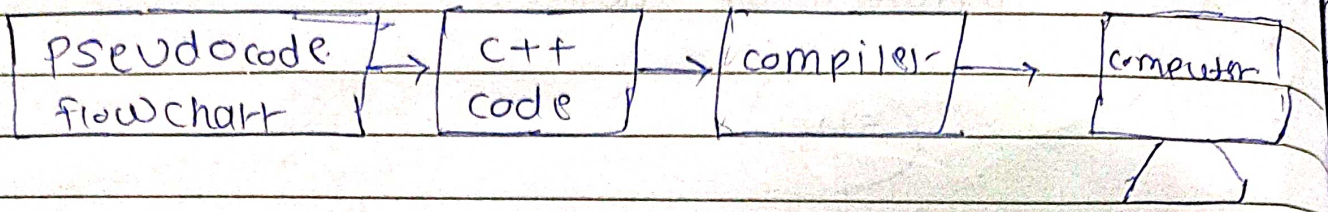
Page No.
Date

Start C++ from Zero.

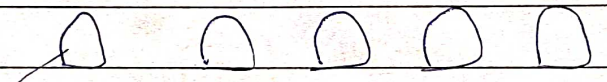


compiler uses

1. convert code to binary.
2. check code error.
3. optimization of code.

* How transistor store data:

5 ⇒ 101



1 Bit → 0 0 1 0 1 → compute.

1 - Bit = smallest unit.
8 bit = 1 byte
(2^{10}) 1024 byte = 1 kb
(2^{10}) 1024 kb = 1 mb.
(2^{10}) 1024 mb = 1 GB
1024 GB = 1 TB
1024 TB = 1 PB.

⇒ 4 store करना है

1. 4 - binary - 100

⇒ Transistor.

Select

Page No.
Date

⇒ But we want to stor A (rather than number. How 'A' store in teangistor.

① A → Binary conversion ✗
by ② Asci comes into picture.
② It allocate 65 as value. then convert into binary.

⇒ ASCII Table :- ⇒

⇒ 65 - A
90 - Z
97 - a
122 - z
20 - Space

```
char ch = 'A';
cout << int(ch) // we get ASCII value.
```

Write a first code :-

```
#include<iostream>
using namespace std;
int main()
{
    std::cout << "Hello";
}
end.
```

start →

std को पता है कोनसा भी namespace है।

Variable and data type:

We use following to communicate 2 person.

Alphabets
Char : a, b, C
number : 1, 2, 3, 4, 5.
word : How are you.
: yes or No (Gesture)

सबसे पहले computer को पढ़ाना पड़ेगा।

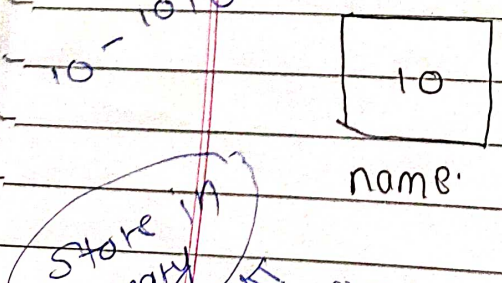
Number :-

① INT : 1, 2, 3, 4
② Floate : 1.1, 2.8, 3.68
③ double : 1.234, 2.685.

④ char : a, b, c
⑤ steing : How are yo
⑥ Boolean : yes or No.

