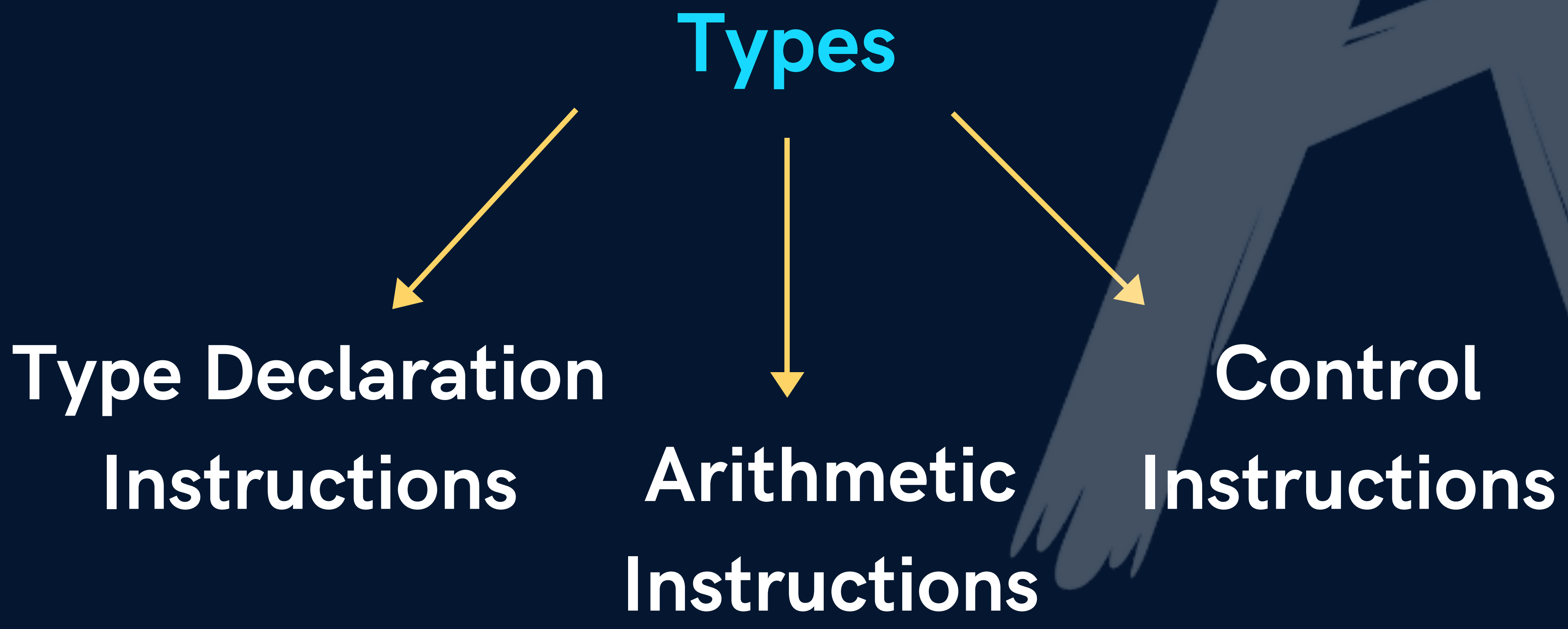
Instructions

These are statements in a Program



Types

Type Declaration Instructions

Arithmetic Instructions

Control Instructions

Instructions

Type Declaration Instructions → Declare var before using it

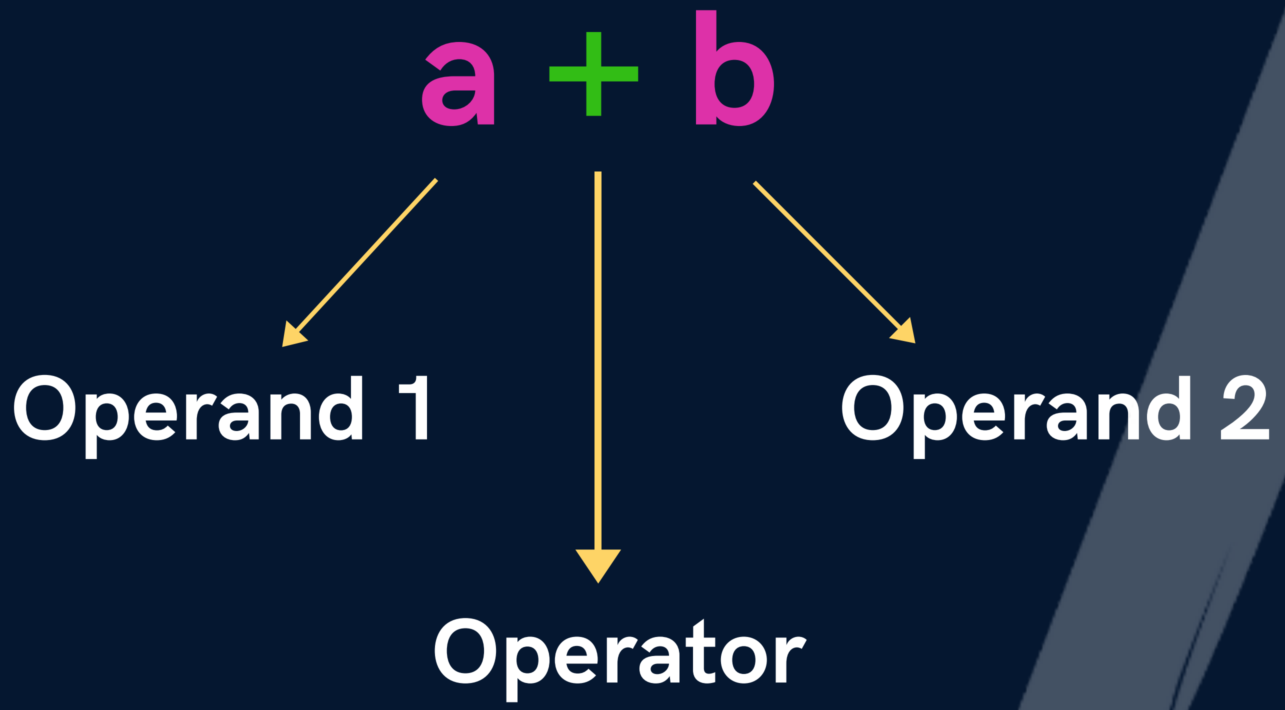
VALID

```
int a = 22;
int b = a;
int c = b + 1;
int d = 1, e;


int a,b,c;
a = b = c = 1;
```

INVALID

```
int a = 22;
int b = a;
int c = b + 2;
int d = 2, e;


int a,b,c = 1;
```

Arithmetic Instructions



a + b

Operand 1

Operator

Operand 2

NOTE - single variable on the LHS

Arithmetic Instructions

VALID	INVALID
a = b + c	b + c = a
a = b * c	a = bc
a = b / c	a = b^c

NOTE - pow(x,y) for x to the power y

Arithmetic Instructions

⭐ Modular Operator %

Returns remainder for int

3 % 2 = 1

-3 % 2 = -1

Arithmetic Instructions

Type Conversion

