

Σ

* int main () {

 printf("Hello world");

} // End of main function

The main code is here

Any instructions should end with it

}

printf("Hello world!");

We will talk about it later.

Build & then run

Variables: we are dealing with Data

↳ are like containers that can

store different pieces of information

① what type of information we want this var.

For name: char

char CharacterName Eg = "John";

printf("My name is %s", characterName);

For number:

int age = 35;

printf("My age is %.d", age);

اندلسية

So we will go to data types

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Data types.

1) numbers.

int { د } { رقم صحيح }

float { F } { رقم كسري }

double { LF / lf }

{ *with Scanf *

2) Characters.

Char % C is a Character

for ex | Char Name = 'A'

so for more 1 Character we can add space also

Char ' '

for ex Char Name[] = "Nasser";

we name is array

char -> statement

char " " (empty) " " it's true

• ٢٤ = ٩٨٠ + ٦١

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How Can I name variables ,

* the variable should be like

① ✓ X1 ; / X01 ; X is wrong

we shouldn't put space in it

② ✓ X13 ; / 1X ; X is wrong

we should start with character

③ ✓ X_1 ; / -X ; ✓

we can use only " - " in special symbols

" - " X X % ; / X \$; X

④ ✓ INT ; / int ; X

But don't do this

we prefer the name of variables

Be Capital.

animal

language

time

tail

slimy

name "animal" (capitalized) is wrong

name "animal" is wrong

name "10.5" is wrong

* Commands , * Functions in the system

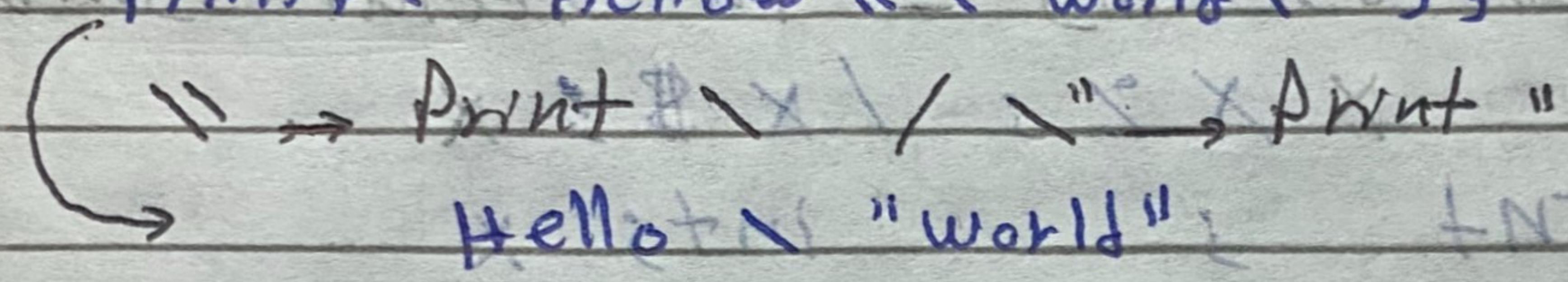
3) printf

printf ("Hello world");

We can use special symbols and characters

\n → start a new line / \t → create 8 spaces

printf ("Hello \n \" world \" ");



* To make the printf collect a number or a character

from Variable we should use "Format Specifiers"

* Format Specifiers

%d → int

%c → char c

%f → float

%s → char string

%lf → Double

printf ("My favorite %s is %d", "number", 500);

→ My favorite number is 500

printf ("% .2f", 50.555);

50.56

مخرجات المتصفح

عرض

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 $\text{int} * \text{int} = \text{int}$ $\text{float} * \text{int} = \text{float}$ $\text{float} * \text{float} = \text{float}$

{ }

Multiplication

يأخذ المدخلات $\text{printf}("xf", 5/u)$ → 1

أو:

