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flowchart
↳ start ⟶ int main ()
↳ function
↳ entity which takes input and MAY provide output
↳ reusable

int main () ↳ syntax
↳ name of function

int main () {
}
} scope of main function

↳ return type ⟶ integer

cout ⟶ identifier

print ⟶ cout << "HI" ;
syntax string end of line

header file ⟶ iostream ⟶ import / include in order to use cout.

name space ⟶ portion / segment of code

iostream ⟶ cout
↳ which cout ?? (multiple exist)
↳ provide additional info
↳ i.e. use cout of std. namespace.

include ⟶ pre processor directive
↳ pre-requisite

endl ⟶ next line

\n ⟶ next line

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Room → Tanjavi → Pause
↓ ↓ ↓
iostream namespace cout

cin → input
↳ character input

data type
↓ ↓ ↓ ↓ ↓
int char float double void

int marks = 90; → termination
type ↵ ↓ ↳ value
of data assigned
name
(variable)
↳ assignment

variable → name assigned to a memory location.

1 byte → 8 bits
int → 4 bytes
char → 1 byte

int a = 5
↳ a block of 4 bytes created in memory with name 'a' and containing value '5', at any given address

void → empty

data type
↳ type of data
↳ space occupied by data

int num; → declaration
int num = 50; → initialization.

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size of → size of data type
↳ machine dependent

every character is mapped to a value called ASCII value

Boolean
flag → T/F
↳ 1 byte → 8 bits
↳ takes 1 bit → 7 wasted
↳ smallest addressable space.

1's complement → 0 → 1 , 1 → 0
2's complement → 1's complement + 1

101 → 010
+1
011

1011 → 0100
+1
0101

1000 → 0111
+1
1000

-ve integer → ignore -ve sign
↳ find binary equivalent
↳ take 2's complement

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8 bits → 0 → 255 → 1 byte char
32 bits → 0 → $2^{32}-1$ → 4 byte int.

signed vs unsigned
- signed
  - can store 0, -ve & +ve data
- unsigned
  - can store 0 and +ve data

-ve numbers
- first bit 1

+ve numbers
- first bit 0

Operators
- arithmetic
- relational
- logical.
- assignment
- Bitwise