Mise en place de la chaine de developpement sous Codeblocks d'un module Wemos, basé sur un ESP WROOM 32

1 Configurer l'environnement de code::bolcks

1.1 Ajoutez le répertoire où se trouve le compilateur xtensa-esp32-elf-gcc

à la variable d'environnement système

编	辑环境变量	×
	C:\Program Files (x86)\Intel\iCLS Client\	新建(N)
	C:\Program Files\Intel\iCLS Client\	
	C:\Windows\system32	编辑(E)
	C:\Windows	
	C:\Windows\System32\Wbem	浏览(B)
	C:\Windows\System32\WindowsPowerShell\v1.0\	1/33/2/07/11
	C:\Program Files (x86)\NVIDIA Corporation\PhysX\Common	無限金(口)
	%SystemRoot%\system32	1009P37(07)
	%SystemRoot%	
	%SystemRoot%\System32\Wbem	► ¥2(11)
	%SYSTEMROOT%\System32\WindowsPowerShell\v1.0\	上19(0)
	C:\Program Files\MySQL\MySQL Server 5.7\bin	TIMO
	C:\Program Files (x86)\Intel\Intel(R) Management Engine Compon	▶秒(0)
	C:\Program Files\Intel\Intel(R) Management Engine Components\	
	C:\Program Files (x86)\Intel\Intel(R) Management Engine Compon	
	C:\Program Files\Intel\Intel(R) Management Engine Components\I	编辑又本(1)
	C:\Program Files\MATLAB\MATLAB Production Server\R2012b\ru	
	C:\Program Files\MATLAB\MATLAB Production Server\R2012b\bin	
	%SYSTEMROOT%\System32\OpenSSH\	
	C:\Program Files (x86)\CodeBlocks\esp8266Complier\esp8266\to	
C	D:\esp32\tools\xtensa-esp32-elf-gcc\1.22.0-61-gab8375a-5.2.0\bin	
		Text
	确定	取消

# 1.2 Créer un Empty project



Ajoutez les fichiers de bibliothèque que vous devez utiliser dans votre projet.

יניהר	19/16A (11/70)	天主	NO1.
🥌 ETH.cpp	2018/6/7 9:27	CPP 文件	8 KB
🥌 ETH.h	2018/6/7 9:27	H 文件	3 KB
🥌 WiFi.cpp	2017/6/15 14:25	CPP 文件	3 KB
🥌 WiFi.h	2017/6/15 14:25	H 文件	2 KB
🥌 WiFiAP.cpp	2018/6/11 15:04	CPP 文件	9 KB
🥌 WiFiAP.h	2017/6/15 14:26	H 文件	2 KB
🥝 WiFiClient.cpp	2018/6/11 15:04	CPP 文件	10 KB
🥝 WiFiClient.h	2017/6/15 14:26	H 文件	3 KB
🥝 WiFiGeneric.cpp	2018/6/11 15:05	CPP 文件	16 KB
🥝 WiFiGeneric.h	2018/6/11 15:05	H 文件	3 KB
🥝 WiFiMulti.cpp	2018/6/20 9:44	CPP 文件	9 KB
🥝 WiFiMulti.h	2018/6/11 15:06	H 文件	2 KB
🥝 WiFiScan.cpp	2018/6/12 16:42	CPP 文件	8 KB
🥝 WiFiScan.h	2017/6/15 14:25	H 文件	2 KB
lefterver.cpp	2018/6/11 15:06	CPP 文件	4 KB
🥝 WiFiServer.h	2017/6/15 14:26	H 文件	2 KB
🥝 WiFiSTA.cpp	2018/6/11 15:07	CPP 文件	17 KB
🥝 WiFiSTA.h	2018/6/11 15:07	H 文件	4 KB
🥝 WiFiType.h	2018/6/11 15:07	H 文件	2 KB
🥝 WiFiUdp.cpp	2017/6/15 14:25	CPP 文件	7 KB
🥌 WiFiUdp.h	2017/6/15 14:25	H 文件	3 KB

# 1.3 Configurer l'environnement de construction

Settings—>compiler-->toolchain executables

<Selected compiler>: Changer le nom en xtensa-esp32-elf-gcc

- <Compiler's installation directory>: Sélectionnez le répertoire dans lequel se trouve le compilateur xtensa-esp32-elf-gcc dans le répertoire esp32.
- <Program Files>: Sélectionnez le compilateur approprié