2f

→ 1,25000

Sqrt(36) → 6Pow(2, 3)Ceil(36, 356) → 37

+ni

 2^3 Floor(36, 656) → 36

+ (f + m) 9

There are a lot of functions so you will find it in my Pe

**Include <math.h>

i++

i -

i += 5

How to do Comment in Your Code

~~text = text * text~~

~~/*
* /~~

~~text = text + text~~

~~* / → for more then 1 line~~

~~// → for one line~~

Constants

~~int x = 5; // code here~~

~~printf("%d", x); // code here~~

~~x = 6~~

~~and now printf("%d", x);~~

~~5~~

~~If we put it in the first line, we can't run the program~~

~~because const int x = 5;~~

~~Because the number can't change and the program will find an error.~~

~~i = 1~~

Get input from user "Scanf"

First we should have a variable to store the input

int x; Scanf ("%d", &x);

datatype ↴ ↴ state in x
A Address ↴

1 thus for numbers & characters

Let's string,

char name[20];

لارم دمحج ملارم

Scanf ("%s", &name);

X In string we don't use []

printf ("Your name is %s, name);

Mohamed

= مايكل

Mohamed

سما

Nasser

String with Scanf stop with first space

So we use,

واعمل جهاد

f gets (name, 20, stdin);

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~~if you need to enter 2 numbers together~~

Acknowledgments and thanks

$s \text{Conf}("z_1" \& "z_d", g[x, y])$,

K. M. G. 19

L. A. M. L.

SISSETTA

Indonesia. A. M. H. I.

Wing and S. F. Miller

14-10-1960

$\text{Ca}_3(\text{PO}_4)_2 \cdot 2\text{H}_2\text{O}$

L-Bel

1 student, 21st zonation atop "J. ShandA

L.N. DeMolay, M.

49280M

On the

U.S. Geological Survey
Geological Map

20 de Septiembre Ano 2002 Atmico

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Arrays ، استخدمنا لاره ممكنا ذخراه حاجات سيرفي

Normal Variable في حاسه واحدة من دوال

How to Create Array? \rightarrow Array

int/float/double \rightarrow لوكس ذخراه ار فاعلم

Char \rightarrow لوكس ذخراه حرده

String \rightarrow لوكس ذخراه سلاسل

int Lucky Numbers[] = { 4, 8, 15, 16 };

Array \rightarrow مكتوب اور

لارزم ذخراه لار

* int Lucky Numbers[5]; *

احباري

printf("zd", LuckyNumbers[0]);

ز ("zd") \rightarrow 4

3 ([] موند جون) \rightarrow float

if (num < 20 & num > 10) printf

Functions

Void

SayHi()

Defined

printf("Hi")

Main

Code

we should Call it to start work

* we can add Parameters

* It's a variable that can be used in function

* int main()

{ : (Introduction) , "if")

SayHi("Mike");

return 0;

}

Void SayHi(Char Name[]){

printf("Hello %s ", Name);

}

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لقد سبقتكم الـ return \Rightarrow nice Function \Rightarrow value \Rightarrow Prototype \Rightarrow math

Defnition \Rightarrow function \Rightarrow ٩٢

double \Rightarrow double \Rightarrow ٩٣

double result = num * num * num;

return result;

double cube (double num) \Rightarrow Prototype \Rightarrow just math ()

