**Pseudocode**

* Finding the Maximum Element in a Finite Sequence

**procedure**: max(a1, a2, … , an: integers)

*max* := a1

**for** *i* := 2 to *n*

if *max* < ai then *max* := ai

**return** max{max is the largest element}

\*Does this algorithm have all the properties? – Yes

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* Finding the Smallest of the 3 integers

**procedure** : findsmallest(a , b , c : integers)

*min* := a

if b < min then min := b

if c < min then min := c

**return** min {smallest of the 3 numbers}

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* Loops(in general)
* For-loop

**for** =: number to end number

Step 1

Step 2

…

**End-for**

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* While-loop

**while** condition

Step 1

Step 2

…

**End-while**

* Nested-loop

Example: Counting the duplicates in a sequence of numbers

4,5,2,4,5,9,3,5

**procedure:** findDuplicates( a1, a2, … , an: a sequence with length n)

c*ount* := 0

**for** i := 1 to n – 1

**for** j := i + 1 to n

**if** ai ==aj then count := count + 1

**End-for**{end inner-loop}

**End-for**{end outer-loop}

**return** *count*{return the number of duplicate in the list}

* How many times is the variable *count* increased?

-12x

* What is the final value of *count?*

-60 = 1 \* (1 + 2 + 3 + 4) + 2 \* (1 + 2 + 3 + 4) + 3 \* (1 + 2 + 3 + 4)

*count* := 0

**For** i := 1 to 3

**For** j := 1 to 4

*count* := *count* + i \* j

**End-for**{end inner-loop}

**End-for**{end outer-loop}