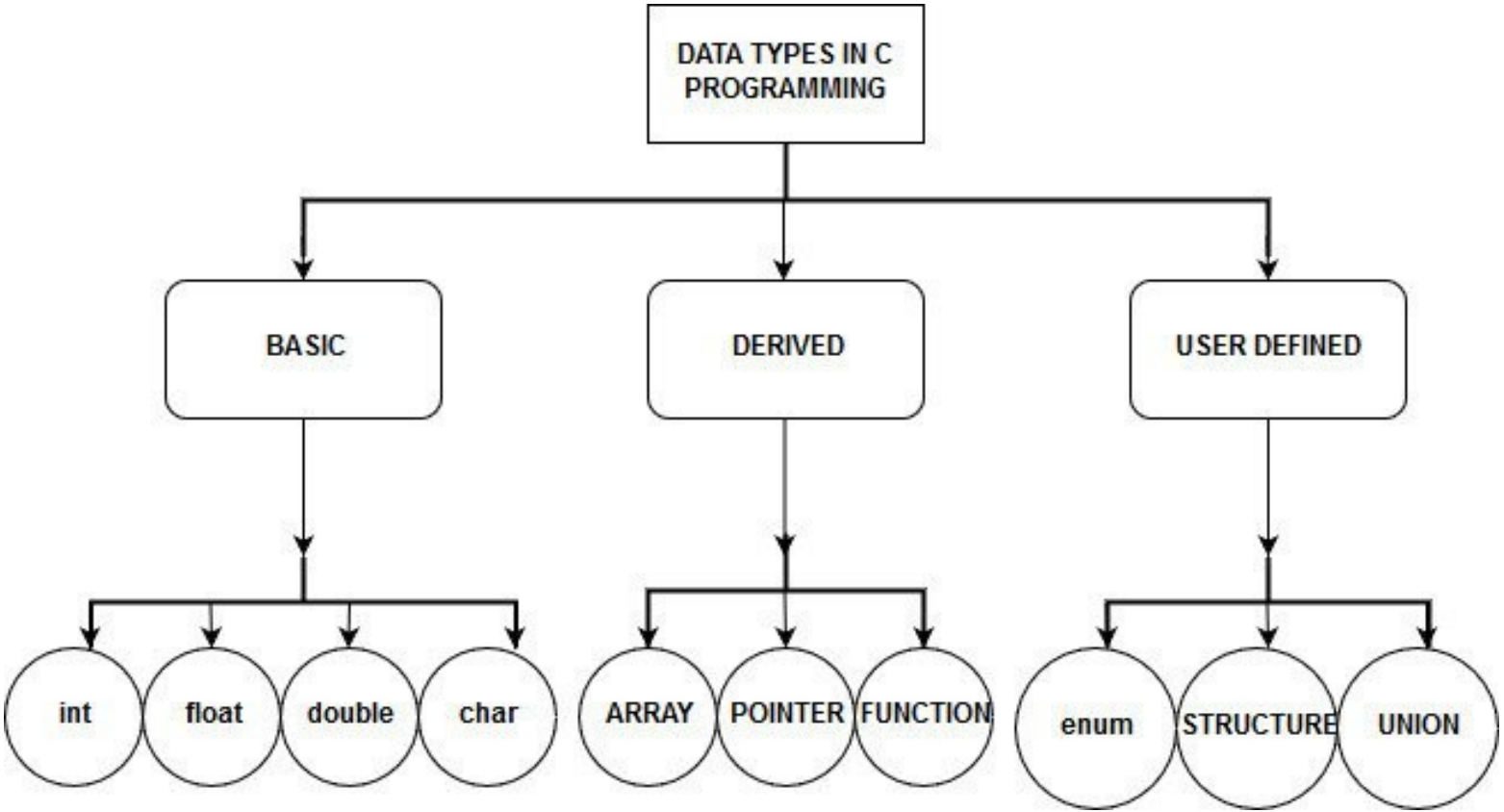
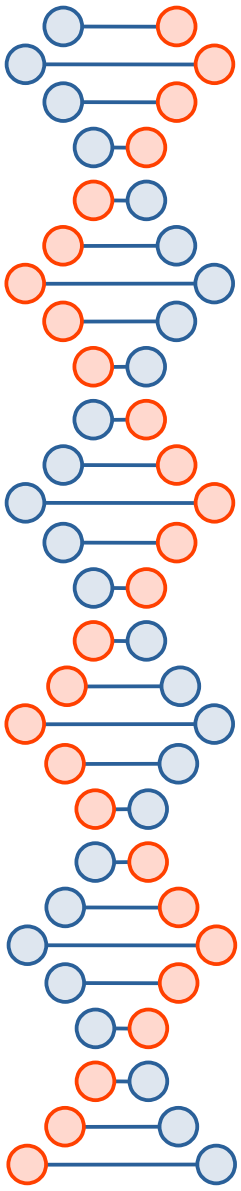
Data Types in C