Compiler settings				— 🗆 X
	Glol	oal compiler setti	ings	
Global compiler	Selected compiler xtensa-esp32-elf-gcc Se	t as default Copy	Rename Delet	e Reset defaults
settings	Compiler's installation dir D:\esp32\tools\xtensa NOTE: All programs mu Program Files Additiona	ectory -esp32-elf-gcc\1.22.0-61-gab st exist either in the "bin" su il Paths	08375a-5.2.0\bin b-directory of this path, (	Auto-detect or in any of the
Batch builds	C compiler: C++ compiler: Linker for dynamic libs: Linker for static libs:	xtensa-esp32-elf-gcc.exe xtensa-esp32-elf-g++.exe xtensa-esp32-elf-gcc.exe xtensa-esp32-elf-gcc.exe		···
	Debugger: Resource compiler: Make program:	Invalid debugger		···
			[	OK Cancel

# 1.4 Définir le répertoire de recherche du fichier d'en-tête et le

## répertoire de recherche de l'éditeur de liens

Settings—>compiler-->Search directories

<Compiler>

Ajoutez tous les fichiers du répertoire xxx \ esp32 \ hardware \ DFRobot\_FireBeetle-ESP32 \ 0.0.8 \ tools \ sdk \ include

complier	Linker Re	source con	npiler						_	
Policy:								~		
D:\esp3; D:\	2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware' 2\hardware'	\DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot_ \DFRobot	FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E FireBeetle-E	SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8 SP32\0.0.8	tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in tools/sdk/in	clude\app clude\blue clude\blue clude\blue clude\blue clude\coa clude\coa clude\con clude\con clude\esp clude\esp clude\esp clude\esp clude\esp clude\esp clude\esp clude\esp clude\esp	_trace _update edroid tloader_supp fig sole er _adc_cal 32 ernet at s	oort		Û
D:\esp32 D:\esp32	2\hardware 2\hardware	DFRobot_	FireBeetle-E FireBeetle-F	SP32\0.0.8 SP32\0.0.8	\tools\sdk\in \tools\sdk\in	clude\free clude\hea	n n	~		

#### <Linker>

Xxx\esp32\hardware\DFRobot\_FireBeetle-ESP32\0.0.8\tools\sdk\lib Xxx\esp32\hardware\DFRobot\_FireBeetle-ESP32\0.0.8\tools\sdk\ld

Compiler settings Linker settings Search directories Toolchain executables Custom variables Bu

olicy:					```
):\esp32\h	ardware\DFRobo	t_FireBeetle-I	ESP32\0.0.8\too	ols\sdk\lib	
:\esp32\h	ardware\DFRobo	)t_HreBeetle-I	ESP32\U.U.8\too	ois\sak\la	

# 1.5 Ajouter le chemin de la bibliothèque de liens

Settings—>compiler-->Linker settings Mettez arduino.ar dans notre projet.

Compiler settings	Linker settings	Search directories	Toolchain executab
Policy:			
Link libraries:			Other linker options
C:\Users\pc\D	Edit library		×
	File: _WifiSer	rvice\arduinb.ar	
	ОК	Cancel	
		Ŷ	
		Class	
Add	Copy selected to	Clear	<

<Other linker options>

-lgcc -lopenssl -lbtdm\_app -lfatfs -lwps -lcoexist -lwear\_levelling -lhal -lnewlib ldriver -lbootloader\_support -lpp -lmesh -lsmartconfig -ljsmn -lwpa -lethernet -lphy lapp\_trace -lconsole -lulp -lwpa\_supplicant -lfreertos -lbt -lmicro-ecc -lcxx -lxtensadebug-module -lmdns -lvfs -lsoc -lcore -lsdmmc -lcoap -ltcpip\_adapter -lc\_nano -lrtc -lspi\_flash -lwpa2 -lesp32 -lapp\_update -lnghttp -lspiffs -lespnow -lnvs\_flash lesp\_adc\_cal -llog -lexpat -lm -lc -lheap -lmbedtls -llwip -lnet80211 -lpthread -ljson lstdc++ -Wl,--end-group -Wl,-EL



