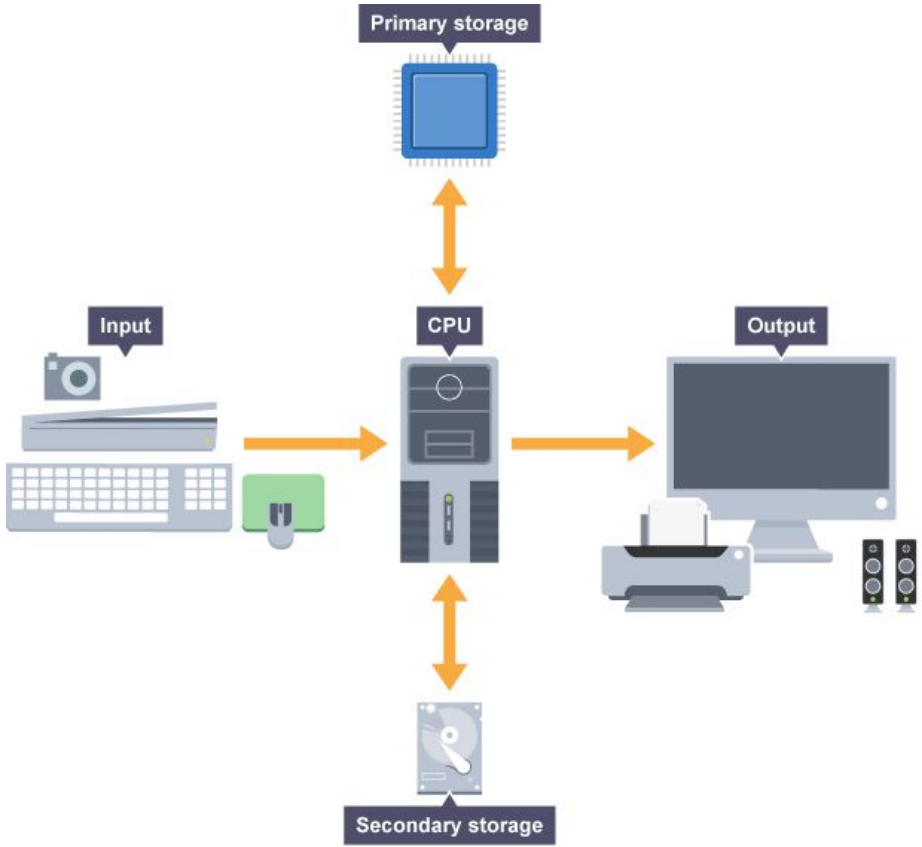
Day 1:

