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Operators:

1) Arithmetic operator:

- Binary operator

$+, -, *, /, \%,$

operand 1 operator operand 2

e.g

$55 / 3 = 18$

$55.0 / 3 = 18.33$

Float is preferred because:

float
↑
int
↑
char
↑
Preference increases.

$\%$, mod operator only works for int types not float

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2) Relational Operators:

- Binary operators

$<, >, <=, >=, !=, ==$

$!=$: not equal to

$==$: equal to

- These operators give answer in terms of bool e.g

$(1800 < 2100)$, This will mean "1" value.

$(1800 > 2100)$, This will give 0 value.

we can use these instead of conditional statements.

e.g if question says, if fee greater than 5000 then tax of 1000.

$$\text{tax} = (\text{fee} > 5000) * (1000)$$

This will
give 1
if fee > 5000
and tax will
become 1000.

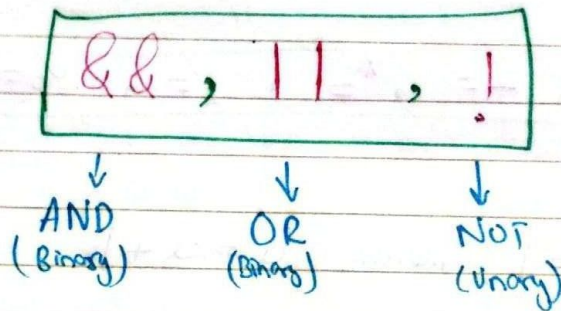
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3) Logical operators:

- Binary or Unary:

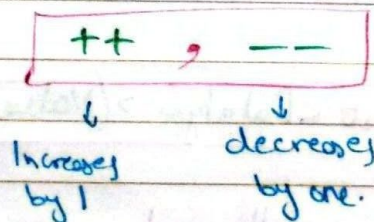


If condition:
($2 < 15$ || $3 > 15$)
if this becomes
true the
statements
after ||
is NOT
even run.

This is
called
short
circuit

4) Increment / Decrement operators:

- Unary



$a++$;
 $a = a + 1$;
 $a++ = 1$;

Same.

~~$a++$ means $a = a + 1$~~
~~but if we write~~
 ~~$cout << ++a$, then~~
~~this will print~~
 ~~$a + 1$ but not~~
~~change the value~~
~~of a .~~

$a++$ will show a first and then increase by 1
 $++a$ will increase a by 1 and then show it.

e.g. $a = 1$; $cout << ++a << a << ++a << a$;

Output: 1 2 3 3

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Type Casting

5) Combined Assignment operators:

$+=$, $-=$, $*=$, $/=$, $\%=$

$a += 1$, means $a = a + 1$

Type Casting:

- A type cast expression lets us manually promote or demote a value.
- general format:

$\text{static_cast} < \text{Datatype} > (\text{value})$

* Datatype, is the type you want to convert in.

* value is the value you want to convert.

* example next page.

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Day:

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```
1
2  int books, month;
3  float per_month;
4
5  cout << "How many books to reads the month:";
6  cin >> books;
7  cout << "How many month will it take to read all of them:";
8  cin >> month;
9  cout <<
10 per_month = static_cast <float> (books) / month;
11
12 cout << "That is " << per_month << " books per month:";
13
```

Line 10:

This will make sure that per_month gets an answer in float

e.g $\frac{\text{books}}{\text{month}} = \frac{5}{2}$, books will converted to float 5.0, so

answer = 2.5, instead of 2.

This all is way
explicit-type casting

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Precedence:

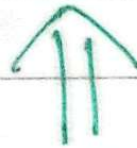
Unary operators (^{negation} -, ^{not} !)



Arithmetic operators (/, *, %, +, -)



Relational operators (<, <=, >, >=)



Logical operators (&&, ||)