**The Main Information**

For Speak With Comuters We Have To Learn A Programming Language , That Is Crafting From English Language And The Computer Doesn’t Understand Our Language , So We Need A Compiler Wich Understand Binary And English .

For Make A C File , The File Must Be With .C Extention

------------------------------------------SYNTAX----------------------------------------

  int main (void){

   //code

  }

int main (void) 🡺 green flag in scratch Une image contenant texte, meubles, fauteuil

Description générée automatiquement

in curly braces we write the code , but you have to declare first in which libary you git the code , so syntax become :

 #include <stdio.h>

  int main (void){

   //code

  }

For start the programme you must transform the C file to a file that computer inderstand « binary » , in terminal write :

$ make file-name (without extension)

$ ./file-name (also whitout ext)

in the file that you create there is binary code

NOTE : this method of compiling isn’t the main method, but this is crafted by cs50 for student (in the next week will learn compiling)

**Function PRINTF("write what you want") ;**

**for return to new line "\n"; 'back slash n’**

Stdio.h 🡺 standard input output

It priciple libary in C language as its named refer

**-------------------DataTypes-------------------------**

**1**. bool (true,false) ==> 1 byte

2. int (integer) ==> 4 byte

3. long ==> 8 byte

4. float ==> 4 byte

5. double ==> 8 byte

6. char ==> 1 byte

7. string ==> ? byte (we dont know , it depends ! )

(it's not a type of date )

**--------------------------------------------**

For declare a variable , first you have to specify its types then its name , don’t forget to put at the end ; wich mean that you finish

Float x ;

int Y=5;

sure you can give the variable an intial value or not , and sure you can change this value anytime

Take A Value From The User

Use : get\_int(‘‘message’’) ; / get\_float(‘‘message’’) ;

But this commands is in cs50 libary so we have to call it

#include <stdio.h>

 #include <cs50.h>

  int main (void){

  int x=get\_int("X:");

  }

Print a variable

%i 🡺 int

%f 🡺 float

%d 🡺 double

%s 🡺 string

%c 🡺 char

%l 🡺 long

 #include <stdio.h>

 #include <cs50.h>

  int main (void){



  int x=get\_int("X:");

  printf(" the X equal %i \n" ,x);

  }

%i mean that after ‘’ we have a variable

Its types is int

 #include <stdio.h>

 #include <cs50.h>

This is how to print multiple variables

  int main (void){

  int x=get\_int("X:");

  float y=get\_float("Y:");

  printf(" the X equal %i and Y equal %f \n",x,y);

  }

Operation on variables

 #include <stdio.h>

 #include <cs50.h>

  int main (void){

Here we do one %i because the operation will give us one number

  int X=get\_int("X:");

  int Y=get\_int("Y:");

  printf(" X + Y = %i \n",X+Y);

  printf(" X - Y = %i \n",X-Y);

  printf(" X \* Y = %i \n",X\*Y);

  printf(" X / Y = %i \n",X/Y);

  printf(" The rest of dividing X on Y = %i \n",X%Y);

  }

Note : if x=0 so 🡺 x++ = 1 and x-- = -2

 #include <stdio.h>

 #include <cs50.h>

  int main (void){

  int X=get\_int("X:");

X+= « the number that i want to add it to X

Y-= «  the number that i want to substract it from Y

  int Y=get\_int("Y:");



    X+=5;

    Y-=5;

  printf(" the new X  = %i \n", X);

  printf(" the new Y = %i \n",Y);

  }

Constante value

 const X=5;

we can’t modify on constante value

const pi=1.14;

Dividing Problem

#include <stdio.h>

 #include <cs50.h>

X = 3

Y = 10

X/Y = 0

  int main (void){

    int X =get\_int(" X: ");

    int Y =get\_int(" Y: ");

    printf(" X/Y = %i \n",X/Y);

  }

**Very Important Note : integer / integer = integer**

**So no true result in some cases , so we have to make one of them float , for make our result true in all cases and more exact**

 #include <stdio.h>

X = 10

Y = 3

**X/Y = 3.333333**

 #include <cs50.h>

  int main (void){

    int X =get\_int(" X: ");

    float Y =get\_float(" Y: ");

    printf(" X/Y = %f \n",X/Y);

  }

But the problem is that you can’t change the type of the variable (because you need it as an int variable ) 🡺

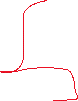
 #include <stdio.h>

 #include <cs50.h>

 printf(" X/Y = %f \n", (float)X/Y) ;

  int main (void){

    int X =get\_int(" X: ");



    int Y =get\_int(" Y: ");

    printf(" X/Y = %f \n", (float)X/ (float)Y) ;

  }

The variable X and Y are Float in the Printf function only , we can just one variable float . either float or double has it capcite to save the number but double can give more digets becaue it can save 8bytes .

If the result is important and you need an exact result use doube better than float , athoug double also isn’t enought