- Meaning of programming

Thura Aung

Hardware and Software



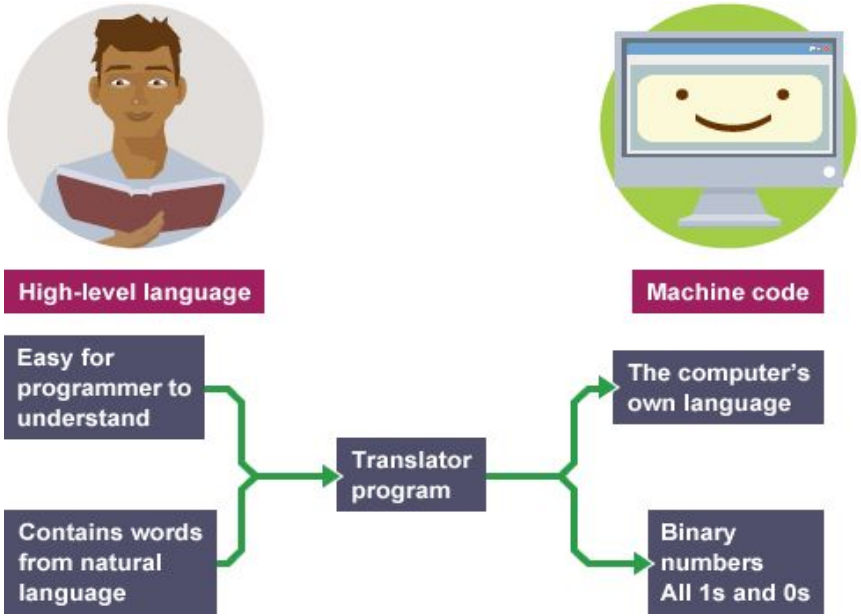
Software

- System software (e.g OS)
- Application software

Fetch-execute cycle of CPU

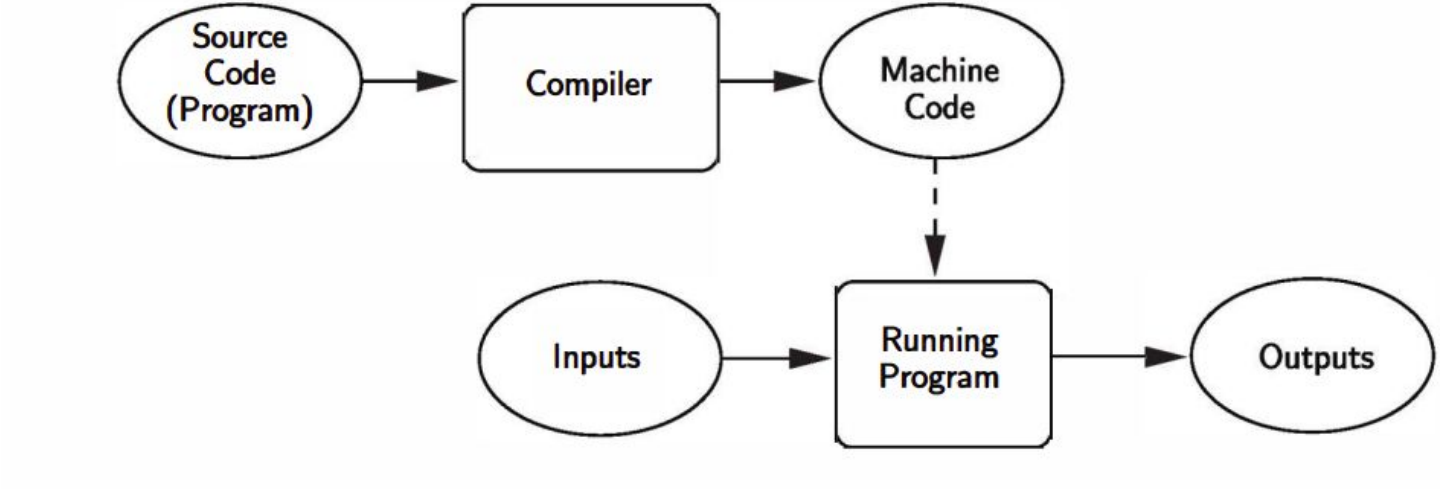
- Fetch
- Decode
- execute

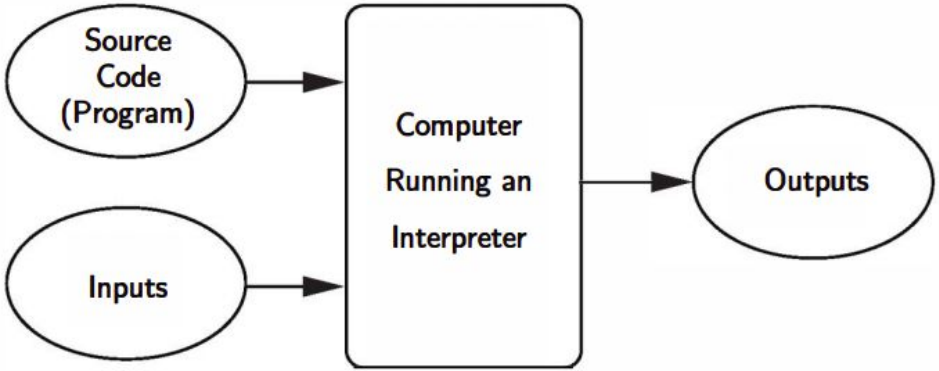
