



INTRODUCTION TO Computational Thinking Algorithm





Activity



01

Activity-1: write the steps of preparation of TEA.



02

Activity-2: write the steps to find greatest of two numbers.



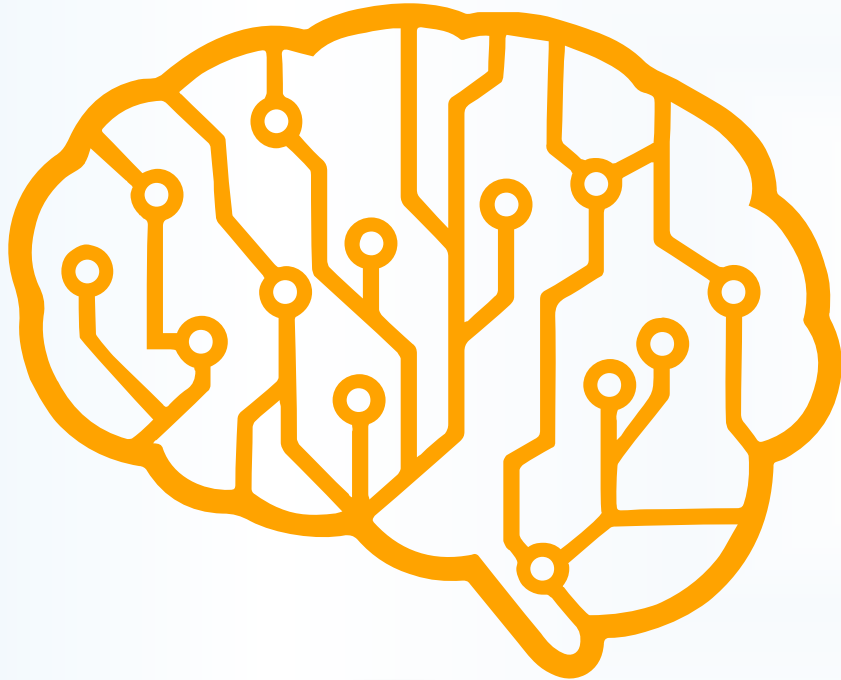
What is Algorithm?

A process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.





SOLUTION OF ACTIVITY 1



1

Step1:Start.

2

Step2:Put milk in the kettle.

3

Step3:Add tea leaves and sugar in the milk.

4

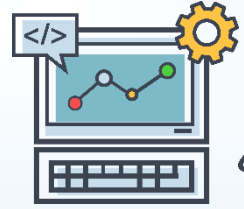
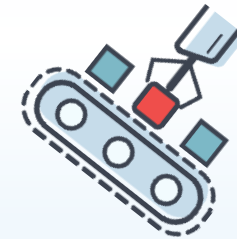
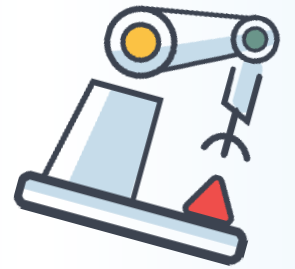
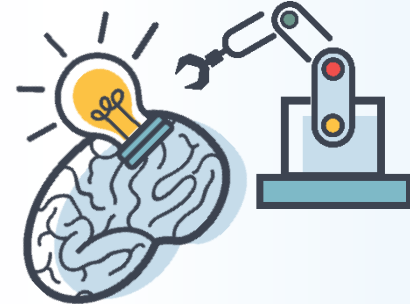
Step4:Heat the Kettle and allow it to boil.

5

Step5:Filter the tea in sups and serve hot.

