# Práctica 01. Variables en C++

Definir variables en C++

U.A.Q. Fac. de Informática

**Dra. Sandra Luz Canchola Magdaleno** 

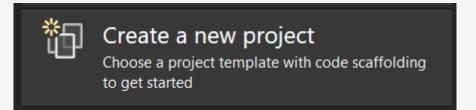
Correo: sandra.canchola@uaq.mx

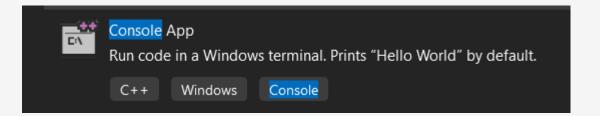
Dra. Reyna Moreno Beltrán

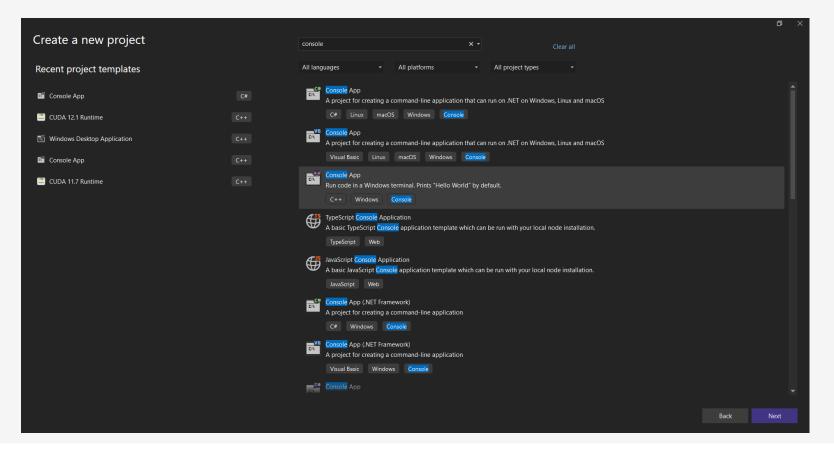
Correo: <a href="mailto:reyna.moreno@uaq.mx">reyna.moreno@uaq.mx</a>



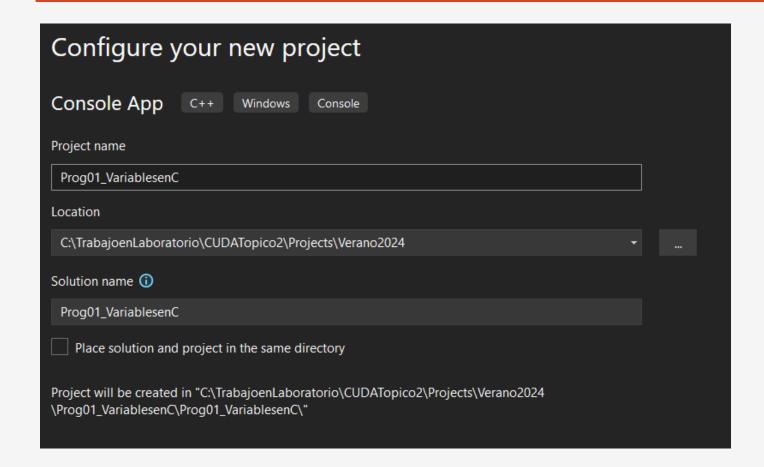
### Crear un C++ Console App

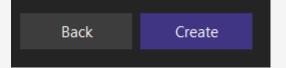






### Crear un C++ Console App





#### Comandos

#### Definir un apuntador

```
Type* pointerName;
Ejemplo:
int* aPtr;
```

# Definir un apuntador y asignarle una dirección de memoria

```
Type* pointerName= &variable;
Ejemplo:
int* aPtr= &a;
```

## Conocer la dirección de memoria de una variable

```
Ejemplo:
```

&variable

## Obtener/modificar el contenido de una dirección de memoria

```
*pointerName
Ejemplo:
*aPtr
```

\*aPtr=25;

### Memoria

#### CPU (Host)

A01	a	10
A05	b	20
A10	C	
A15	f	205.78
A20		
В01		
В05		
В10	aPtr	A01
B15	bPtr	A05
В20	cPtr	A10
C30	fPtr	A15
E07		
E10		