Programs and Programming

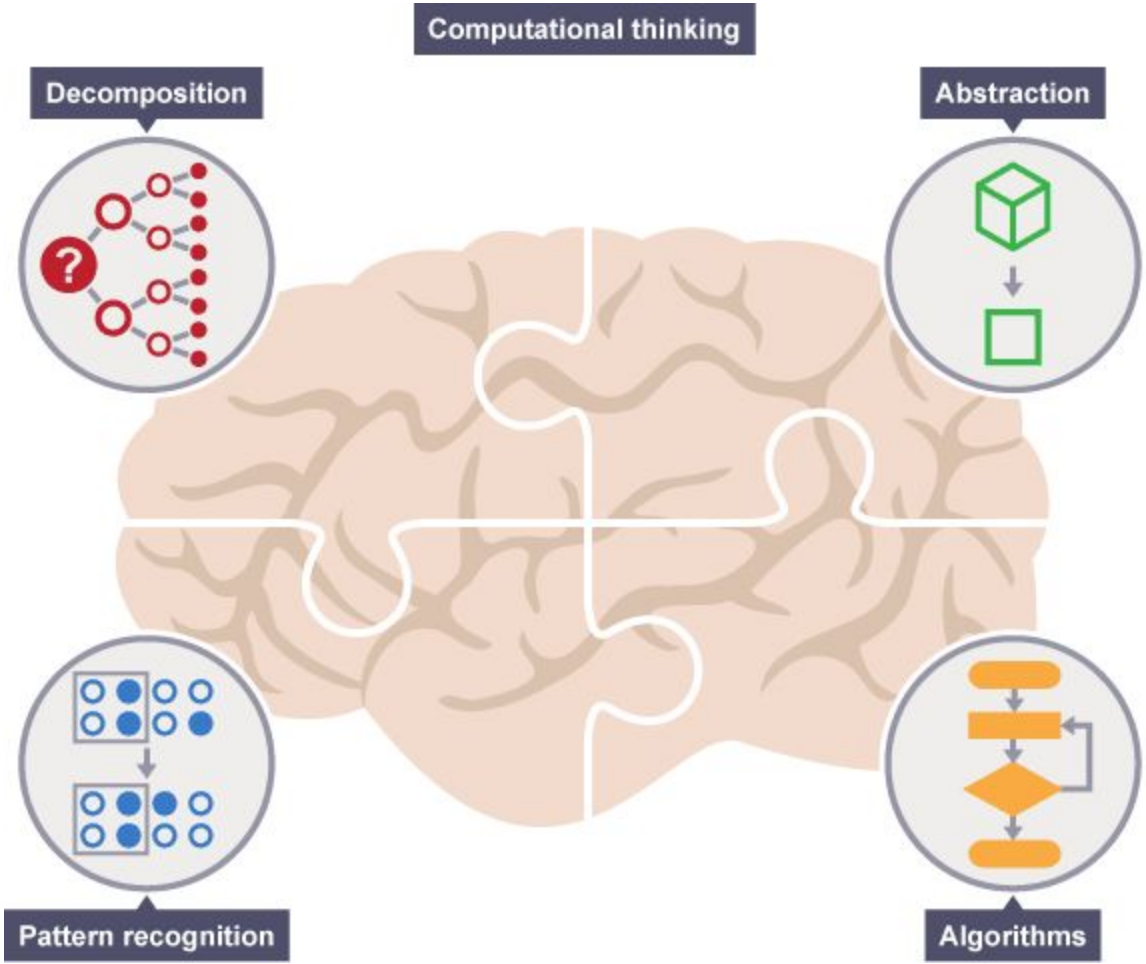


- Sequence of instructions to solve the problems telling a computer what to do.

- a precise form (its syntax)
- a precise meaning (its semantics)
-
- Low level Languages
  - Machine language
  - Assembly - assembler
    - Opcodes and operands

