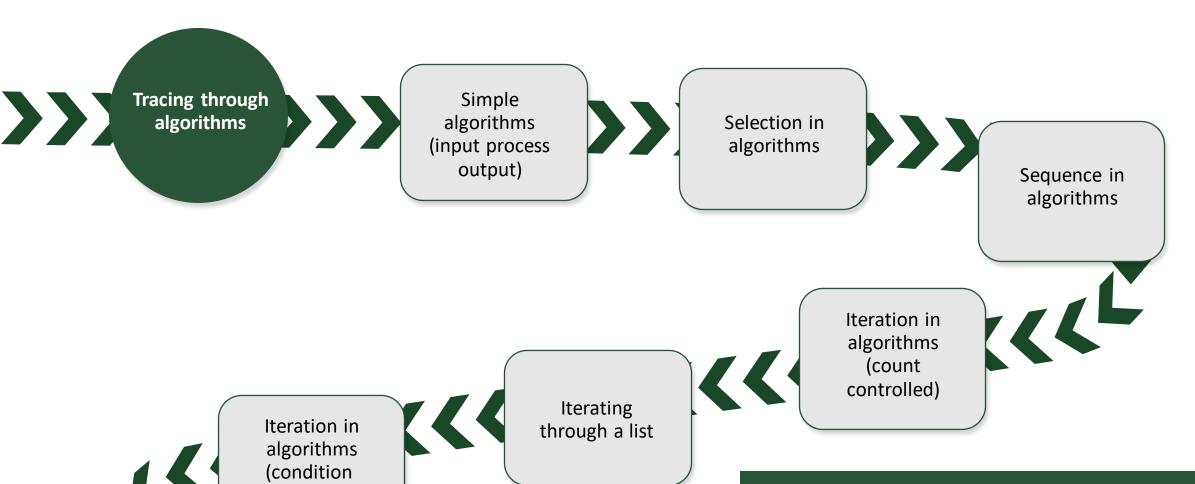


LEARNING JOURNEY COMPUTER SCIENCE

ALGORITHMIC LITERACY - READING



"Computational thinking is taking an approach to solving problems, designing systems and understanding human behaviour that draws on concepts fundamental to computing." - Jeanette Wing, Communications of the ACM, 2006 **Computational thinking** is the skill that underpins algorithms and programming. It describes the process between identifying a problem amenable to a computational approach, and implementing the solution to that problem using a programming language. It is an essential skill for all computer scientists, and it is the skill that you will develop over the course of your studies.

TUDOR HABITS

You will develop grit and resilience as you develop computational thinking skills on this learning journey.

VOCABULARY: Variable, sequence, selection, iteration, trace

Validating input data

From reading to writing

WE ARE HERE

controlled)

Testing algorithms in Python

Identifying and fixing errors (debugging)



Changing algorithms in Python





LEARNING JOURNEY COMPUTER SCIENCE

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systems and understanding human behaviour

COMPUTATIONAL THINKING



breaking down a complex problem or system into smaller parts that are more manageable and easier to understand

Pattern recognition

patterns complex efficiently

finding the similarities or among small, decomposed problems that can help us solve more problems more

Algorithmic design

WE ARE HERE

A plan, a set of stepby-step instructions to solve a problem

process of filtering out ignoring - the characteristics of patterns that we don't need in order to concentrate on those that we do

TUDOR HABITS

Abstraction

You will develop grit and resilience as you develop computational thinking skills on this learning journey.

VOCABULARY: Computational thinking, pattern recognition, abstraction, algorithmic design, implementation

Implementation

The implementation of the algorithm (plan) using programming code