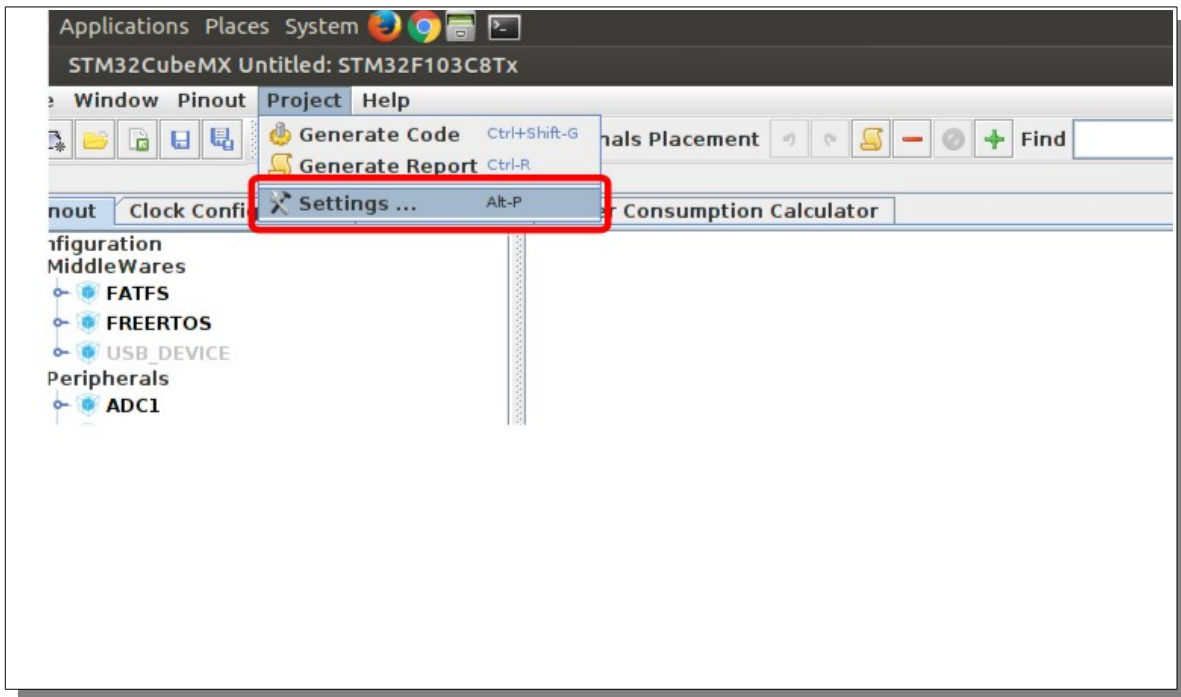
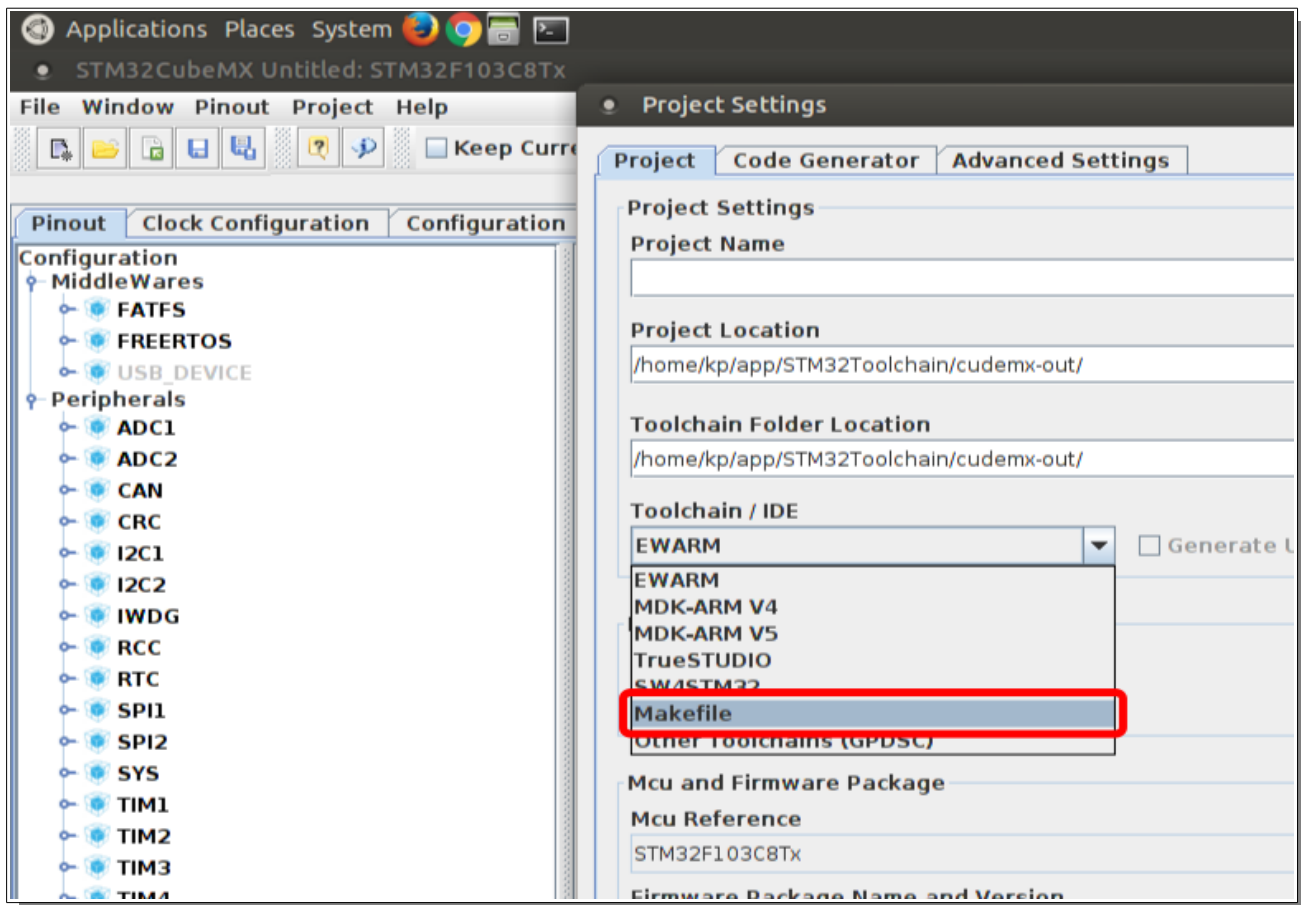


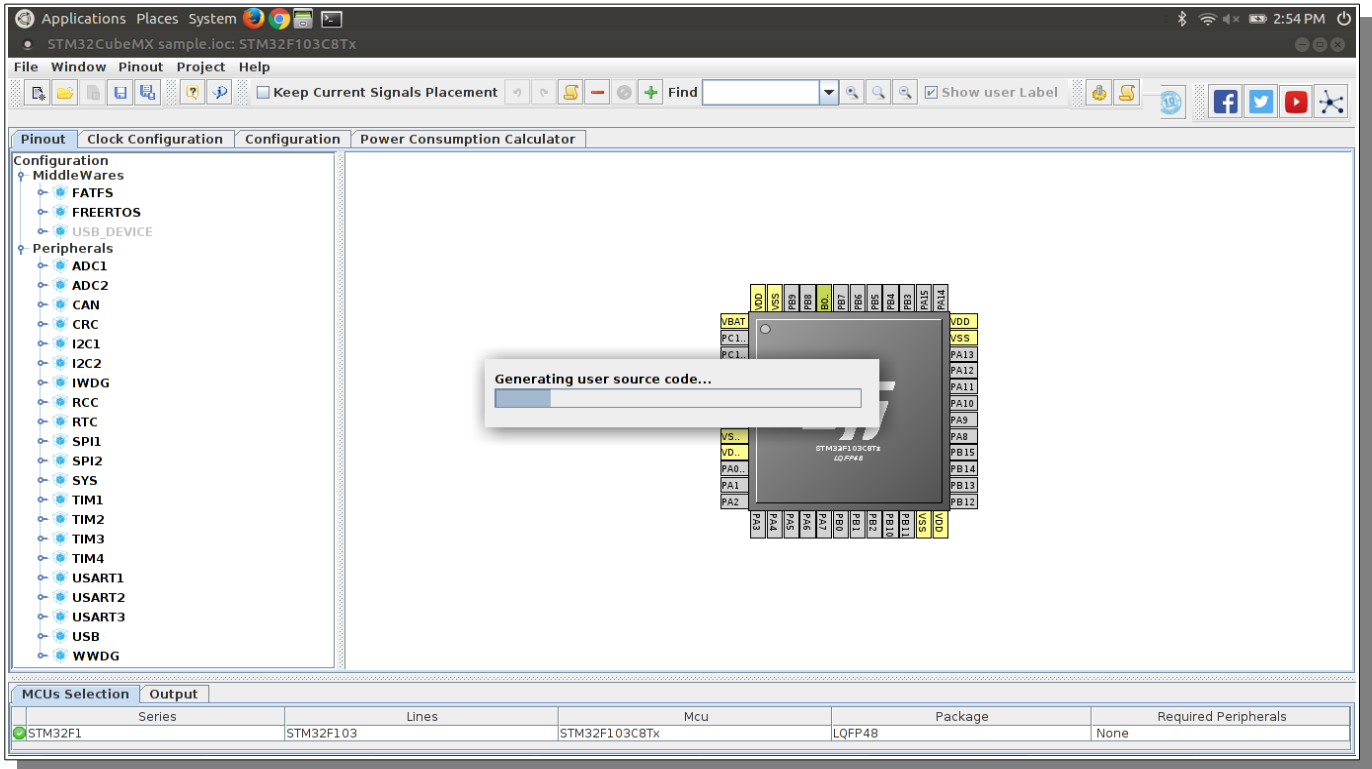
1. Open the STM32CubeMX and select the chip, make changes and go to Project -> Settings



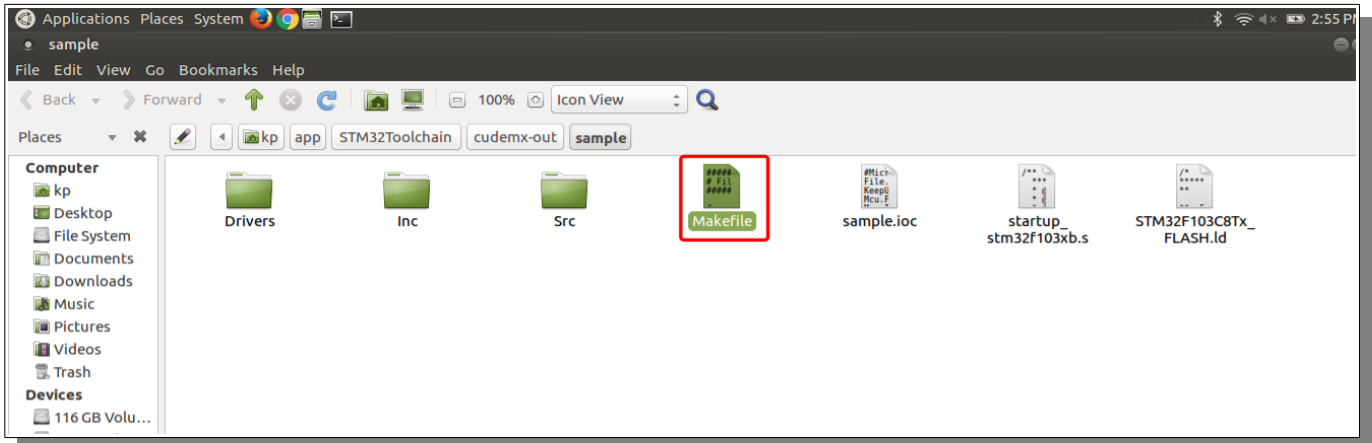
2. In the Toolchain /IDE section, select Makefile option



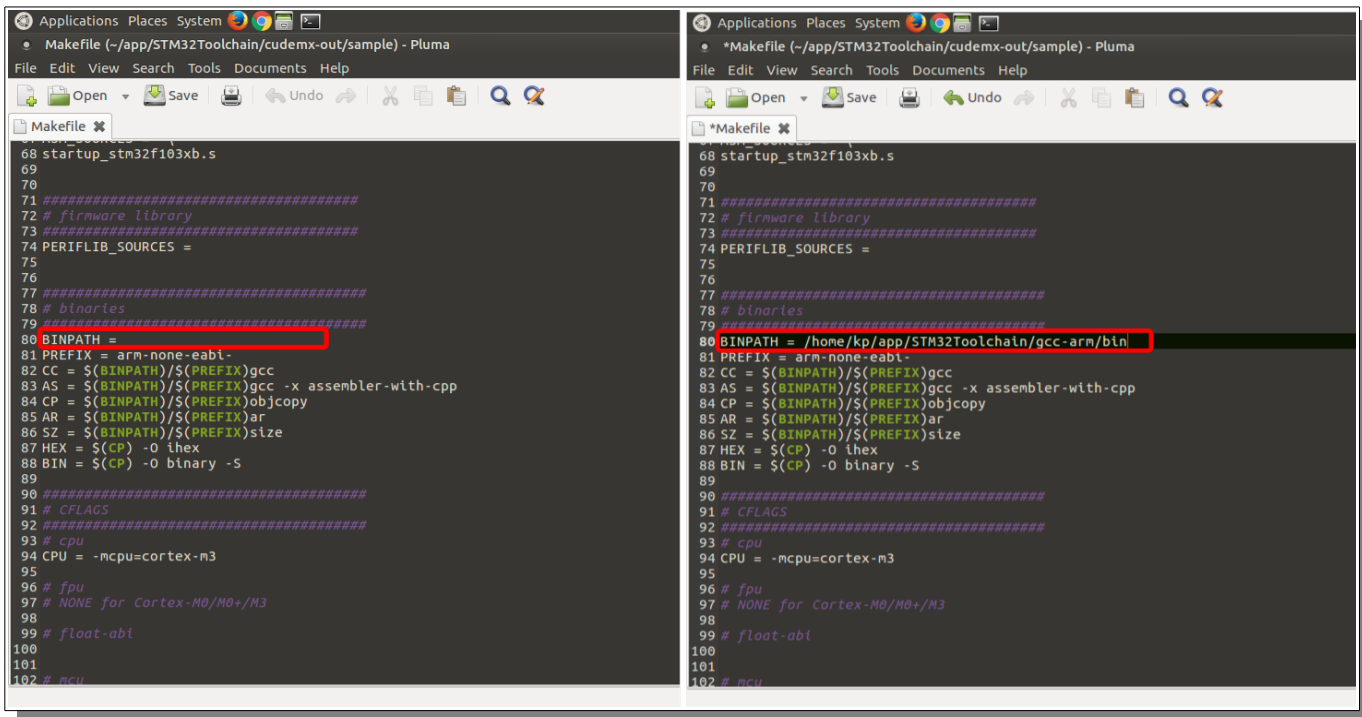
3. Click OK to generate code.



4. Makefile generated along with other files

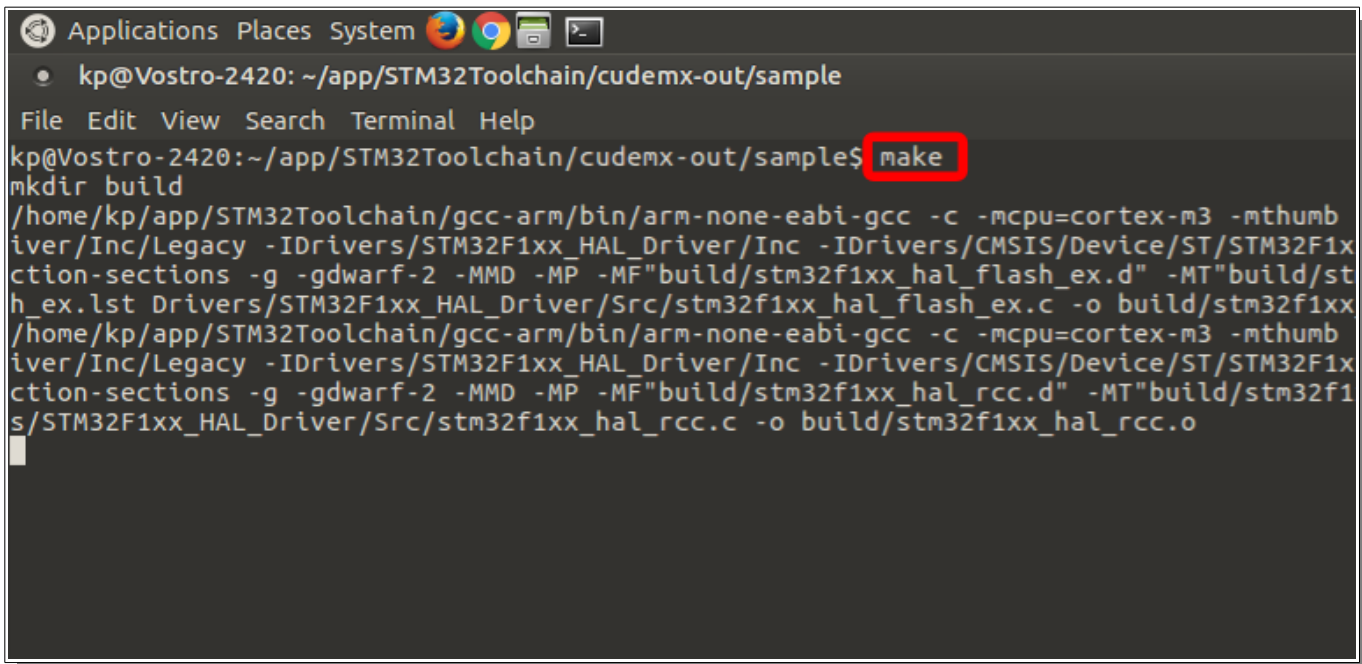


5. Set BINPATH to your arm-gcc compiler directory



