



4.2.1 Data Structure & ADTs

1) Data structures can be static or dynamic.

a) Explain the differences between static and dynamic data structures.

[2 marks]

b) Discuss the advantages and disadvantages of dynamic data structures compared to static data structures.

[4 marks]

2) Complete Table 1 by stating whether each data structure is **static or dynamic**, and **mutable or immutable**.

Table 1

Data Structure	Static / Dynamic	Mutable / Immutable
Array		
List		
Tuple		

[6 marks]

3) A programmer needs to store a collection of values.

They must be stored where:

- the number of values may change while the program is running
- the values need to remain in order
- the values may be of different data types

a) Which of the following data structures would be most suitable? An Array, List or Tuple?

[1 mark]

b) Explain your choice.

[2 marks]