## Settings—>compiler-->Compiler Setting

<Other compiler options>

-std=gnu++11 -fno-exceptions -Os -g3 -Wpointer-arith -fexceptions -fstackprotector -ffunction-sections -fdata-sections -fstrict-volatile-bitfields -mlongcalls nostdlib -w -Wno-error=unused-function -Wno-error=unused-but-set-variable -Wno-error=unused-variable -Wno-error=deprecated-declarations -Wno-unusedparameter -Wno-sign-compare -fno-rtti -MMD -c -DF\_CPU=24000000L -DARDUINO=10807 -DARDUINO\_ESP32\_DEV -DARDUINO\_ARCH\_DFROBOT\_FIREBEETLE-ESP32 "-DARDUINO\_BOARD=\"ESP32\_DEV\"" "-DARDUINO\_VARIANT=\"firebeetle32\"" -

elected compile	r									
tensa-esp32-elf	f-gcc									`
	S	et as defa	ult	Сору	Rena	ame	Delete	Re	eset defa	ults
ompiler settings	Linke	r settings	Search	directories	Toolchair	n executa	bles Cust	om varia	bles Bu	i 1
olicy:										~
	$\sim$		~							-
Compiler Flags	Other	compiler o	ptions	other reso	urce comp	iler option	s #defin	es		
-std=anu++1	1 -fno-e	xceptions	-Os -q3	-Wpointer-	arith -fexce	eptions -fs	tack-prote	ctor -ffu	inction-	$\wedge$
-std=gnu++1	1 -fno-e	xceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ctor -ffu	inction-	^
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer	arith -fexco	eptions -fs	tack-prote	ctor -ffu	inction-	^
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ctor -ffu	inction-	^
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ctor -ffu	inction-	^
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ctor -ffu	unction-	^
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ector -ffu	inction-	~
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ctor -ffu	Inction-	~
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ctor -ffu	inction-	~
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ector -ffu	inction-	^
-std=gnu++1)	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ector -ffu	inction-	^
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ector -ffu	unction-	^
-std=gnu++1:	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fe	tack-prote	ector -ffu	unction-	^
-std=gnu++1	1 -fno-€	exceptions	-Os -g3	-Wpointer	arith -fexco	eptions -fe	tack-prote	ector -ffu	inction-	^
-std=gnu++1	1 -fno-€	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -f	tack-prote	ctor -ffu	inction-	~
-std=gnu++1	1 -fno-e	exceptions	-Os -g3	-Wpointer-	arith -fexco	eptions -fs	tack-prote	ctor -ffu	Inction-	~

#### 1.6 Ajouter des variables personnalisées

Settings—>compiler-->Custom variables

Ajouter les variables suivantes:

Compiler settings Linker settings Search directories Toolchain executables Custom variables Bui
Variables:
ficheSrc = D:\esp32\hardware\DFRobot_FireBeetle-ESP32\0.0.8\libraries\WiFi\src
C1cmd = -DESP_PLATFORM
C2cmd = "-DMBEDTLS_CONFIG_FILE=\"mbedtls/esp_config.h\"" ficheVariants = D:\esp32\hardware\DERobot_FireBeetle-FSP32\0.0.8\variants\firebeetle32
ficheEsp32 = D:\esp32\hardware\DFRobot_FireBeetle-ESP32\0.0.8\cores\esp32
These variables can be used in compiler and/or linker options.
use them as complet/linker options this way, \$\$(varialitie)
<u>A</u> dd <u>E</u> dit <u>D</u> elete <u>C</u> lear
OK Cancel