```
68 startup_stm32f103xb.s
69
70
71 #####
72 # firmware library
73 #####
74 PERIFLIB_SOURCES =
75
76
77 #####
78 # binaries
79 #####
80 BINPATH =
81 PREFIX = arm-none-eabi-
82 CC = $(BINPATH)/$(PREFIX)gcc
83 AS = $(BINPATH)/$(PREFIX)gcc -x assembler-with-cpp
84 CP = $(BINPATH)/$(PREFIX)objcopy
85 AR = $(BINPATH)/$(PREFIX)ar
86 SZ = $(BINPATH)/$(PREFIX)size
87 HEX = $(CP) -O ihex
88 BIN = $(CP) -O binary -S
89
90 #####
91 # CFLAGS
92 #####
93 # cpu
94 CPU = -mcpu=cortex-m3
95
96 # fpu
97 # NONE for Cortex-M0/M0+/M3
98
99 # float-abi
100
101
102 # mcu
```

6. Build the project with make command

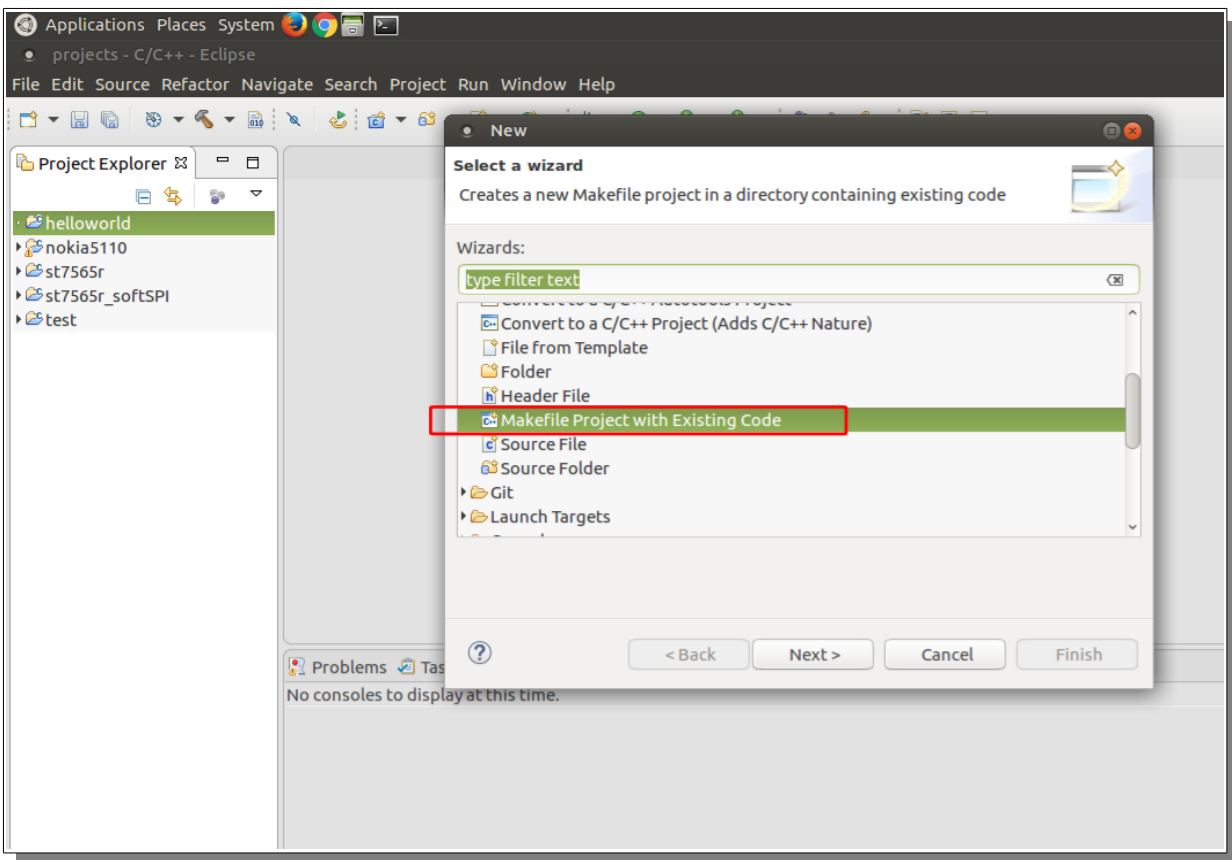


```
kp@Vostro-2420: ~/app/STM32Toolchain/cudemx-out/sample
File Edit View Search Terminal Help
kp@Vostro-2420:~/app/STM32Toolchain/cudemx-out/sample$ make
mkdir build
/home/kp/app/STM32Toolchain/gcc-arm/bin/arm-none-eabi-gcc -c -mcpu=cortex-m3 -mthumb
iver/Inc/Legacy -IDrivers/STM32F1xx_HAL_Driver/Inc -IDrivers/CMSIS/Device/ST/STM32F1x
ction-sections -g -gdwarf-2 -MMD -MP -MF"build/stm32f1xx_hal_flash_ex.d" -MT"build/st
