Handout #5: Abstraction

EXERCISE #1

Mark the following statements as true or false:

A. An abstraction leaks when it takes details into account unnecessarily. **(False)**
B. An abstraction must be instantiated before it can be executed.
C. A dynamic model shows the changes in state of something over time.
D. A directed graph is a dynamic model. **(False)**
E. Accuracy describes closeness to the true value; precision describes the level of refinement in a measurement.

EXERCISE #2

Order the following into layers of abstraction, starting with the most general and ending with the most specific.

A. animal;
B. bird;
C. penguin;
D. Emperor penguin;
E. Tommy the Penguin.

Trainers Support
Algorithmic Thinking

Co-funded by the
Erasmus+ Programme
of the European Union

EXERCISE #3

For renting out a car, which of the following is it necessary for a rental company to know about? For each one, explain your answer:

A. The car's current mileage. Yes: *the distance travelled by the customer could be used to calculate the price.*

B. The customer's height. *No. Irrelevant to a car rental.*

C. Number of wheels on the car. *No. This is both constant and irrelevant to a car rental (if the number of wheels on the car has changed, something has gone very wrong!).*

D. The car's current fuel level. *Yes: the car needs handing over to the customer with a specific amount of fuel.*

E. ID number of the customer's motorcycle licence. *No. A motorcycle licence isn't required to rent a car.*