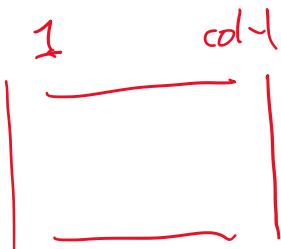


Lecture 16

Thursday, October 13, 2022

10:58 AM



fgetc / fgetss / fwrite / fprintf

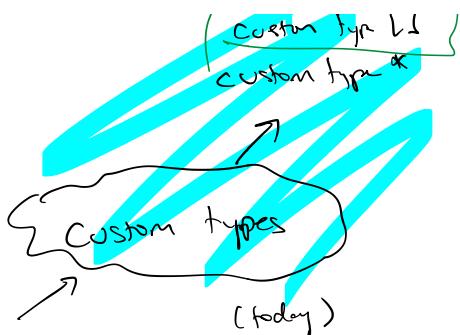
fputc / fputs / fread / fscanf

char at string / binary
a time line of data
a time formatted

'a'

Objects C++

Our type journey



MD arrays
int[], char[], ...
int*, void*, ...

Custom type constructs

- enum
- struct
- union
- typedef

enum (enumerated type)

```
#define CLUBS 0
#define DIAMONDS 1
#define HEARTS 2
#define SPADES 3
```

cardSuit = DIAMONDS;

switch (suit) {
 case ... : ... break;

L ~~#define SPADE~~
 can choose ... - ,
 }
 enum Suit { CLUB, DIAMOND, HEART, SPADE };
 enum Month { JAN=1, FEB, MAR, ..., DEC }; *int Month = OCT;*
 printf ("%d/%d", mon, day [+1]);
 enum Confusing_Numbers { ZERO, TWO=1, ONE, THREE, FOUR=6, FIVE=7 };

start from 0 and incr. by 1 unless =

Struct (Structures)

arrays are homogenous types

Struct Student { *new datatype*

char name [128];
 char lecture;
 char discussion;

in memory,
these "fields" of
each struct are

char
 char major [32];
 int MP_scores [12];
 int exam_scores [3];
 int quiz_scores [7];

basically contiguous

}

Fields referenced w/ .

struct Student me = { "Vik-Chen Hu", '2', 'Z', "student pain"
 { 100, 100, 100, 100, ... 3 } };

type

struct Student class(400);

(fun note: FILE is a struct
(usually))

Union (one field at a time)

Union Number {
 void *ptr-form;
 int int-form;

overlapping
storage

```

    float float-form)      read a field float is
    };                      not the most recently
    enum which_Num { INT,FLOAT}; assigned one, result
    struct TypeNumber {      is implementation-defined.
        enum which_Num type;
        union Number n;
    };

```

union Number pi;
pi.float-form = 3.14159;

float x = 4;

& (int *) &x

typedef

```

typedef      (old type name)      new type name
typedef int   blank;
typedef struct student student;
typedef struct {
    char    name[128];
    :
    int    quit_code{7};
} student;

```

max3

_3

Local var

local → global

on

→ static
↳ not static → automatic (stack) → init. yourself
Global var → global

→ init to 0 automatically