h_ex.lst Drivers/STM32F1xx_HAL_Driver/Src/stm32f1xx_hal_flash_ex.c -o build/stm32f1xx
/home/kp/app/STM32Toolchain/gcc-arm/bin/arm-none-eabi-gcc -c -mcpu=cortex-m3 -mthumb
iver/Inc/Legacy -IDrivers/STM32F1xx_HAL_Driver/Inc -IDrivers/CMSIS/Device/ST/STM32F1x
ction-sections -g -gdwarf-2 -MMD -MP -MF"build/stm32f1xx_hal_rcc.d" -MT"build/stm32f1
s/STM32F1xx_HAL_Driver/Src/stm32f1xx_hal_rcc.c -o build/stm32f1xx_hal_rcc.o
```

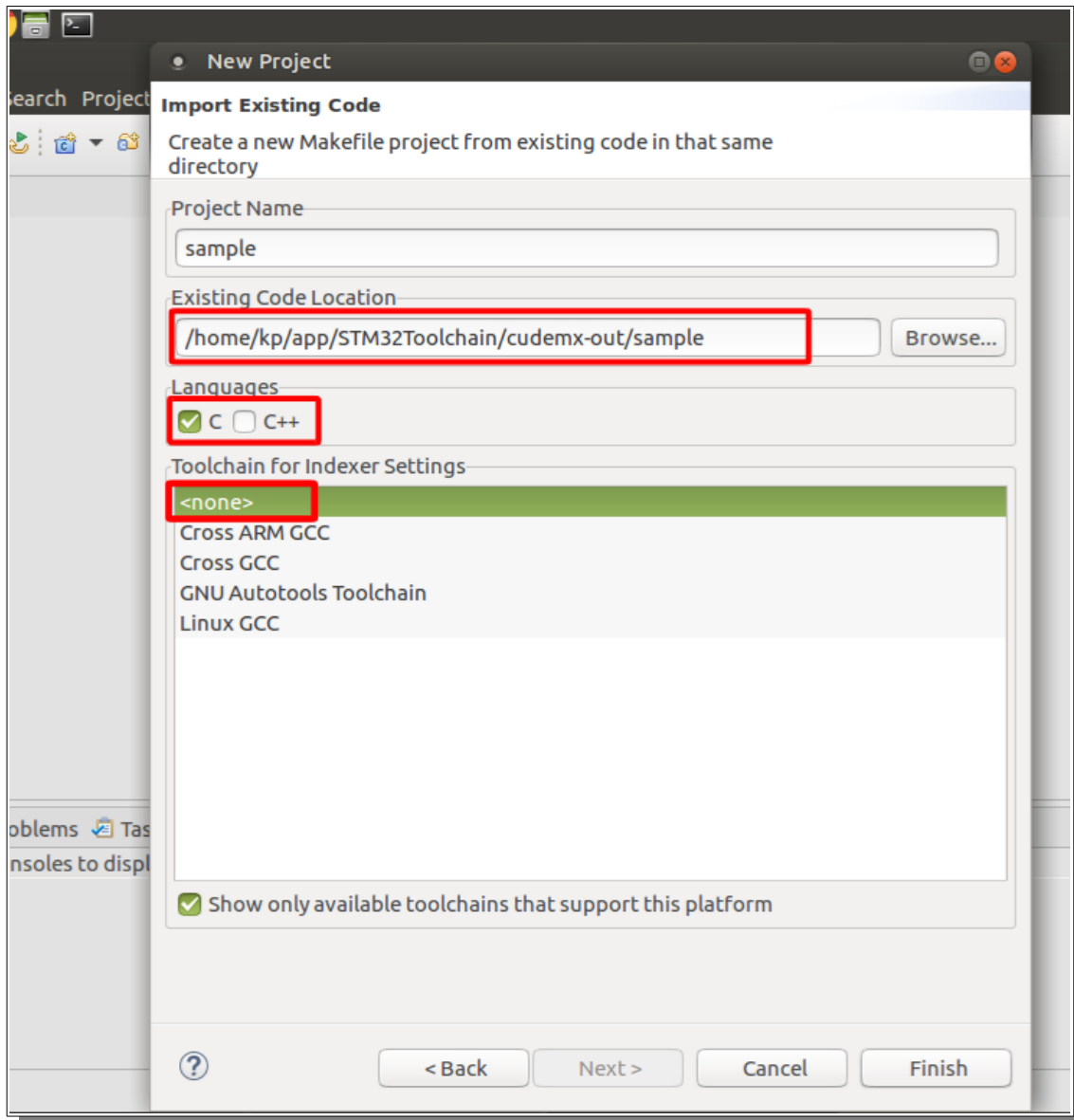
