CodeCool Bioinformatics Group

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The Art of R Programming

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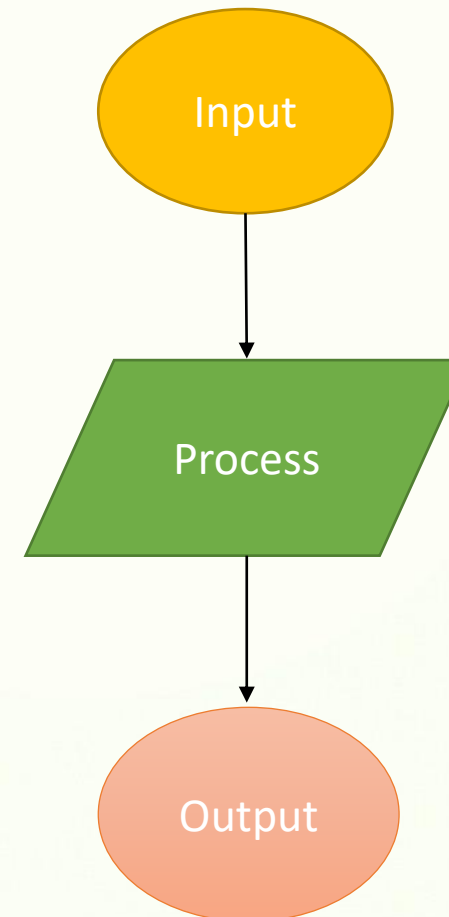# Solving a problem using computer

What is algorithm?

- A set of instructions that:
  - Is in order
  - Exhaustible
  - It has at least one input

Solving a problem using computer

What is algorithm?
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Solving a problem using computer

Example: The number of subsets of a 2n-1 member set is 32. Find the value of n.

Solving a problem using computer

The question confuses me.

- Give different examples
- Divide and Conquer

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Solving a problem using computer

Example: The number of even numbers from 1 to 20

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Solving a problem using computer

Example: Write an algorithm to calculate and print the average of three arbitrary numbers.

Solving a problem using computer

Example: Write an algorithm that determines the number M is even or odd

Solving a problem using computer

Example: Write an algorithm that determines the divisibility of one number over another.

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Example: Write an algorithm that takes three arbitrary numbers and determines and prints the largest value among them.

Solving a problem using computer

Example: Calculate Human organism GC content.

Solving a problem using computer

Example: Sort numbers

➤ **Give an Example**

10	30	17	12	1

1st step:

10	30	17	12	1

Min number: 10

1ˢᵗ step:

10	30	17	12	1

Min number: 10

1st step:

10	30	17	12	1

Min number: 10

1ˢᵗ step:

10	30	17	12	1

Min number: 1

1st step:

1	30	17	12	10

2nd step:

1	30	17	12	10

Min number: 17

2nd step:

| 1 | 17 | 30 | 12 | 10 |

2nd step:

1	17	30	12	10

Min number: 12

2nd step:

1	12	30	17	10

2ⁿᵈ step:

1	12	30	17	10

Min number: 10

2nd step:

1	10	30	17	12

3ʳᵈ step:

1	10	30	17	12

Min number: 17

3rd step:

1	10	17	30	12

Min number: 12

3rd step:

1	10	12	30	17

4th step:

1	10	12	30	17

Min number: 17

4th step:

1	10	12	17	30

با تشکر از حسن توجه شما