

6 Two arrays `Data` and `Pointer` are accessed by the procedure `Place()`

`Data` and `Pointer` are both global arrays of type `INTEGER`

The contents of these two arrays are shown:

	Data		Pointer
1	1018	1	7
2	1007	2	3
3	1010	3	1
4	1056	4	6
5	1092	5	-1
6	1062	6	5
7	1034	7	4
8	0	8	9
9	0	9	10
10	0	10	-1

Study the pseudocode:

```

PROCEDURE Place(Value : INTEGER, Start : INTEGER, Unused : INTEGER)
  DECLARE New, Current, Last : INTEGER
  CONSTANT NullPointer = -1
  New ← Unused
  Last ← NullPointer
  Current ← Start
  WHILE Current <> NullPointer AND Data[Current] < Value
    Last ← Current
    Current ← Pointer[Current]
  ENDWHILE
  Pointer[New] ← Pointer[Last]
  Pointer[Last] ← New
  Data[New] ← Value
ENDPROCEDURE

```

(a) (i) Complete the trace table below by dry running the procedure `Place()` when it is called by the statement:

```
CALL Place(1043, 2, 8)
```

Value	Start	Unused	New	Last	Current

[4]

(b) The operation carried out by procedure `Place()` together with the arrays form part of the implementation of an Abstract Data Type (ADT).

Identify the ADT and state the operation carried out by procedure `Place()`

.....

.....

.....

.....

.....

[2]