int op int → int

int op float → float

float op float → float

Arithmetic Instructions

Operator Precedence

*, /, %

↓

+, -

↓

=

x = 4 + 9 * 10

x = 4 * 3 / 6 * 2

Arithmetic Instructions

Associativity (for same precedence)

Left to Right

$x = 4 * 3 / 6 * 2$

Instructions

Control Instructions

Used to determine flow of program

a. Sequence Control

b. Decision Control

c. Loop Control

d. Case Control

Operators

a. Arithmetic Operators

b. Relational Operators

c. Logical Operators

d. Bitwise Operators

e. Assignment Operators

f. Ternary Operator

Operators

Relational Operators

==

>, >=

<, <=

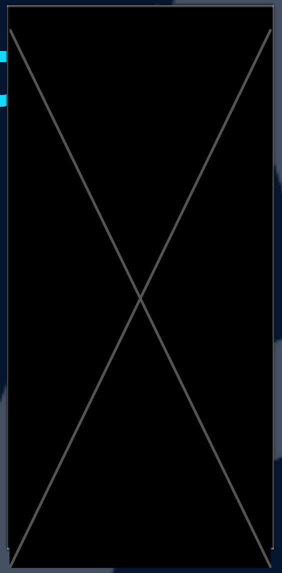
!=

Operators

Logical Operators

&&	AND
||	OR
!	NOT

Operator Precendence



Priority	Operat
1	!
2	*, /, %
3	+, -
4	<, <=, >, >=
5	==, !=
6	&&
7	||
8	=

Operators

Assignment Operators

=

+=

-=

*=

/=

%=