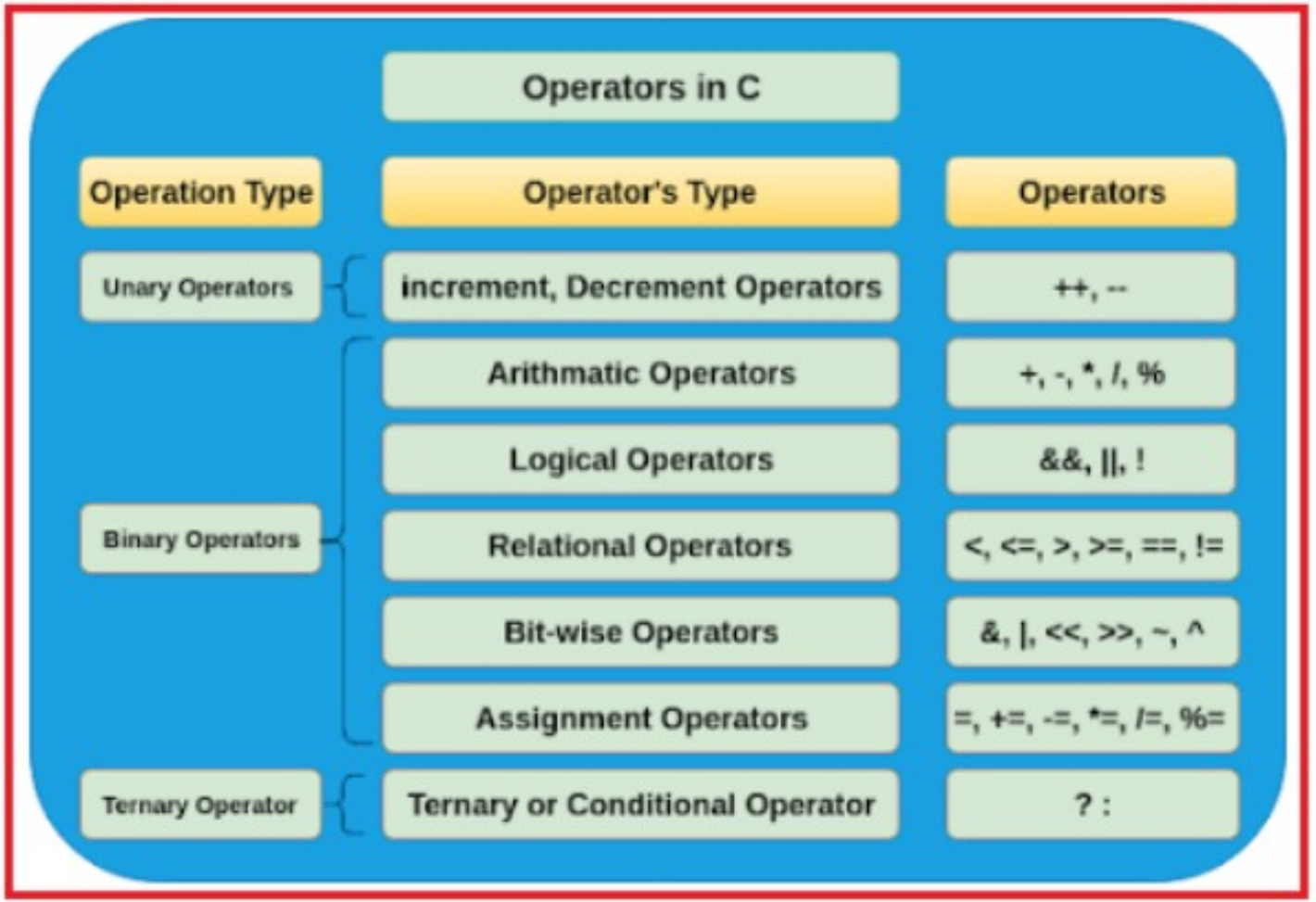


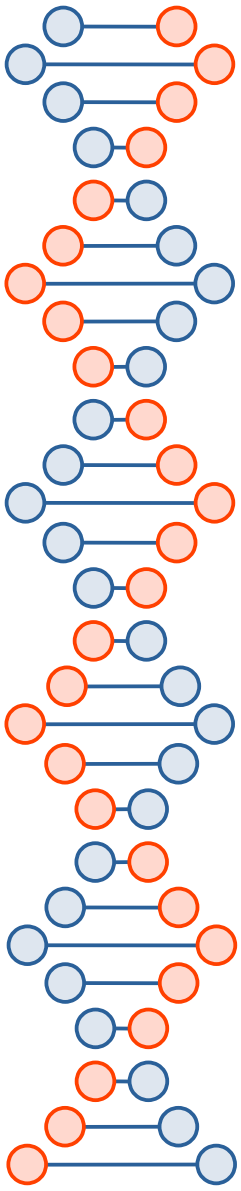


Data Types Range and Sizes

C Basic Data Types	32-bit CPU		64-bit CPU	
	Size (bytes)	Range	Size (bytes)	Range
char	1	-128 to 127	1	-128 to 127
short	2	-32,768 to 32,767	2	-32,768 to 32,767
int	4	-2,147,483,648 to 2,147,483,647	4	-2,147,483,648 to 2,147,483,647
long	4	-2,147,483,648 to 2,147,483,647	8	- 9,223,372,036,854,775,808- 9,223,372,036,854,775,807
long long	8	9,223,372,036,854,775,808- 9,223,372,036,854,775,807	8	9,223,372,036,854,775,808- 9,223,372,036,854,775,807
float	4	3.4E +/- 38	4	3.4E +/- 38
double	8	1.7E +/- 308	8	1.7E +/- 308

Operators in C





Precedence of Operators in C

Precedence	Operator	Description	Associativity
1	`::`	Scope resolution	Left-to-right

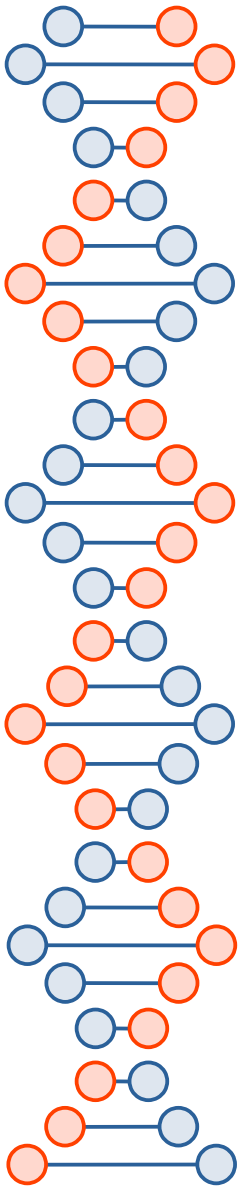
2	`++ --`
	`()`
	`[]`
	`.`
	`->`
		Suffix/postfix increment and decrement
		Function call
		Array subscripting
		Element selection by reference
		Element selection through pointer	

3	`++ --`
	`+ -`
	`! ~`
	`(`*type*`)`
	`*`
	`&`
	`sizeof`
	`new, new[]`
	`delete, delete[]`
		Prefix increment and decrement
		Unary plus and minus
		Logical NOT and bitwise NOT
		Type cast