7. This make script generate three files .elf .hex and .bin, what is nice about this script is that .bin and .hex files can be used with utilities like stm32flash and st-utils for flashing into microcontroller.

```
iver/Inc/Legacy -IDrivers/STM32F1xx_HAL_Driver/Inc -IDrivers/CMSIS/Device/ST/STM32F1xx/Include -IDrivers/CMSIS/I
ction-sections -g -gdwarf-2 -MMD -MP -MF"build/stm32f1xx_hal_gpio_ex.d" -MT"build/stm32f1xx_hal_gpio_ex.o" -Wa,-
x.lst Drivers/STM32F1xx_HAL_Driver/Src/stm32f1xx_hal_gpio_ex.c -o build/stm32f1xx_hal_gpio_ex.o
/home/kp/app/STM32Toolchain/gcc-arm/bin/arm-none-eabi-gcc -x assembler-with-cpp -c -mcpu=cortex-m3 -mthumb -DU
ivers/STM32F1xx_HAL_Driver/Inc/Legacy -IDrivers/STM32F1xx_HAL_Driver/Inc -IDrivers/CMSIS/Device/ST/STM32F1xx/Inc
-fdata-sections -ffunction-sections -g -gdwarf-2 -MMD -MP -MF"build/startup_stm32f103xb.d" -MT"build/startup_st
build/startup_stm32f103xb.o
/home/kp/app/STM32Toolchain/gcc-arm/bin/arm-none-eabi-gcc build/stm32f1xx_hal_flash_ex.o build/stm32f1xx_hal_rcc
n.o build/stm32f1xx_it.o build/stm32f1xx_hal_rcc_ex.o build/stm32f1xx_hal_msp.o build/stm32f1xx_hal.o build/stm3
