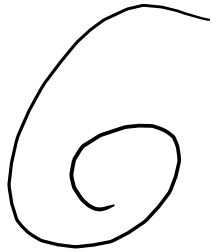
Let’s solve it



Derived Data Type

new → typedef (type define)

Age in number of years

int page, page;

or

int p1, p2;

typedef int age;

↑ new datatype for your program

age p1, p2;

Developer friendly

store marks

float m1, m2;

typedef float marks;

marks m1, m2;

✓ more developer friendly.

---

typedef int age;

typedef int salary;

age p1, p2; salary s1, s2;

int if (p1 > s1)

mech #2

to store a day

A1 ⇒ use character

char givenDay; givenDay = 'M';

Assignment op^nr

A2 ⇒ "Sunday", "Monday" ← called strings.

To discuss later

A3 enumerator

keyword is enum

A numbered list for known values.

```
enum day { sunday, monday, tuesday,
           wednesday, thursday,
           friday, saturday };

int main()
{
    day businessClosedDay;
    businessClosedDay = sunday;
}
```

0 1 2 3 4 5 6

name of datatype

Note that there are no double quotes here.

enum type {value1 = 5, value2, v3 ...}

↑ 6 ↑ 7

We can starting value as above 5

But by default it starts from 'zero.

---

day dx = friday, dy = tuesday;

dy - dx ; 2 - 5 ⇒ -3

Symbolic constants

```
#define PI 3.14159
```

(1) For readability

(2) Modifiability

Scenario 1:

```
L#1    PI
 :
 5     PI
 :
 9     PI
```

To avoid magical numbers

365 ✓

3.14159 ✓

29 ?

User defined data types

- struct - union keywords

2nd session

Ansi C doesn't have boolean as a datatype.

false – zero
true – Nonzero } For C language

---

enum bool { true, false };
0 1

enum bool { false, true }; better choice

overflow of datatype

2 bytes

signed int

-32768 to 32767

32767 + 1 ? overflow

⇒ -32768

$-32768 - 1$ // underflow

$\Rightarrow 32767$?

Puzzle (Rethink)

You have 3 litre & 5 litre capacity size jugs. You have unlimited water supply. Give me 4 litre measured water. How will you do this?

Movie: Die Hard, Challenge to hero.