		Indirection (dereference)
		Address-of
		Size-of
		Dynamic memory allocation
		Dynamic memory deallocation
			Right-to-left

4	`.* ->*`	Pointer to member	Left-to-right
5	`* / %`	Multiplication, division, and remainder	
6	`+ -`	Addition and subtraction	
7	`<< >>`	Bitwise left shift and right shift	
8	`< <=` `> >=`	For relational operators < and ≤ respectively For relational operators > and ≥ respectively	
9	`== !=`	For relational = and ≠ respectively	
10	`&`	Bitwise AND	
11	`^`	Bitwise XOR (exclusive or)	
12	`|`	Bitwise OR (inclusive or)	
13	`&&`	Logical AND	
14	`||`	Logical OR	

15	`?:`
	`=`
	`+= -=`
	`*= /= %=`
	`<<= >>=`
	`&= ^= |=`
		Ternary conditional
		Direct assignment (provided by default for C++ classes)
		Assignment by sum and difference
		Assignment by product, quotient, and remainder
		Assignment by bitwise left shift and right shift
		Assignment by bitwise AND, XOR, and OR
			Right-to-left

16	`throw`	Throw operator (for exceptions)	
17	`,`	Comma	Left-to-right



KEYWORDS IN C

auto	double	int	struct
break	else	long	switch
case	enum	register	typedef
char	extern	return	union
continue		for	signed void
do	if	static	while
default	goto	sizeof	volatile
const	float	short	unsigned