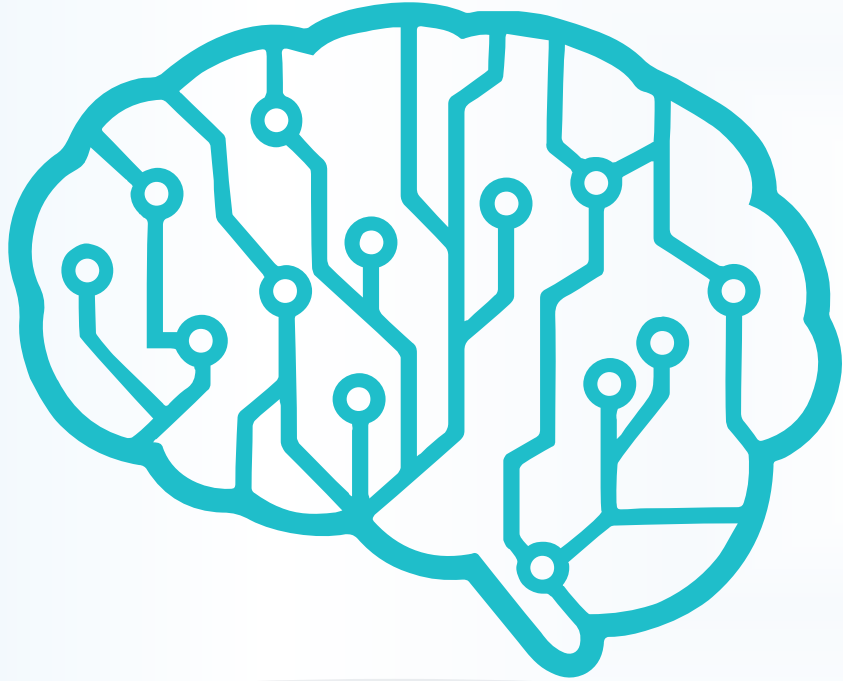
6

Step6:Stop.





SOLUTION OF ACTIVITY 2



1

Step1:Consider two numbers A,B.

2

Step2:Compute the greater number,

If $A > B$,then A is the greater number.

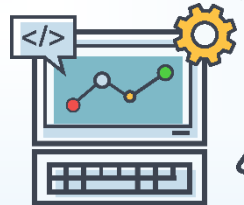
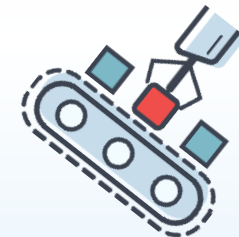
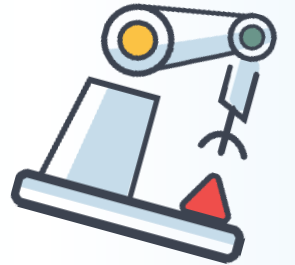
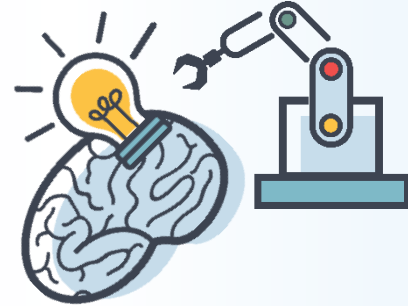
else B is the greater number.

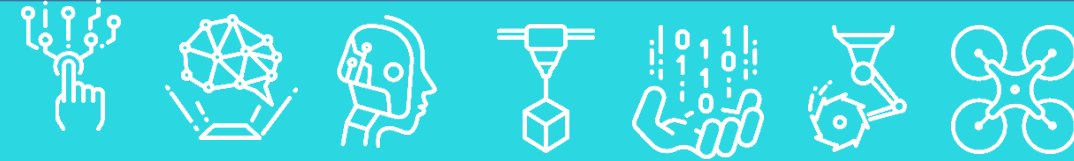
3

Step3:Print the greater number.

4

Step4:Stop.