ma.o build/stm32f1xx_hal_cortex.o build/stm32f1xx_hal_flash.o build/system_stm32f1xx.o build/stm32f1xx_hal_gpio_
=cortex-m3 -mthumb -specs=nano.specs -TSTM32F103C8Tx_FLASH.ld -lc -lm -lnosys -wl,-Map=build/sample.map,--cre
f
/home/kp/app/STM32Toolchain/gcc-arm/bin/arm-none-eabi-size build/sample.elf
text    data    bss     dec     hex filename
3432    12      1572   5016   1398 build/sample.elf
/home/kp/app/STM32Toolchain/gcc-arm/bin/arm-none-eabi-objcopy -O ihex build/sample.elf build/sample.hex
/home/kp/app/STM32Toolchain/gcc-arm/bin/arm-none-eabi-objcopy -O binary -S build/sample.elf build/sample.bin
kp@Vostro-2420:~/app/STM32Toolchain/cudemx-out/sample$ █
```

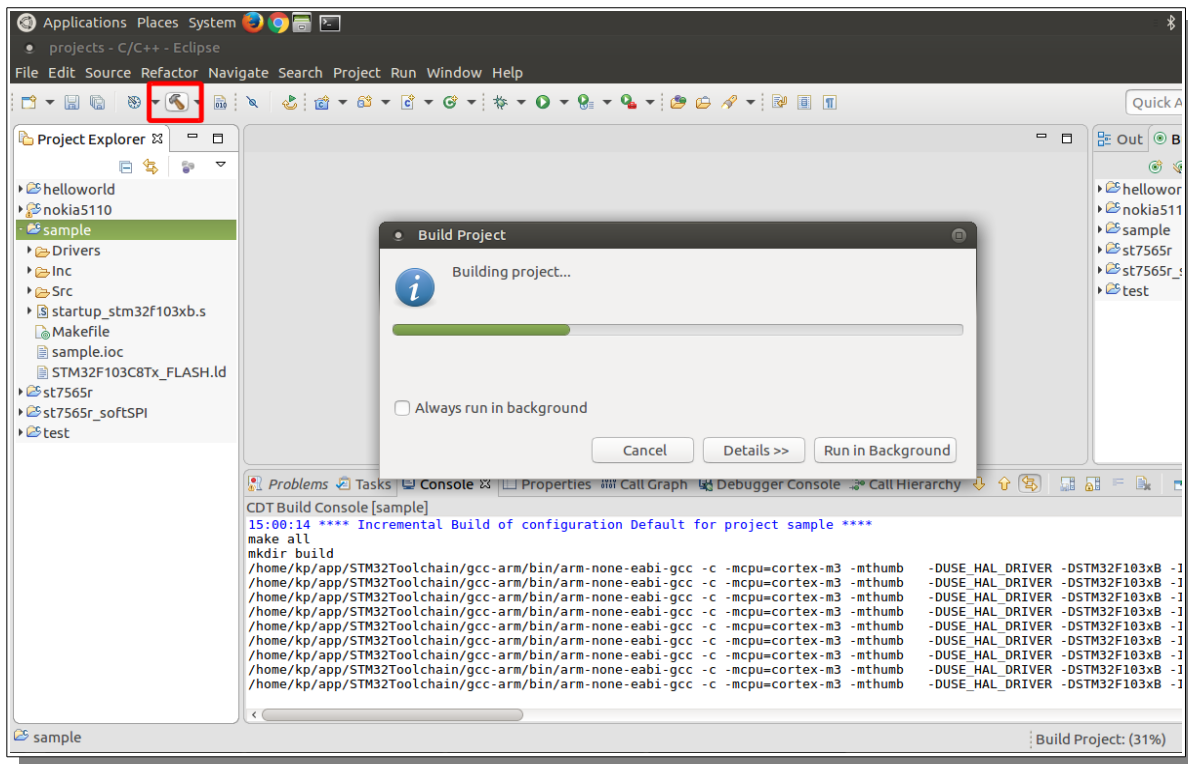
8. Generated makefile project can be used with Eclipse IDE, make a new project as shown in picture.



9. Choose the options as following



10. After making project in eclipse, just click on build button on toolbar and project will build without any problems.



11. Eclipse also give the same results.

