

Module-2

Flowcharts & Algorithms

1. Flowcharts
2. Algorithms
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4. Time & Space Complexity.



Flowcharts










What are Flowcharts ?

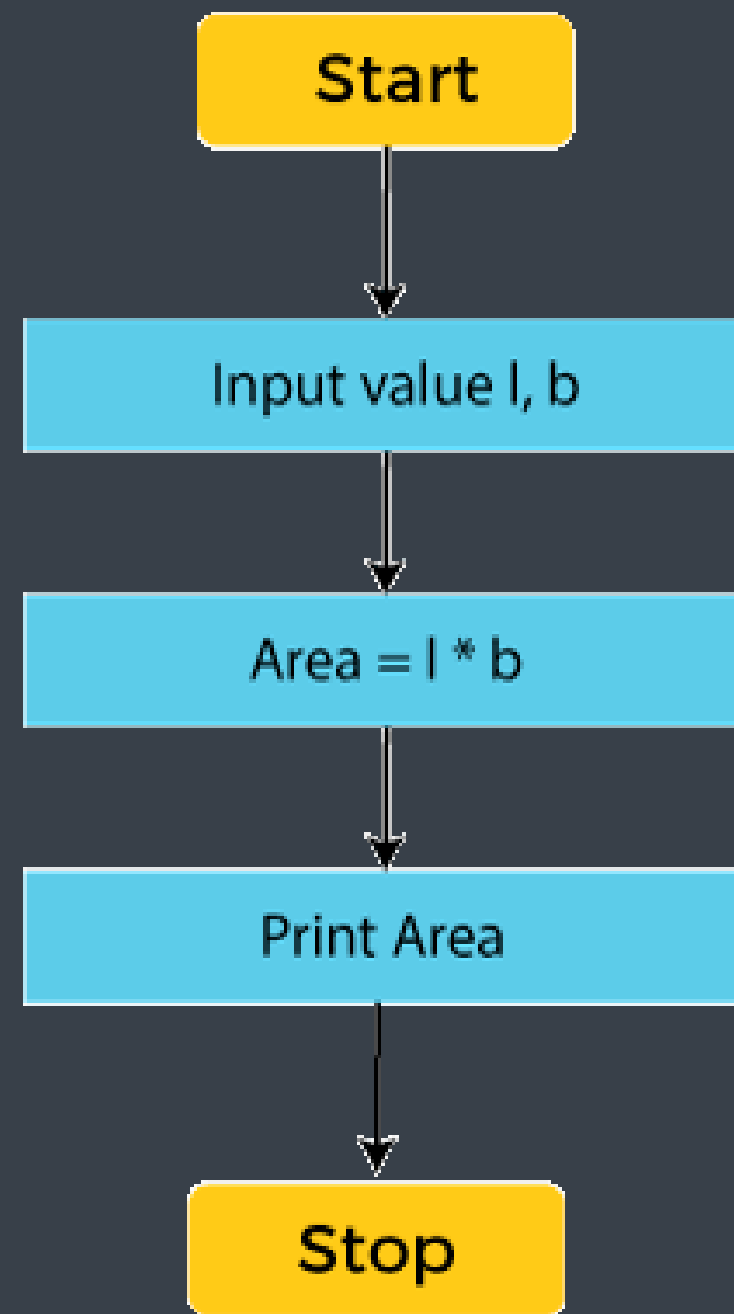
Flowchart is a diagrammatic representation of sequence of logical steps of a program.

Symbols

Flowcharts use simple geometric shapes and arrows for processes and data flow.

	Start/Stop		Arrow
	Process		On-page Connector
	Input/ Output		Off-page Connector
	Decision		

Area of a Rectangle



input:

l, b

Output:

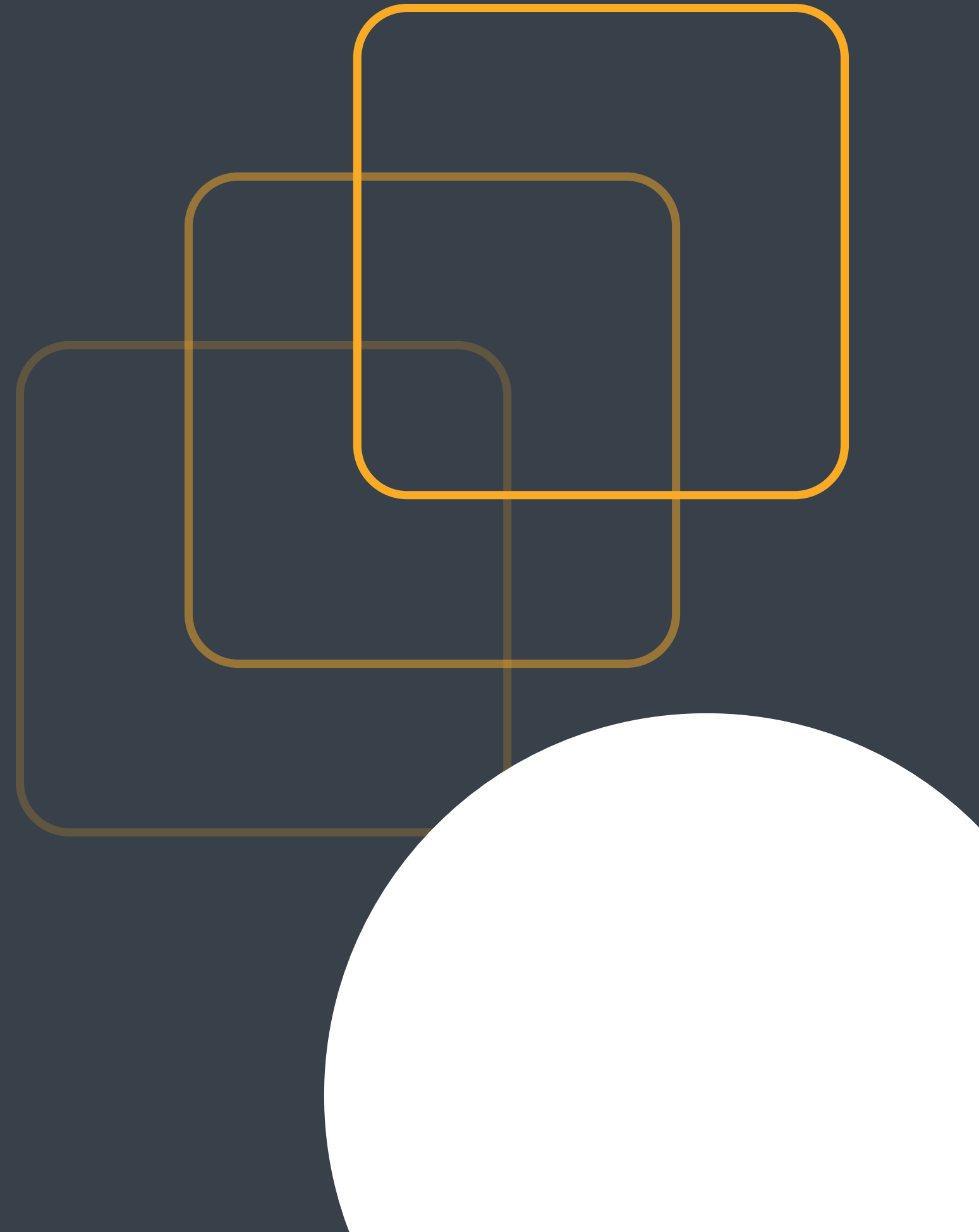
Area of Rectangle

My Approach for getting Idea

Input -> Process -> Output Strategy



Algorithms



Algorithms

Algorithm is a step-by-step procedure, which defines a set of instructions to be executed in a certain order to get the desired output.



Sum of 2 digits

step 1 – START

step 2 – declare three integers a, b, c

step 3 – define values of a & b

step 4 – sum calculation of a & b

step 5 – store output of step 4 to c

step 6 – print c

step 7 – STOP

input:

a, b

Output:

Sum of a and b



Sum of 2 digits Explanation

input:

a,b

Output:

Sum of a and b



Pseudocode



Pseudocode

- A way of expressing an algorithm without conforming to specific syntax rules.
- An informal high-level representation of the actual code

Example

```
set i to 0
for each i from 0 to 9
    if i is odd
        print i
end for loop
```

Time & Space Complexity



Time Complexity:

The time complexity of an algorithm quantifies the amount of time taken by an algorithm to run as a function of the length of the input.

Space Complexity:

Problem-solving using computer requires memory to hold temporary data or final result while the program is in execution. The amount of memory required by the algorithm to solve given problem

Time and Space Complexity in Data Structure