Worksheet Time





**World's first algorithm was written
in the year 1815 by Ada Lovelace.**



**Google's algorithms are changed
almost 500 times per year.**



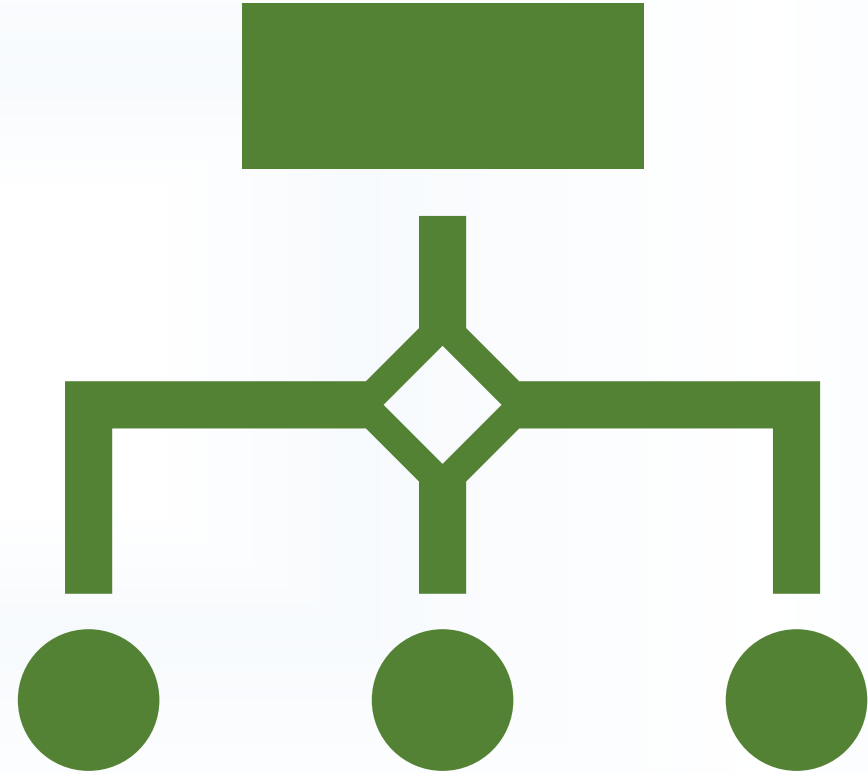
INTRODUCTION TO

Computational Thinking Flowchart








What is flowchart ?

A flowchart is a type of diagram that represents a workflow or process. A flowchart can also be defined as a diagrammatic representation of an algorithm.



Symbols of flowchart

Symbol	Name	Function
	Start/end	An oval represents a start or end point
	Arrows	A line is a connector that shows relationships between the representative shapes
	Input/Output	A parallelogram represents input or output
	Process	A rectangle represents a Process
	Decision	A diamond indicates a decision



Flowchart

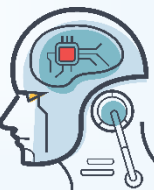
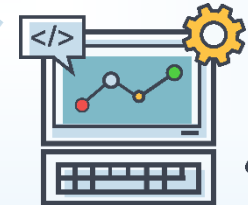
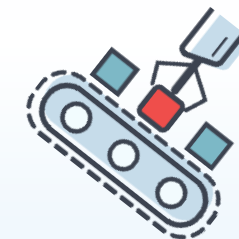
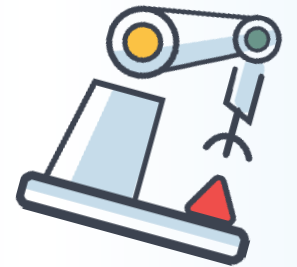
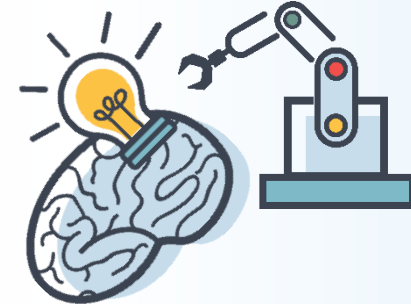
01

Part 1- Draw a flowchart for the algorithm of preparing tea which you wrote in the previous algorithm worksheet.



02

Part 2- Draw a flowchart for the algorithm to find the greater of two numbers which you wrote in the previous algorithm worksheet.





Algorithm to flowchart of tea preparation

1

Step1:Start.

2

Step2:Put milk in the kettle.

3

Step3:Add tea leaves and sugar in the milk.

4

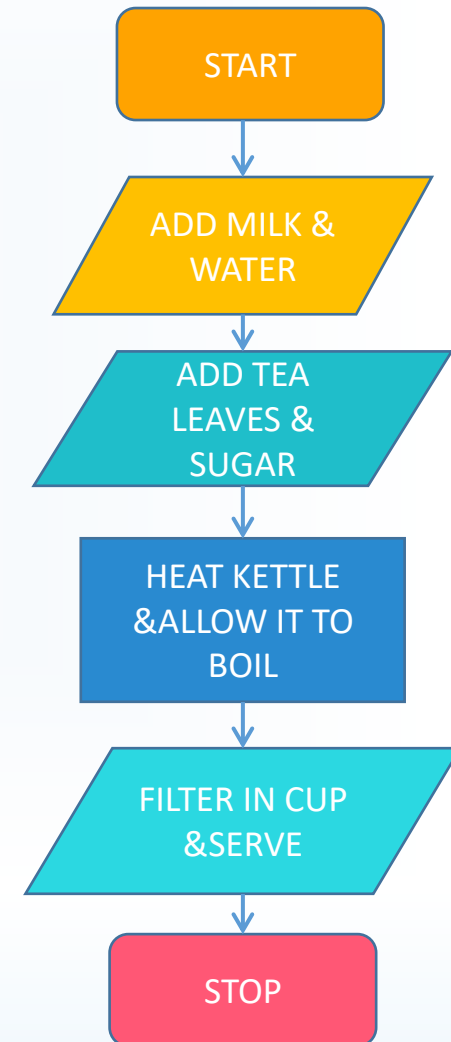
Step4:Heat the Kettle and allow it to boil.