### Código

```
Program 01 Variables
// Autor: Sandra Luz Canchola Magdaleno
// Email: sandracanchola@yahoo.com y
//
        sandra.canchola@uaq.mx
#include <iostream>
using namespace std;
int main(int argc, char* argv[])
         int a = 10:
         int b = 20;
         int c;
         float f = 205.78;
        int* aPtr = &a;
        int* bPtr = &b;
         int* cPtr = &c;
         float* fPtr = &f;
         cout << "=========n";
         cout << "The sum of " << a << " + " << b << " = " << a + b << "\n";
         cout << "The value of f is " << f << "\n";</pre>
         cout << "==========\n":
         cout << "The memory addresses of the variables are:\n";</pre>
         cout << " A) a is: " << &a << "\n";
         cout << " B) b is: " << &b << "\n";
         cout << " C) c is: " << &c << "\n";
         cout << " D) f is: " << &f << "\n";
         cout << " E) aPtr is: " << &aPtr << "\n";</pre>
         cout << " F) bPtr is: " << &bPtr << "\n";</pre>
         cout << " G) cPtr is: " << &cPtr << "\n";
         cout << " H) fPtr is: " << &fPtr << "\n";</pre>
         cout << "=========n";
```

#### Código

```
cout << "The content of the pointer variables is:\n";</pre>
cout << " A) aPtr is: " << aPtr << "\n";</pre>
cout << " B) bPtr is: " << bPtr << "\n";</pre>
cout << " C) cPtr is: " << cPtr << "\n";
cout << " D) fPtr is: " << fPtr << "\n";</pre>
cout << "=========n";
cout << "The original content of the variables referred by pointer are:\n";</pre>
cout << " A) aPtr is: " << *aPtr << "\n";</pre>
cout << " B) bPtr is: " << *bPtr << "\n";</pre>
cout << " C) cPtr is: " << *cPtr << "\n";</pre>
cout << " D) fPtr is: " << *fPtr << "\n";
a = 345;
*bPtr = 777:
c = *bPtr + 13;
*cPtr = *cPtr + 25;
cout << "=========\n";
cout << "The actual content of the variables referred to by pointer are:\n";</pre>
cout << " A) aPtr is: " << *aPtr << "\n";</pre>
cout << " B) bPtr is: " << *bPtr << "\n";</pre>
cout << " C) cPtr is: " << *cPtr << "\n";</pre>
cout << " D) fPtr is: " << *fPtr << "\n";
cout << "========n";
system("pause");
return 0;
```

Corrida © C:\TrabajoenLaboratorio\CUD × The sum of 10 + 20 = 30The value of f is 205.78 The memory addresses of the variables are: A) a is: 000000892F35F7E4 B) b is: 000000892F35F804 C) c is: 000000892F35F824 D) f is: 000000892F35F844 E) aPtr is: 000000892F35F868 F) bPtr is: 000000892F35F888 G) cPtr is: 000000892F35F8A8 H) fPtr is: 000000892F35F8C8 The content of the pointer variables is: A) aPtr is: 000000892F35F7E4 B) bPtr is: 000000892F35F804 C) cPtr is: 000000892F35F824 D) fPtr is: 000000892F35F844 The original content of the variables referred by pointer are: A) aPtr is: 10 B) bPtr is: 20 C) cPtr is: -858993460 D) fPtr is: 205.78 The actual content of the variables referred to by pointer are: A) aPtr is: 345 B) bPtr is: 777 C) cPtr is: 815 D) fPtr is: 205.78

Presione una tecla para continuar . . .

### Bibliografía

- Herbert Schildt. **C++: The Complete Reference**, 4ta Edición. Edit. McGraw-Hill/Osborne, 2003. ISBN 0-07-222680-3.
- Marc Gregoire. Professional C++. 5ta. Edición. Edit. Wiley and sons, 2021. ISBN: 978-1-119-69540-0.
- Bjarne Stroustrup. The C++ Programming Language, 4ta. Edición. Addison Wesley, 2013. ISBN 978-0-321-56384-2
- Página <u>www.cplusplus.com</u>

### Gracias por su atención

U.A.Q. Fac. de Informática Campus Juriquilla

Dra. Sandra Luz Canchola Magdaleno sandra.canchola@uaq.mx Cel. 442-1369270

Dra. Reyna Moreno Beltrán reyna.moreno@uaq.mx

DRA. + Sandra Luz
CANCHOLA
MAGDALENO