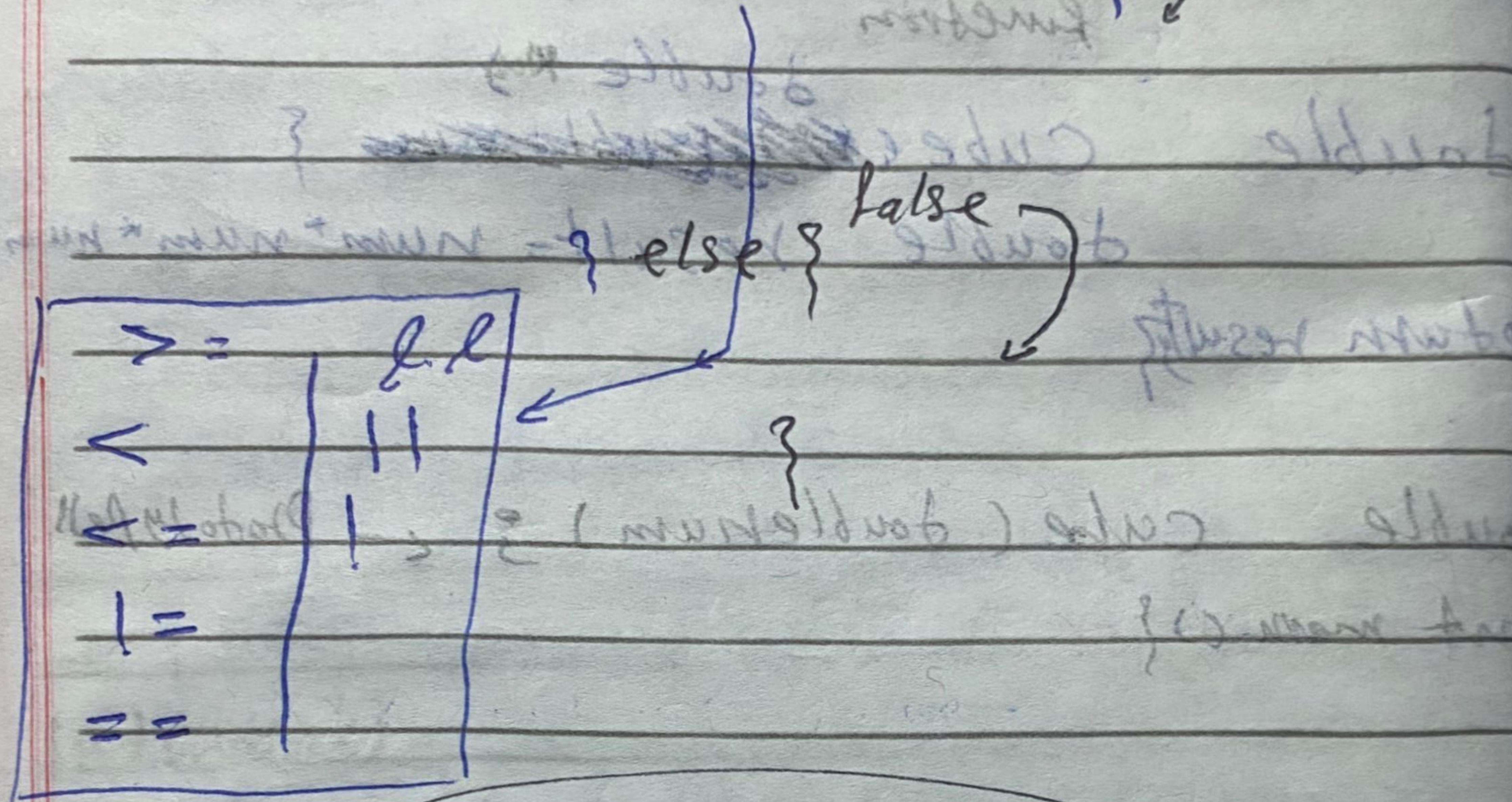
("Hello")

say ("Hello") + " and " + ("C") \Rightarrow ٩٤

4/10/2021

IF Statements

IF (Condition)



IF (3>2) {

 printf("true")

 printf("false")

}

printf("%s", (3>2)? "true": "false"); is
IF shortcut

switch Statements (Specialty Period)

{ تسلیط تسلیط

Switch (grade) {

Case ('A') :

printf("good");

Break ;

Case ('F') :

printf("bad");

Break ;

Default = else statement

printf("not good and not bad");

} ("break") ("non-default") ("good")

