AH Computing Science
STANDARD ALGORITHMS – INSERTION SORT
Standard algorithms – Insertion Sort

Insertion sort

- Starts at one end of a list and progressively sorts each subsequent item until it reaches the last item.
- The algorithm uses 2 loops. The outer loop counts from 1 to list length. The inner counts down from 1 less than the outer loop value to 1, reducing the number of items to be checked each round.
Standard algorithms – Insertion Sort

Pseudocode:

PROCEDURE insertionSort(ARRAY OF INTEGER list)

DECLARE listLength INITIALLY length (list)

FOR outerLoop FROM 1 TO listLength DO
    FOR innerLoop FROM outerLoop TO 1 STEP -1 DO
        IF (list[innerLoop -1] > list[innerLoop]) THEN
            swap(list[innerLoop -1] , list[innerLoop])
        END IF
    END FOR
END FOR
END PROCEDURE

PROCEDURE swap(REF a, REF b)

DECLARE temp AS INTEGER INITIALLY a
SET a TO b
SET b TO temp
END PROCEDURE