you?

Exercise 2 — Follow, fill in, solve

2.1 Follow the arrows

Start at **START** and do exactly what each box says. Fill in one line of the table each time you pass through the diamond.



Passage n°	c before the test	$c \leq 5$?	t after the two boxes
1	1	yes	1
2			
3			
4			
5			
6			

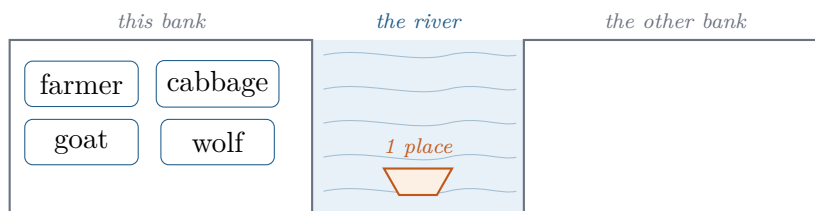
- What number is written at the end? _____
- In one sentence, what does this method compute?

- Someone replaces $c \leq 5$ by $c \leq 10$. Without redoing the whole table, what is written?

- Someone deletes the box $c \leftarrow c + 1$. What happens?

2.2 The crossing puzzle

A farmer must take a **goat**, a **cabbage** and a **wolf** across a river. His boat is small: he can take **only one of the three with him** on each crossing.



The two rules:

- if the **goat** is left alone with the **cabbage**, the goat eats it;
- if the **wolf** is left alone with the **goat**, the wolf eats it.

The farmer being present prevents everything. The boat never crosses empty of the farmer — he is the one who rows.

The goal: get all three across, with nothing eaten.

a. Fill in the table. On each line write **what the farmer takes with him**, or *nothing*, and tick the bank he arrives at. Use as many lines as you need — you may not need all of them.

Crossing	He takes	→	←	Left behind on this bank
1		☐	☐	
2		☐	☐	
3		☐	☐	
4		☐	☐	
5		☐	☐	
6		☐	☐	
7		☐	☐	
8		☐	☐	

b. How many crossings did you need? _____

c. One of your crossings brings something *back* to the starting bank. Which one? At first sight this looks like going backwards — explain in one sentence why it is necessary.

d. A friend says: “I take the wolf first, it is the dangerous one”. Follow that first crossing in your head. What has happened on this bank while he is rowing?

e. Someone else gets everything across in more crossings than you, with nothing eaten. Are both of you right? Which solution is the better one, and why?

Reading a rule exactly, repeating a step, and preferring the shortest correct method — that is what this course is about.