لوعي حس اهميّة Break if case

: statement

}

< d-break > | > u break > و

() () () () () ()

lessing o

reciting

less

الدستيّة

of power () ← ()

Struct, like array but it separates for data.

```
Struct Student {
    Char name[50];
    Char major[50];
    Double gpa;
};

int main() {
    Student student;
    student.name = "Mohamed";
    strcpy(student.name, "Mohamed");
    printf("%f", student.gpa);
    return 0;
}
```

Struct Student

Student1.gpa = 3.6;

XXXX Student1.name = "Mohamed";

→ strcpy(Student1.name, "Mohamed");

printf("%f", Student1.gpa);

return 0;

}

We Should use |<string.h>|

strcpy(?, ?) / strlen()

strstr(?, ?) / strcmp(?, ?)

الخدع

لورى عرض

I > I لورى

I > I لورى

اندلسية

* tolower()

Convert to Lower Case

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While Loop

int x

while (condition) {

حالة

شرط

{ (++i ; something ;)) ; }

من يابس x++ حكرا

}

ملاحظاتي ← من حارف النهاية والبرادعى الى
برادعى

while (i) {

لو شعرت النهاية

Breaks

Breaks

}

do {

I + will

done one

time at least

} while (condition);

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For Loop

x Anti

Good style

for (int i ; condition ; i++) {

initialization condition increment

{

الخطوة الأولى : تحديد شرط التكرار

second step

we can use for (; ;) instead

third step like while ()

new + I

no end

to exit

} of

: (condition) & { new { } }

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2D Array & Nested loops

int nums[3][2] = {

{1, 2},

{3, 4},

{5, 6}

printf("%d", nums[i][j]);

↳ 4

for (int i = 0; i < 3; i++) {

 for (int j = 0; j < 2; j++) {

 printf("%d", num[i][j]);

}

 printf("\n");

}

↳ 108 - 900 tni

{ 108 * tni } + 900 = 908 + tni

↳ 900 - 908

↳ tni

↳ 908 + tni

↳ 908 - 908

↳ 0

↳ 0 - 908 +

(908)

Memory addresses:

`int age = 30;`

`printf("%p", &age);`

→ refers to Pointers

→ to show the memory address

Pointers → type of data

→ refer to a Physical address inside of the memory

* We can Create a Pointer Variable to store memory address. (Like we create "char to store character and number")

`int age = 30;`

`int *PAge = &age;` } or `int * PAge;`
PAge = &age;

Note: If we do that.

`int age = 30;`

`int *PAge;`

`PAge = &age;`

`*PAge = 5;`

like we say

`age = 5;`

age will be 5

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لaser

I have Said

* `printf("%P", PAGE);` ✓

that's correct (it means $\rightarrow \underline{\text{age}}$)

* `printf("%P", *PAGE);` X

(- -) we should say $\star \rightarrow \underline{\text{age}}$

→ `printf("%d", *PAGE);`

→ ("Dear", "txt.2001900") - ~~msg1~~ *

* e بيلخوا يعنى

داتا فارج - داتا فارج

لهم الله

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لهم الله

أنت أنت نور نور نور نور نور نور نور

لهم الله

لهم

Date

/ /

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Writing files

```

int main() {
    FILE * pPointer = fopen("-", "-")
    * pPointer = ("employees.txt", "mod")
    a
    pPointer
    fclose()
}
  
```

الخطوة الأولى لفتح الملف

* `fprintf(pPointer, "Jim, salesman\nPam");`

w → لـ `fprintf` = لـ `write`

overrides new value overwrites old value

a → - adds new

- creates

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* reading files :

```
int main()
```

```
    char Line[255];
```

```
    FILE *fPointer = fopen("MN.txt", "r");
```

```
fgets(Line, 255, fPointer);
```

```
printf("%s", Line);
```

مخرج ادخل سطر
كتورى الى

```
fclose(fPointer);
```

```
return 0;
```

```
}
```