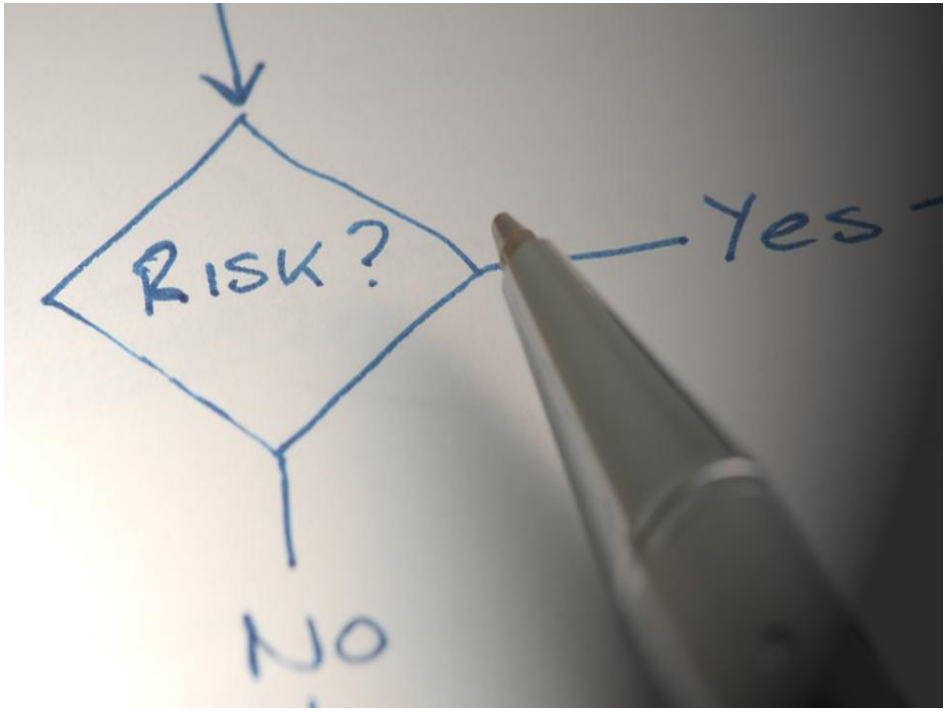
# Flow Charts




Go With The Flow

WEB PROGRAMMING FUNDAMENTALS
web design and development
full sail university

wpf


# Why are they important?

## The flowchart is a means of visually presenting the steps in a process

- Define and analyze processes.
- Build a step-by-step picture of the process for analysis, discussion, or communication.
- Define, standardize or find areas for improvement in a process.