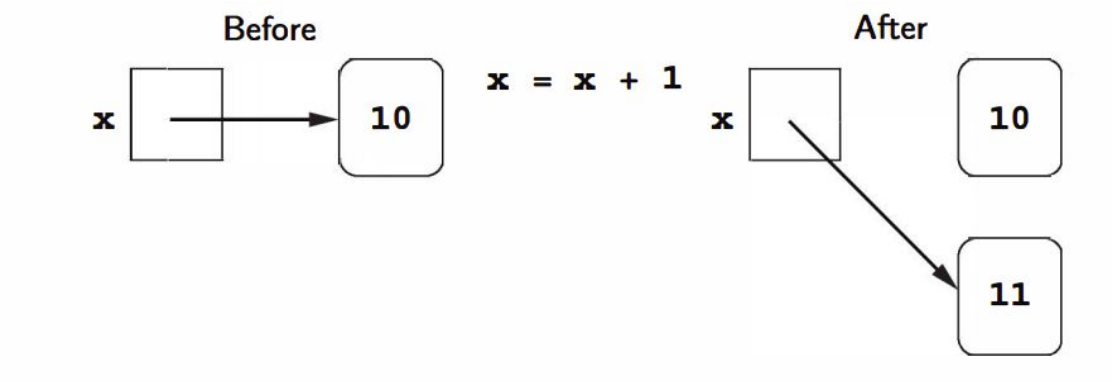

Source Code (Program)
Compiler
Machine Code
Inputs
Running Program
Outputs


Source Code (Program)
Inputs
Computer Running an Interpreter
Outputs


Computational thinking
Decomposition
Abstraction
Pattern recognition
Algorithms

Pseudocodes

- Assign =
- Read
- Print
- Compute
- Arithmetic
- Comparisons



Variable

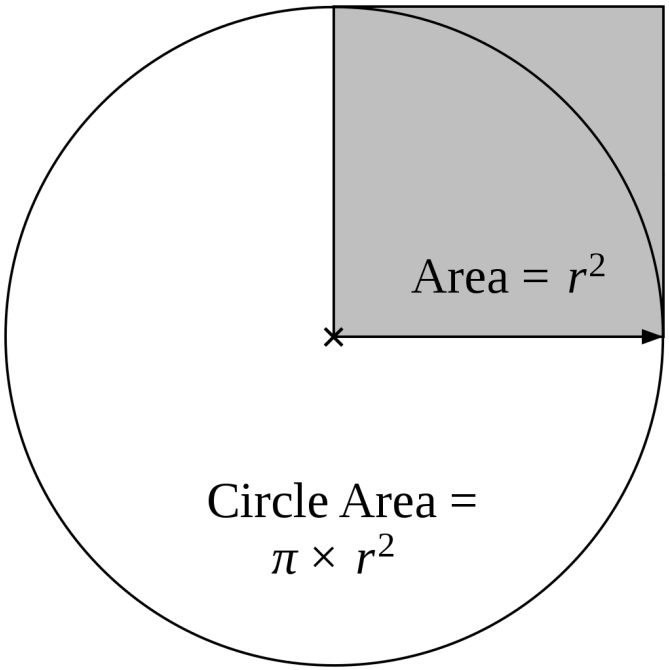
- Variable ?
- Data types
  - Integer
  - Float
  - String
  - Boolean

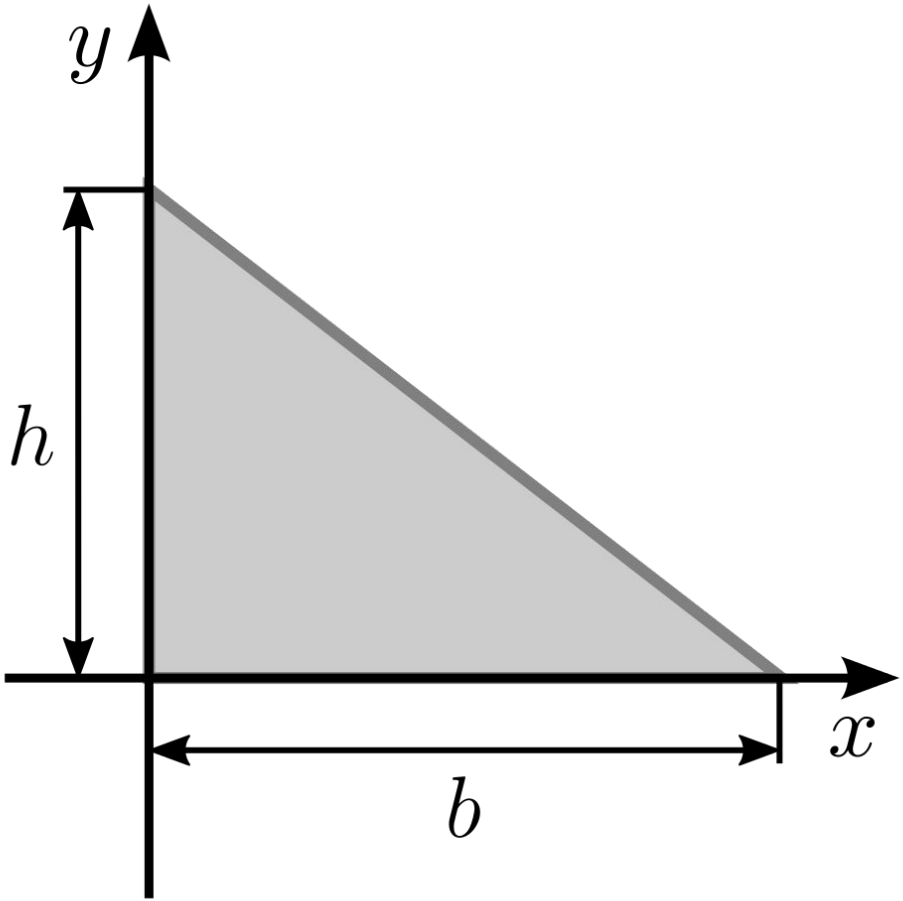
- named piece of **memory** that holds a value

Find the area of a square, each side is 9 cm.

