Algorithms & Constructs

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3. Definition and Python example
    1. Selection
    2. Assignment
    3. Variables
    4. Subroutine
    5. Incrementation
    6. Declaration

Algorithms

1. Task1 – Outputs
2. Task2 – correct
3. Task3 - Design

9. A weather station records monthly rainfall figures in millimetres (mm) for a year, starting in January. [10]

Write an algorithm, using pseudo-code, which will use these twelve monthly rainfall figures as input.

The program should output:

- the total rainfall for the year
- the mean monthly rainfall for the year
- the month numbers (1 for January, etc) where the rainfall was above the mean.

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Award one mark for each of the following up to a maximum of ten marks:

- declare array
- initialise variables
- loop structure allowing 12 monthly readings
- input rainfall
- calculate total
- output total
- calculate mean
- output mean
- comparison of rainfall value against mean to determine if it is higher
- output months above mean.

Indicative content

```
1  Declare RainfallProc
2
3  rainfall[12] is integer
4  total is integer
5  mean is real
6
7  set total = 0
8  set mean = 0
9
10 for i = 1 to 12
11    input rainfall[i]
12    total = total + rainfall[i]
13 next i
14
15 output "The total rainfall is ",
   total
16 mean = total / 12
17 output "The mean rainfall is ", mean
18
19 output "Months above mean:"
20
21 for i = 1 to 12
22    if rainfall[i] > mean then
23          output i
24    end if
25 next i
26
27 End RainfallProc
```

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