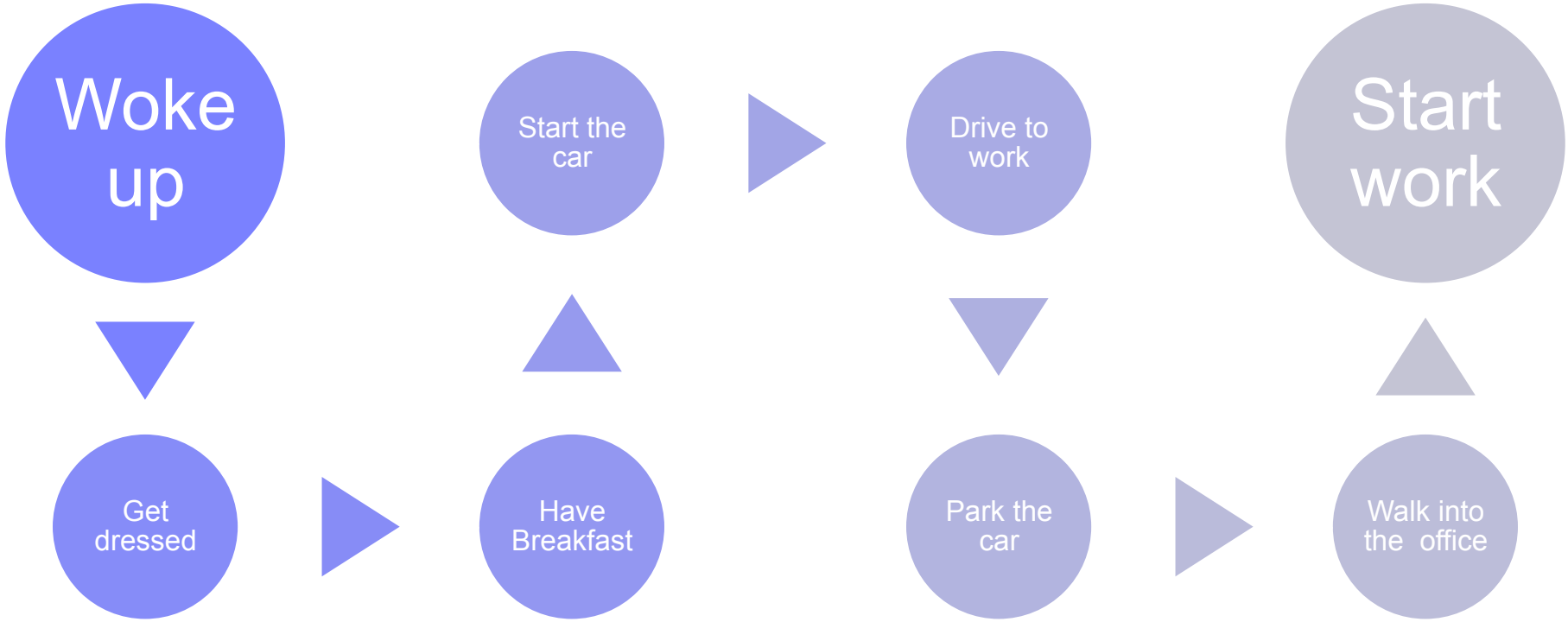

# What Are They?

- A simple mapping tool
- A diagrammatic representation that illustrates the sequence of operations to be performed to get the solution of a problem.
- Generally drawn in the early stages of formulating computer solutions.


# What Are They?

- Facilitate communication between programmers and business people/end users.
- Once the flowchart is drawn, it becomes easy to write the program in any high level language.
- Must for the better documentation of a complex program.


# Simple Example



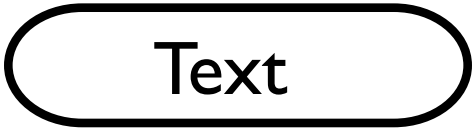

# When To Use A Flow Chart

- Analyzing a process
- Problem identification in any given process.
- Process improvement
- A communication tool


# Creating A Flow Chart

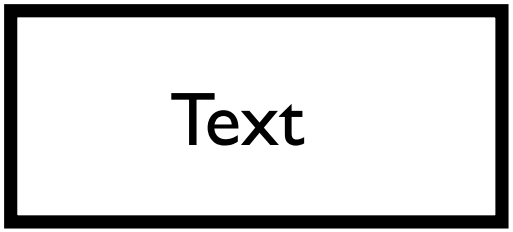
- Identify the process to be mapped in flowchart form
- Reduce the process to simple statements and decisions
- Adhere to the international symbols used in flowcharting in order to unify the flowchart to a known standard understood all over the world


# Symbols



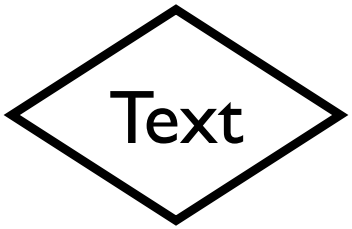

Oval/Rounded Rectangle - Terminator : Signals the start and end of any flowchart and hence process