5

Step5:Filter the tea in sups and serve hot.

6

Step6:Stop.





Algorithm to flowchart of finding greatest number

1

Step1:Consider two numbers A,B

2

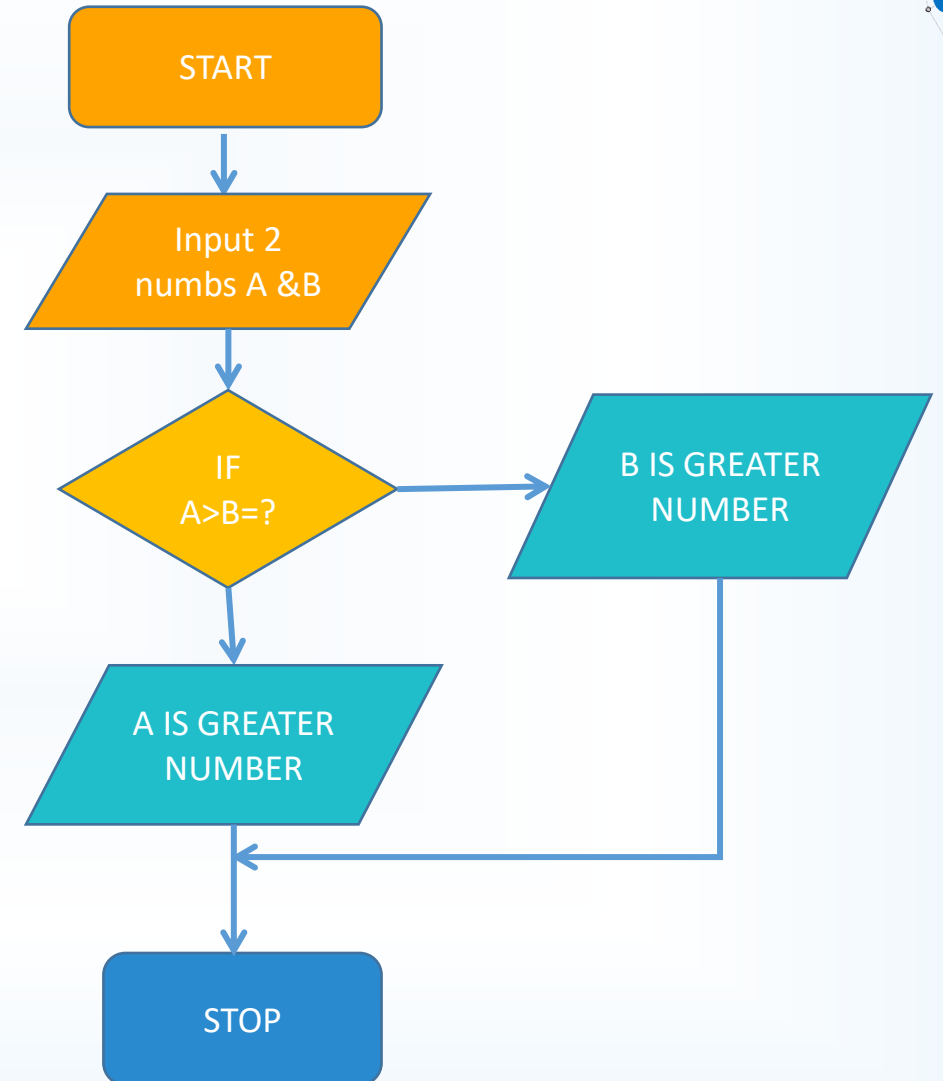
Step2:Compute the greater number,
If $A > B$,then A is the greater number.
else B is the greater number.

3

Step3:Print the greater number.