Find the area of a circle whose radius is 5 cm.

Find the area of a triangle, base 3 and height 4.


Area = r^2
Circle Area =
$\pi \times r^2$


y
h
x
b

Symbol	Operator	Example	Result
-	Negation	-5	-5
+	Addition	11 + 3.1	14.1
-	Subtraction	5 - 19	-14
*	Multiplication	8.5 * 4	34.0
/	Division	11 / 2	5.5
//	Integer Division	11 // 2	5
%	Remainder	8.5 % 3.5	1.5
**	Exponentiation	2 ** 5	32

Create a program that reads two integers, a and b, from the user. Your program should compute and display:

- The sum of a and b
- The difference when b is subtracted from a
- The product of a and b
- The quotient when a is divided by b
- The remainder when a is divided
- The result of a^b

Conditions

Conditionals

- Conditionals : tools to test
- Comparison Operators သလား

== equal ညီသလား

!= မညီဘူးလား

> greater than ကြီးသလား

>= at most အများဆုံးဖြစ်သလား

< less than နည်းသလား

<= at least အနည်းဆုံး ဖြစ်သလား

A	B	A & B
False	False	False
False	True	False
True	False	False
True	True	True

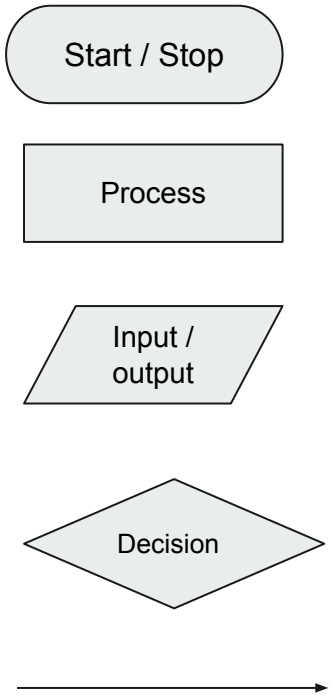
A	B	A or B
False	False	False
False	True	True
True	False	Ture
True	True	True

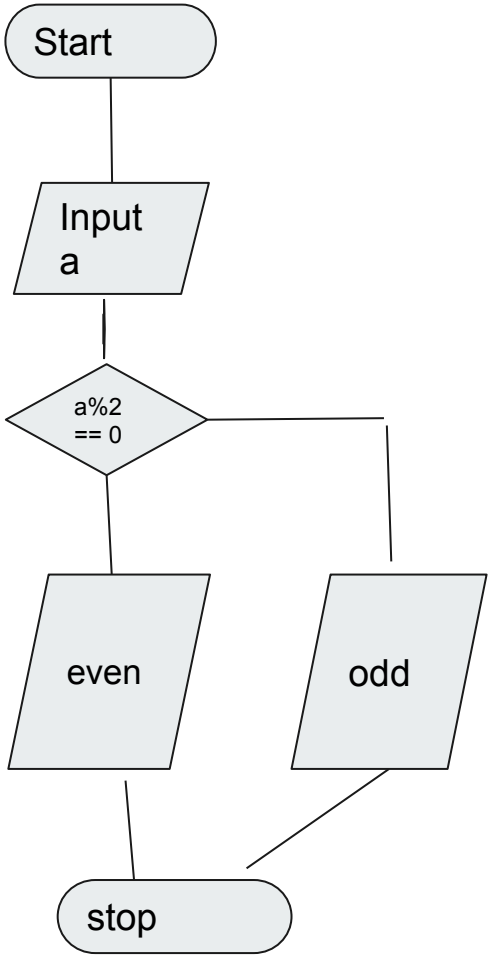
A	A!
False	True
True	False

- Write a program that reads an integer from the user. Then your program should display a message indicating whether the integer is even or odd.
- Create a program that reads a letter of the alphabet from the user. If the user enters a, e, i, o or u then your program should display a message indicating that the entered letter is a vowel. If the user enters y then your program should display a message indicating that sometimes y is a vowel, and sometimes y is a consonant. Otherwise your program should display a message indicating that the letter is a consonant.

Flow Charts

- a diagram that shows an overview of an algorithm.




Start
Input
a
a%2
== 0
even
odd
stop