# Symbols



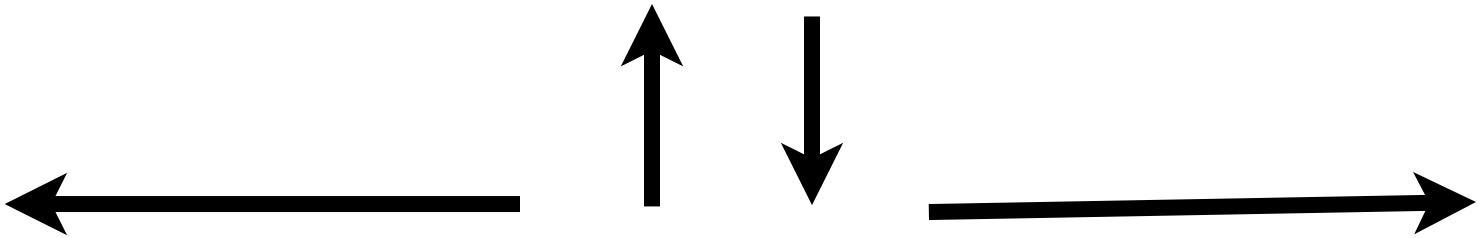

Rectangle - Step : Denotes a single activity in the process


# Symbols



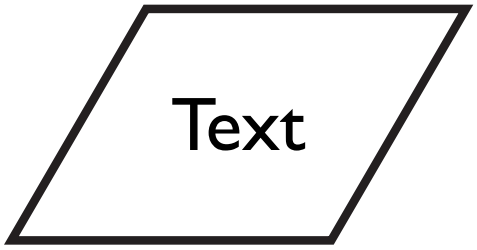

Diamond - Decision : Denotes any point in the process where is decision is to be made


# Symbols



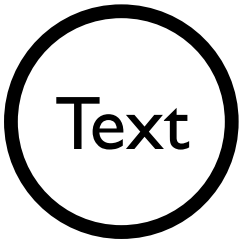
Lines - Flow Lines : The line with an arrow indicates the sequence of steps and the direction of the flow.