4

Step4:Stop.



Differences between Algorithm and Flowchart

Algorithm

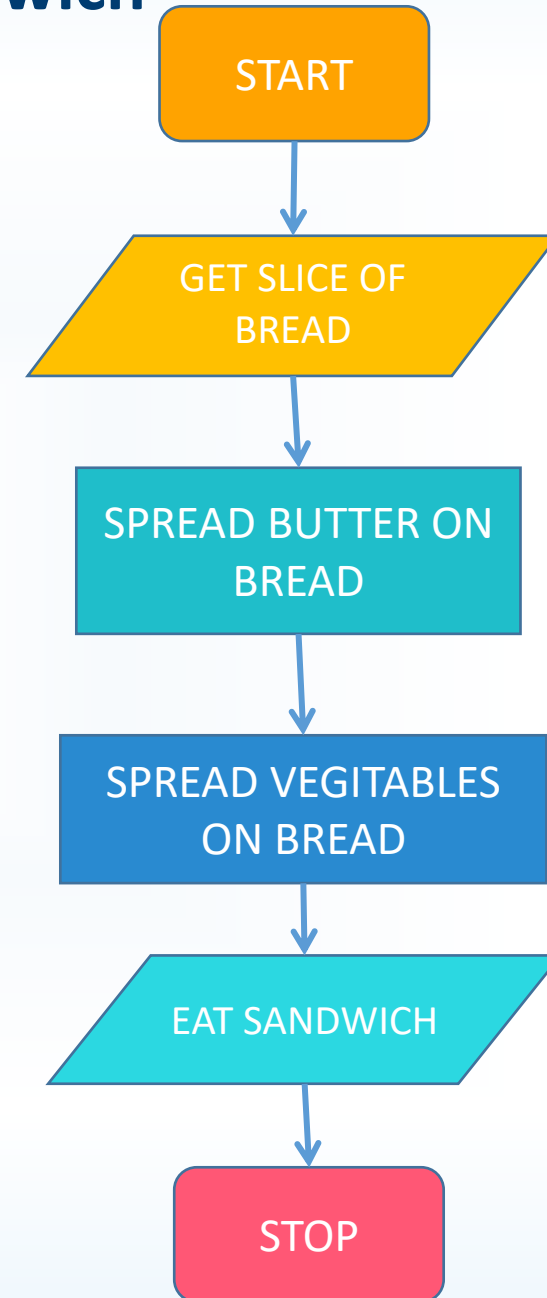
- Algorithm is step by step procedure to solve the problem.
- Algorithm is complex to understand.
- In algorithm plain text are used.
- Algorithm is easy to debug.
- Algorithm is difficult to construct.
- Algorithm does not follow any rules.