# 1.7 Modifier les instructions de compilation / lien

Settings—>compiler-->Other settings/Advanced compiler

Commands->Compile single file to object file

\$compiler \$C1cmd \$C2cmd \$C3cmd \$includes \$options -I\$ficheEsp32 -

I\$ficheVariants -I\$ficheSrc \$file -o \$object

Ac	lvanced compiler options			
ſ	Commands Output parsing Others			
	Command:	Source ext.:	Command macros:	
	Compile single file to object file $\sim$	~ + -	Compiler executable:	\$compiler
	Command line macro:		Resource compiler executable:	\$rescomp
	\$compiler \$C1cmd \$C2cmd \$C3cmd \$includ	les \$options -I\$ \land	Linker executable:	\$linker \$lib_linker
			Compiler flags:	\$options
			Resource compiler flags:	<pre>\$res_options</pre>
			Linker flags:	\$link_options
			Resource include paths:	sincludes \$res_includes
		$\sim$	Linker include paths:	\$libdirs
	<	>	Link libraries:	\$libs
	Generated files (to be further compiled):		Source file dir (no name, no ext.)	\$file dir
		~	Source file name (no path, no ext.):	\$file_name
			Source file extension:	\$file_ext
			Object file:	\$object
			All *linkable* object files:	\$link objects
			All *linkable* flat object files:	<pre>\$link_flat_objects</pre>
		$\sim$	All *linkable* resource object files:	\$link_resobjects

Commands->Link object files to console executable

. . .

\$linker \$L1cmd \$libdirs -T esp32\_out.ld -T esp32.common.ld -T esp32.rom.ld -T esp32.peripherals.ld -T esp32.rom.spiram\_incompatible\_fns.ld -u ld\_include\_panic\_highint\_hdl -u call\_user\_start\_cpu0 -WI,--gc-sections -WI,-static -WI,--undefined=uxTopUsedPriority -u \_cxa\_guard\_dummy -u \_cxx\_fatal\_exception -WI,-start-group \$link\_objects \$link\_resobjects \$libs \$link\_options -o \$exe\_output

Command:	Source ext.: 0
Link object files to console executable $ \sim$	· · ·
Command line macro: \$linker \$L1cmd \$libdirs -T esp32_out.ld -T	esp32.common ^ L
	C F
	C F
<	> L
Generated files (to be further compiled):	
	~ <u>5</u>

# 1.8 Définir les propriétés du projet

## Project → properties

<Project settings>: Cocher Object names generation

Project/targets options	— 🗆 X
Project settings Build targets	Build scripts Notes C/C++ parser options Debugger EditorConfig options EnvVars options
Title:	ESP32_WifiService
Platforms:	Al
Filename:	C:\Users\pc\Desktop\codeBlockProjet\arduino\ESP32_WifiService\ESP32_WifiService.cbp
Makefile:	Makefile
	☐ This is a custom Makefile The file must exist, no Makefile will be auto-generated! If you make changes here, the special settings in the projects build options will only be enabled (or disabled), if the project is saved.
	Execution directory: C:\Users\pc\Desktop\codeBlockProjet\arduino\ESP32_WifiService\
Precompiled headers:	Strategy
	O Generate PCH in a directory alongside original header
	O Generate PCH in the object output dir
	Generate PCH alongside original header (default)
	If you change the strategy used for PCH generation,
	rease delete the old PCH we (or all eccory) manually to avoid connicts
Object names generation:	Generate extended object names (i.e. "foo.cpp.o" instead of "foo.o")
	differing on extension only)
Check for externally modified fil	es: Check for externally modified files (should be true in most cases).
	on slow network shares. Be careful, external modification might silently override the files, if you do not save them from inside Code::Blocks)
	Project's dependencies Project's build options
	OK Concel
	OK Cancel

#### <Build tragets>:

Output filename: Changer le fichier avec le suffixe elf. Décocher Auto-generate filename extension.

Build targets Build scripts	Notes C/C++ parser opt	ions Debugge	er EditorConfig o	ptions	EnvVars optio	ns 💶 🕨
	Selected build target o	ptions				
Add	Platforms:	All				
Rename	Type:	Console applic	ation 🗸			
Duplicate		Pause when	execution ends			
Delete	]	Create Impo	exports file			
	Output filename:	bin\Debug\ES	P32_WifiService.	elf		
	Import library filename:	\$(TARGET_O	JTPUT_DIR)\$(TA	RGET_C	OUTPUT_BASE	:N
	Definition file filename:	\$(TARGET_O	JTPUT_DIR)\$(TA	RGET_C	UTPUT_BASE	IN
Virtual targets		Auto-gener	ate filename prefi	X		
Dependencies		Auto-genera	ate mename exte	TISIOT		
Re-order	Execution working dir:	•				
Build options	Objects output dir:	obj\Debug\				
	Build target files:					
	<ul> <li>SimpleWiFiServer.cp</li> <li>src\ETH.cpp</li> <li>src\ETH.h</li> <li>src\WiFi.cpp</li> </ul>	qq				^
Create project from target	Toggle checkmarks	All/? on	All/? off	Sele	cted file prop	erties
					ОК	Cancel