# Symbols



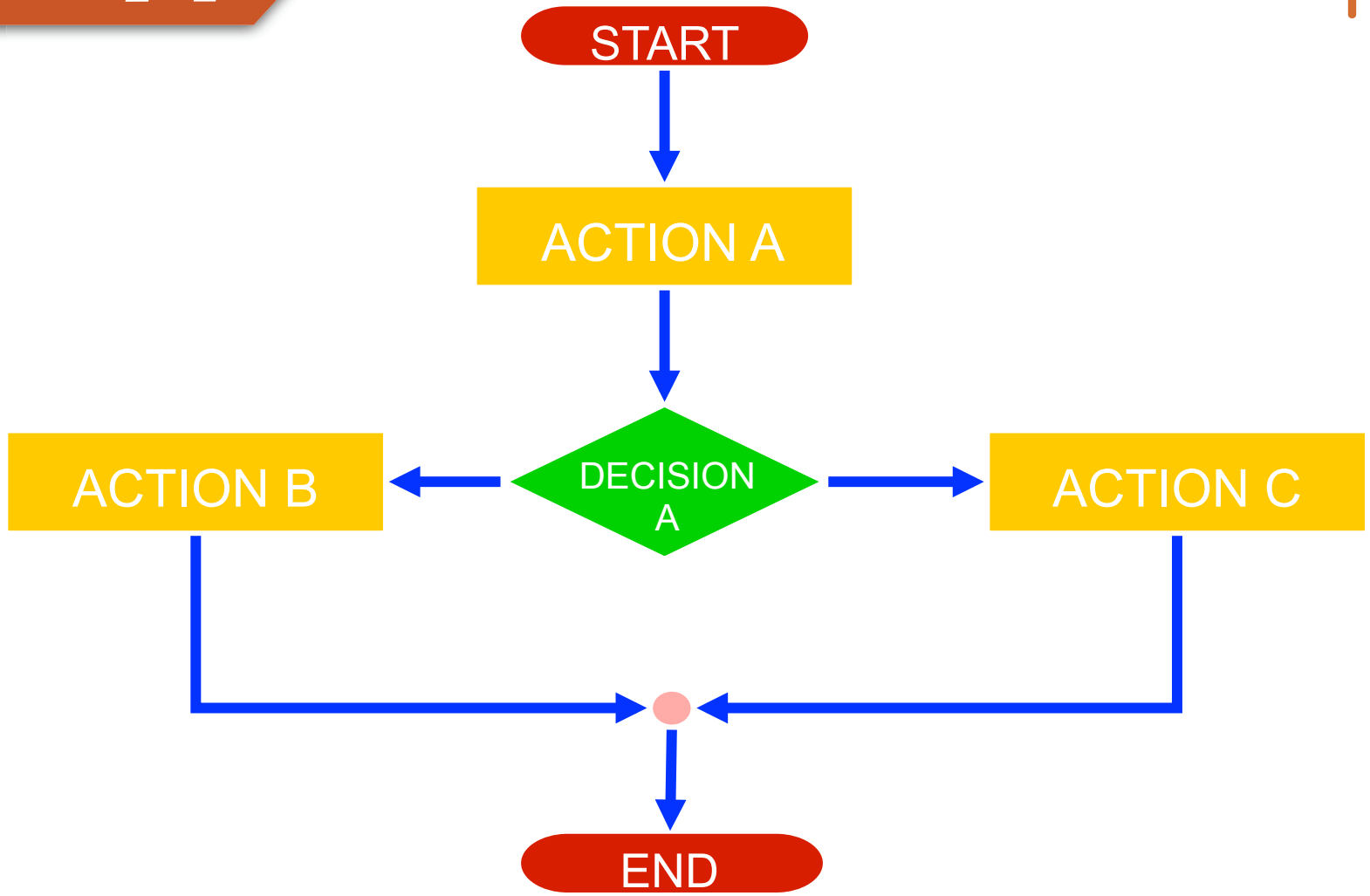

Parallelogram - Input/Output : This represents the information that is entered by a person or it is an output of the application.


# Symbols

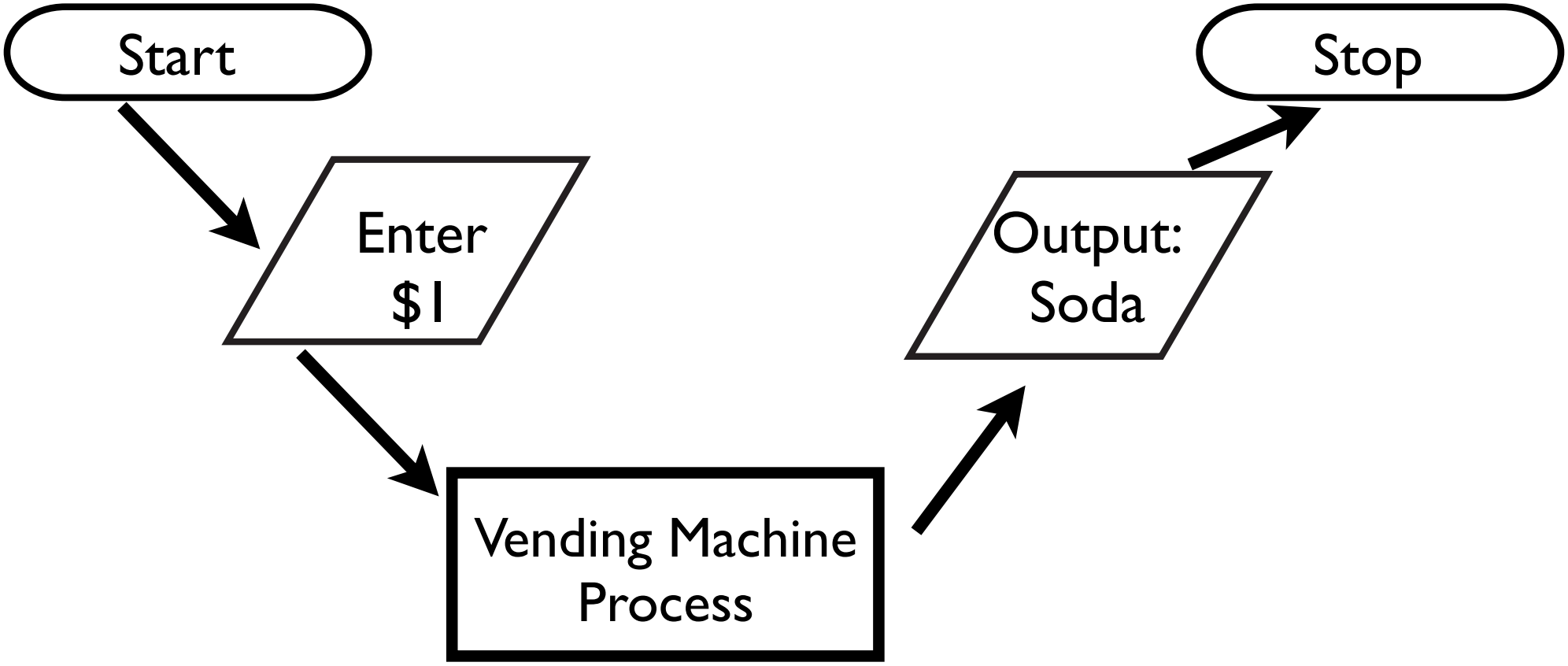



Circle - Multi-connector : Used to unify multiple decisions (multi-input) into single effect (single output)