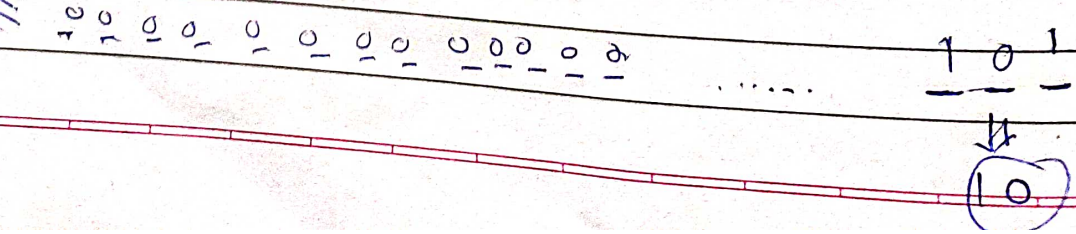
Variable :-

```
int Name = 10 ;
data   variable.
```



① 4 byte = 32 bits

Store in binary

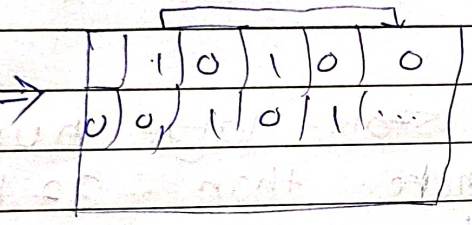


⇒ Indigo seat example.

① Why are required 32 bits instead of taking only 4bits store:

⇒ ① we make some standard fixed if we want store large number then we can easily store.

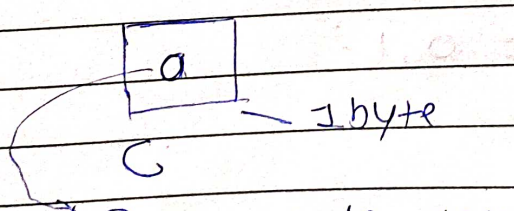
main reason :- It easy to compiler to read number from 0 bit - 32 bits @in int case.



⇒ How compiler know where to stop i.e why we used fixed size.
So compiler read upto 32 bits.

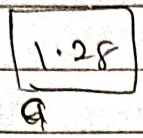
⇒ Character :-

char 'c' = 'a';



① calculate ascii value 97
② convert into binary and store.

(3) Float a = 1.28

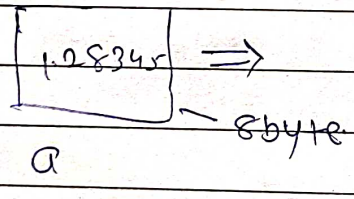


(4) double a = 1.28345...

① If float is present to store decimal value then why we need double?

⇒ we want to store large number which can make than 32 bits then we need addition bits to store it is why ~~float~~ double comes.

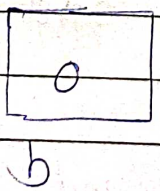
- double a = 1.28345



⇒ 8×8 = 64 bits

(5) Boolean:

boolean b = 0, 1;



* Why we use boolean instead of integer:

⇒ main reason is to save memory. boolean takes only 1 byte.

Page No.
Date

⇒ How to store negative number.

int a = −5, −6

−2 ⇒ 0 1 0 ⇒ 2 binary
1 0 1 1' compl
\+ 1 2' compl
1 1 0 ⇒ −2

−5 ⇒ 1 0 1
0 1 0 1's com
\+ 1 2's
0 1 1 ⇒ −5

−3 ⇒
Step 1 ⇒ 3 binary of 3
(2) ⇒ 1's complement
(3) ⇒ 2's complement

ये सब करना पड़ा क्योंकि 0 को 2 val[illegible] mil rah[illegible] thi[illegible]

1000 1001

⇒ How to take input from user.

⇒ cin >> a >> b ;

⇒ operator :

a = 10 → assignment

2+2 == 4 → comparison.

⇒ Typecasting :

int a = 10 ;
char c = 'b' ;

int a = 10 ;
a = c // a = 98

c = a // Ascii variable on 10 positio

⇒ Type casting से data loss हो सकता है

int a ; 32 bit
double d = 2387.934 ;
8 bytes.
64 bit

d = d ⇒ 64 bit ⇒ 32 bit में डालना

(2) [2648] int a {c = a}

['b'] c

→ 00000 | 10110110 | ← इतना ही store कर सकता है

बाकी data loss होता है।

No data loss

⇒ bool → char → int → double

data loss.

double → int