Project→Build options

<Pre/post build steps>

Post-build steps:

gen\_esp32part.exe -q D:\esp32\hardware\DFRobot\_FireBeetle-ESP32\0.0.8\tools\partitions\default.csv output.partitions.bin

esptool.exe --chip esp32 elf2image --flash\_mode dio --flash\_freq 80m --flash\_size 4MB -o output.bin \$exe\_output

# 2 Démonstration de performance

\tools\sdk\include\spi\_flash -ID:\esp32\hardware\DFRobot\_FireBeetle-ESF32\0.0.8\tools\sdk\include\spiffs -ID:\esp32\hardware\DFRobot\_FireBeetle-ESF32\0.0.8\tools\sdk\include\vfs -ID:\esp32\hardware\DFRobot\_FireBeetle

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5

0 error(s), 0 warning(s) (0 minute(s), 10 second(s))

<b>口</b> 17Y	r≫kx,∟i #0	大王	No.
📕 bin	2018/10/26 21:56	文件夹	
📕 obj	2018/10/26 21:56	文件夹	
📙 src	2018/10/26 21:10	文件夹	
🗋 arduino.ar	2018/10/26 20:57	AR 文件	19,029 KB
ESP32_WifiService.cbp	2018/10/27 0:30	CBP 文件	3 KB
ESP32_WifiService.depend	2018/10/28 12:06	DEPEND 文件	5 KB
ESP32_WifiService.layout	2018/10/27 0:30	Adobe Premiere Layo	1 KB
😳 output.bin	2018/10/28 12:06	BIN 文件	537 KB
🚭 output.partitions.bin 🛛 🏅	2018/10/28 12:06	BIN 文件	3 KB
SimpleWiFiServer.cpp	2018/10/26 20:57	CPP 文件	5 KB

፤ → codeBlockProjet → arduino → ESP32_V	✓ <sup>ひ</sup> 搜索"src"		
名称 ^	修改日期	类型	大小
📄 ETH.cpp.d	2018/10/28 12:04	D 文件	15 KB
ETH.cpp.o	2018/10/28 12:04	0 文件	796 KB
🗋 WiFi.cpp.d	2018/10/28 12:04	D 文件	15 KB
🗋 WiFi.cpp.o	2018/10/28 12:04	0 文件	786 KB
🗋 WiFiAP.cpp.d	2018/10/28 12:04	D 文件	15 KB
🗋 WiFiAP.cpp.o	2018/10/28 12:04	0 文件	803 KB
WiFiClient.cpp.d	2018/10/28 12:04	D 文件	14 KB
WiFiClient.cpp.o	2018/10/28 12:04	0 文件	855 KB
WiFiGeneric.cpp.d	2018/10/28 12:04	D 文件	15 KB
🗋 WiFiGeneric.cpp.o	2018/10/28 12:04	0 文件	910 KB
🗋 WiFiMulti.cpp.d	2018/10/28 12:04	D 文件	15 KB
🗋 WiFiMulti.cpp.o	2018/10/28 12:04	0 文件	832 KB
🗋 WiFiScan.cpp.d	2018/10/28 12:04	D 文件	15 KB
🗋 WiFiScan.cpp.o	2018/10/28 12:04	0 文件	799 KB
WiFiServer.cpp.d	2018/10/28 12:04	D 文件	14 KB
WiFiServer.cpp.o	2018/10/28 12:04	0 文件	767 KB
WiFiSTA.cpp.d	2018/10/28 12:04	D 文件	15 KB
🗋 WiFiSTA.cpp.o	2018/10/28 12:04	0 文件	834 KB
🗋 WiFiUdp.cpp.d	2018/10/28 12:04	D 文件	14 KB
🗋 WiFiUdp.cpp.o	2018/10/28 12:04	0 文件	760 KB

此电	_V] 脑 → 桌面 → codeBlockProjet → arduino → ES	SP32_WifiService > bin > De	bug	✔ Ö 搜索"Debug"
	名称	修改日期	类型	大小
le:	ESP32_WifiService.elf	2018/10/28 12:04	ELF 文件	4,333 KB