# Example




# Example
# Buy A Soda




# Tips

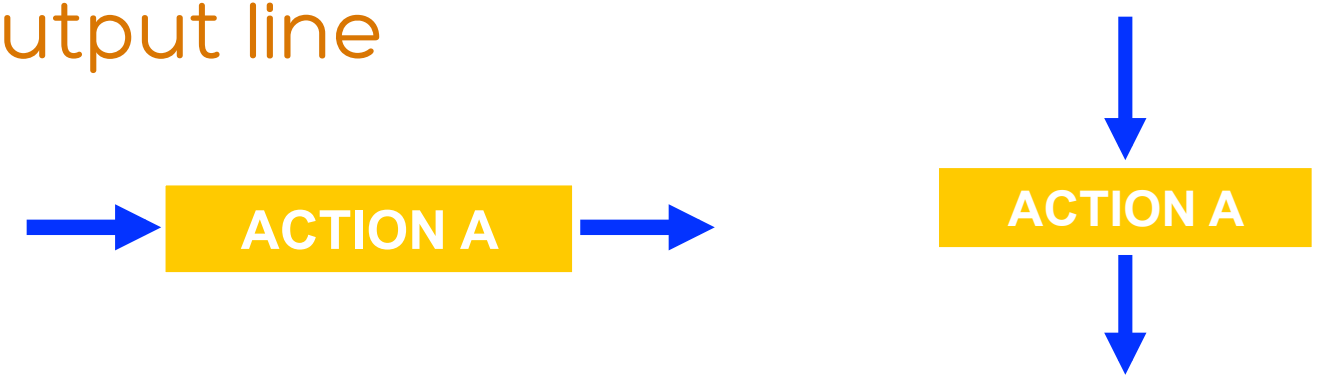
- Keep descriptions simple and to the point
- Maintain a consistent level of detail
- Identify key decisions and actions in the process
- Aim to minimize the flowchart as much as possible without compromising content


# Tips

- Always maintain the flow in the flowchart from top to bottom or from left to right
- Ensure that the flowchart has a logical start and finish
- Any one flowchart must have ONE and only ONE “End” box
- In drawing a flowchart all components must be listed in logical order

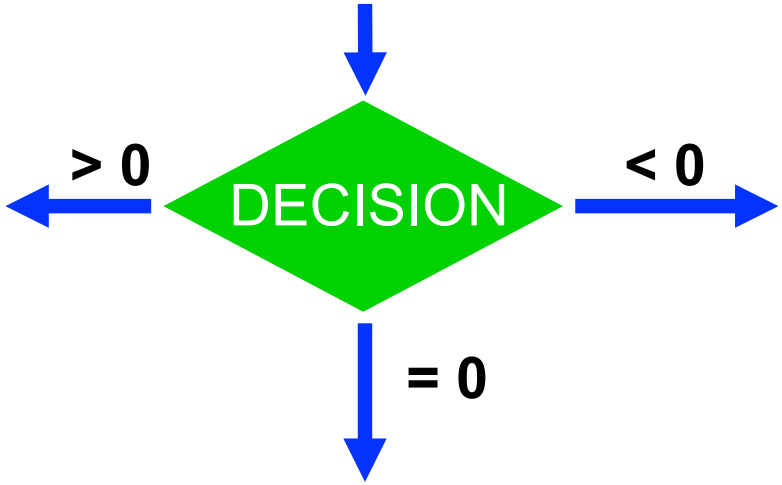

# Tips

- The flowchart should be clear, neat and easy to follow
- Any step (i.e. action), or terminator symbol should only have one input line and one output line




# Tips

- Any decision should have one input and up to three outputs




# Tips

- Finally, the flowchart's validity is tested by passing test data through it to ensure that process flow depicted in the flowchart mirrors that of the actual process being mapped
- AKA Walk-through your flowchart