Flowchart

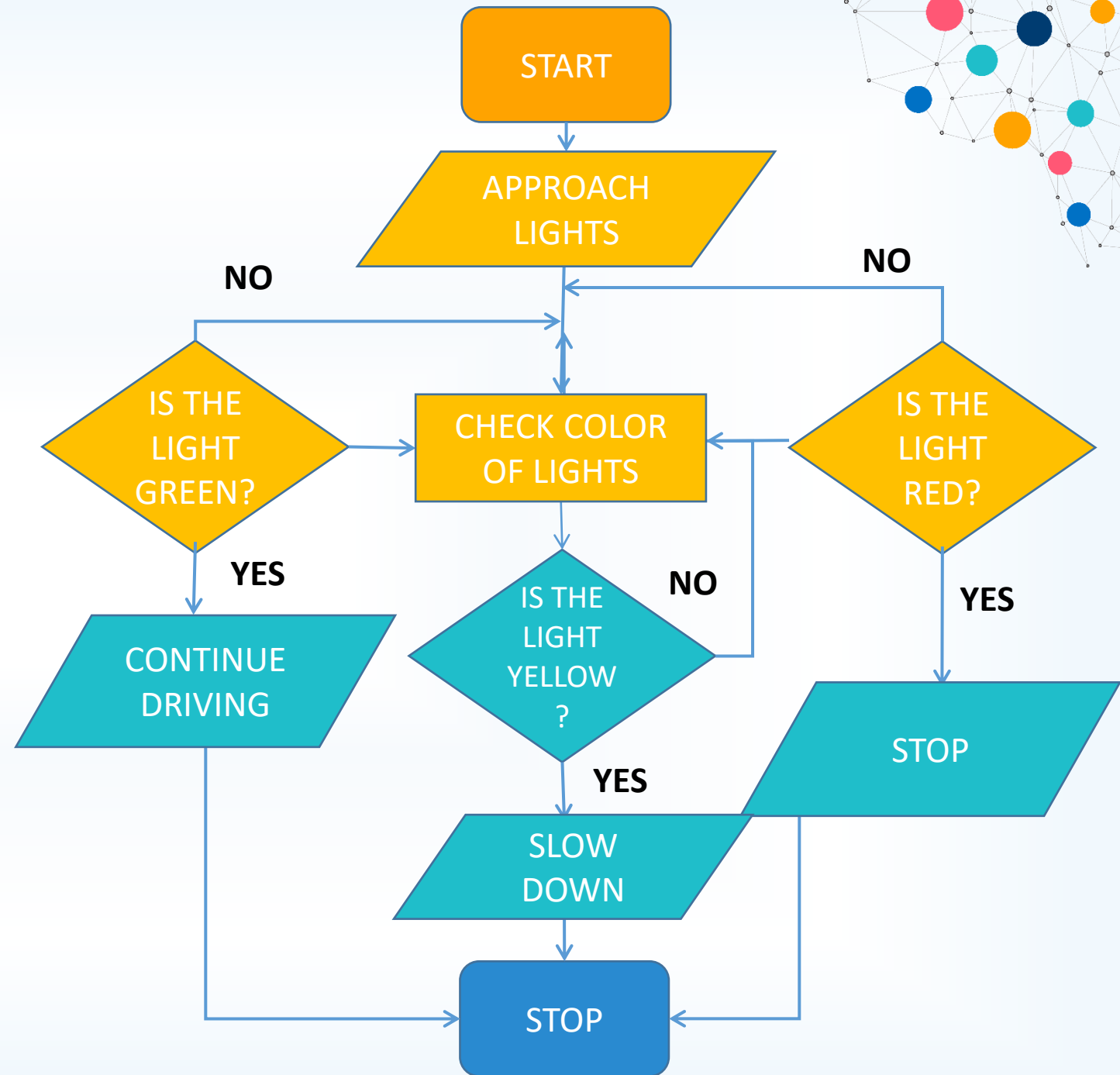
- Flowchart is a diagram created by different shapes to show the flow of data.
- Flowchart is easy to understand.
- In flowchart, symbols/shapes are used
- Flowchart it is hard to debug.
- Flowchart is simple to construct.
- Flowchart follows rules to be constructed.

Algorithm and flowchart of Making Sandwich

- 1 **Step1:**Start.
- 2 **Step2:**Get a slice of bread.
- 3 **Step3:**Spread butter on bread
- 4 **Step4:**Spread vegetables on bread
- 5 **Step5:**Eat Sandwich
- 6 **Step6:**Stop.



Traffic light signals



1

Step1:START from your place and approach the light

2

Step2: Check for the color of the light

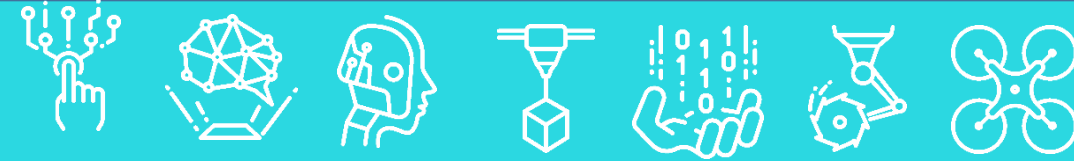
3

Step3:The decision is to be made on the bases of light colour .

Red-Stop
Yellow-Slow down
Green-Continue driving.

4

Step4:Stop.

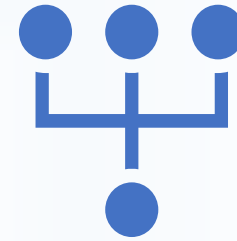


Worksheet Time





Flowcharts to document business processes came into use in the 1920s and '30s. In 1921, industrial engineers Frank and Lillian Gilbreth introduced the “Flow Process Chart” to the American Society of Mechanical Engineers (ASME).



A flowchart is a graphical representation of decisions and their results mapped out in individual shapes that were first developed by Herman H. Goldstine and John von Neumann in the 1940s.