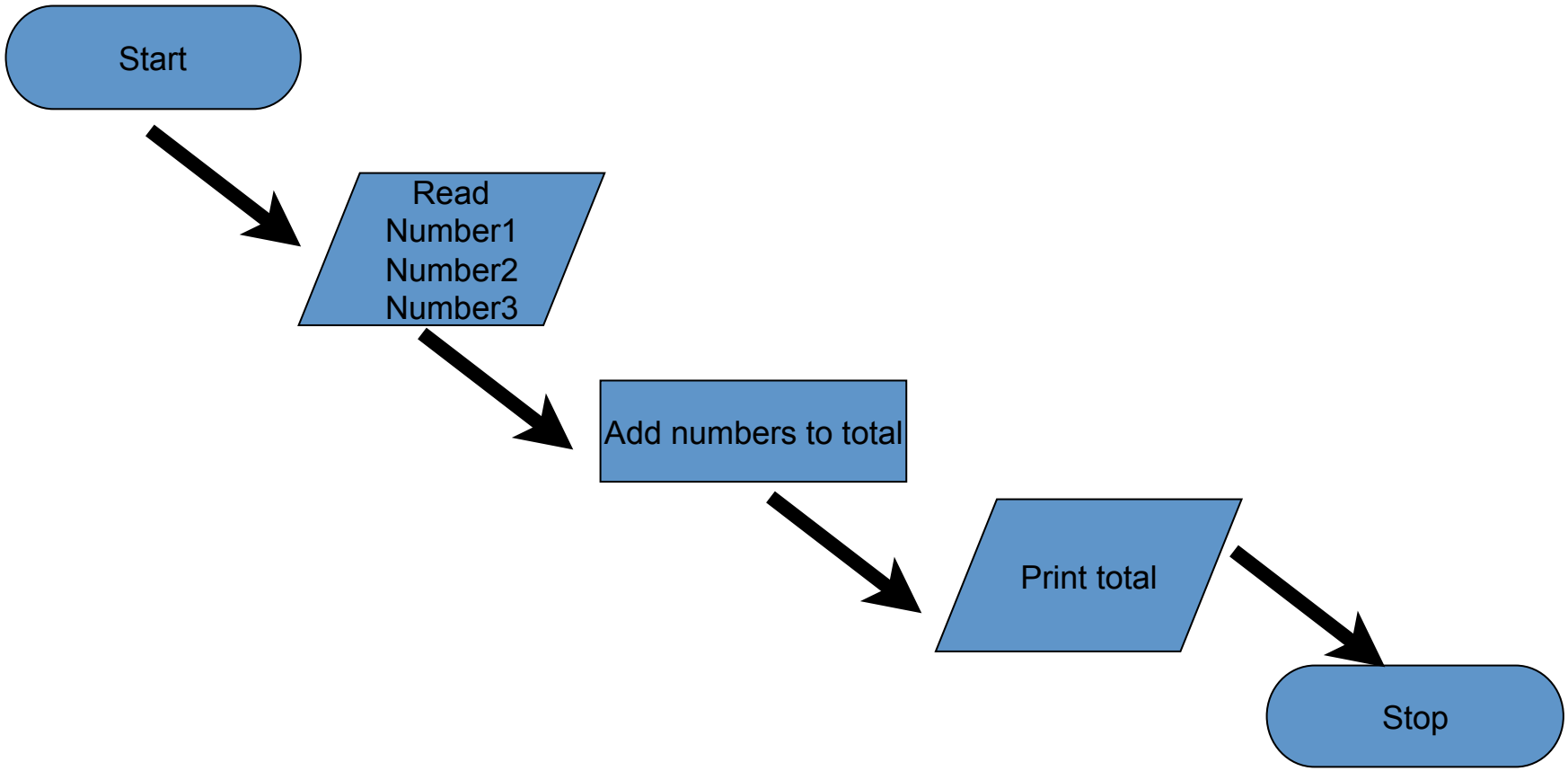

# Example
# Add 3 Numbers

A program is required to read three numbers, add them together and print their total.


# Example
# Add 3 Numbers

| INPUT | PROCESSING | OUTPUT |
|---|---|---|
| Number 1<br>Number 2<br>Number 3 | 1. Read Three Numbers<br>2. Add Numbers Together<br>3. Print Total Number | Total |


# Example
# Add 3 Numbers




# Software To Create Flowcharts

## Google Docs


# Software To Create Flowcharts

## OmniGraffle


# Software To Create Flowcharts

## Illustrator


# Complex Example

Draw a flowchart to find the largest of three numbers A,B and C.


# Complex Example

Draw a flowchart to find the largest of three numbers A,B and C.