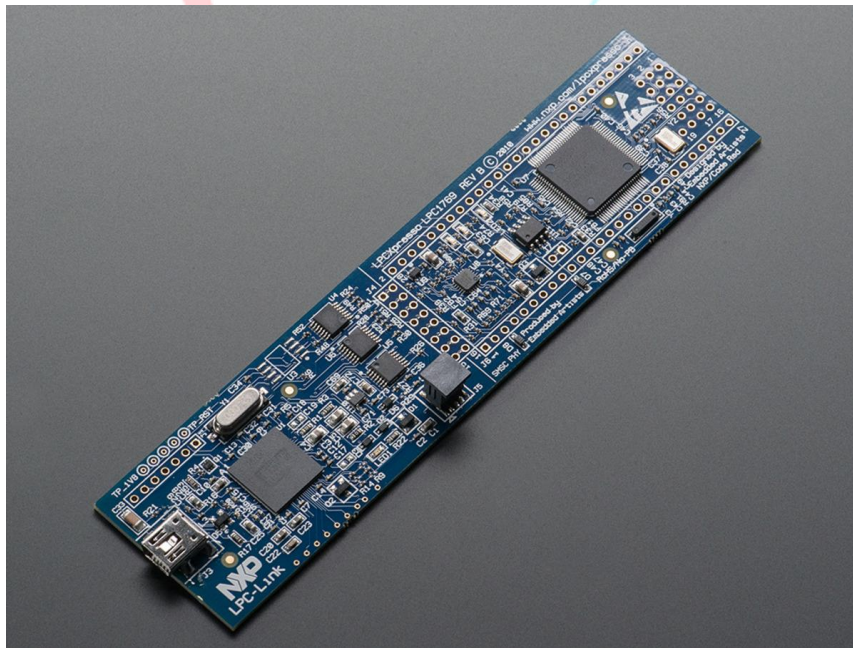


Getting started with LPC1769 and LPCXpresso



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Reviewers:

Version: 1.0

LPCXpresso™ is a low-cost development platform available from NXP supporting NXP's ARM-based microcontrollers. The platform is comprised of a simplified Eclipse-based IDE and low-cost target boards which include an attached JTAG debugger. LPCXpresso™ is an end-to-end solution enabling engineers to develop their applications from initial evaluation to final production.

Step 1: Open LPCXpresso IDE

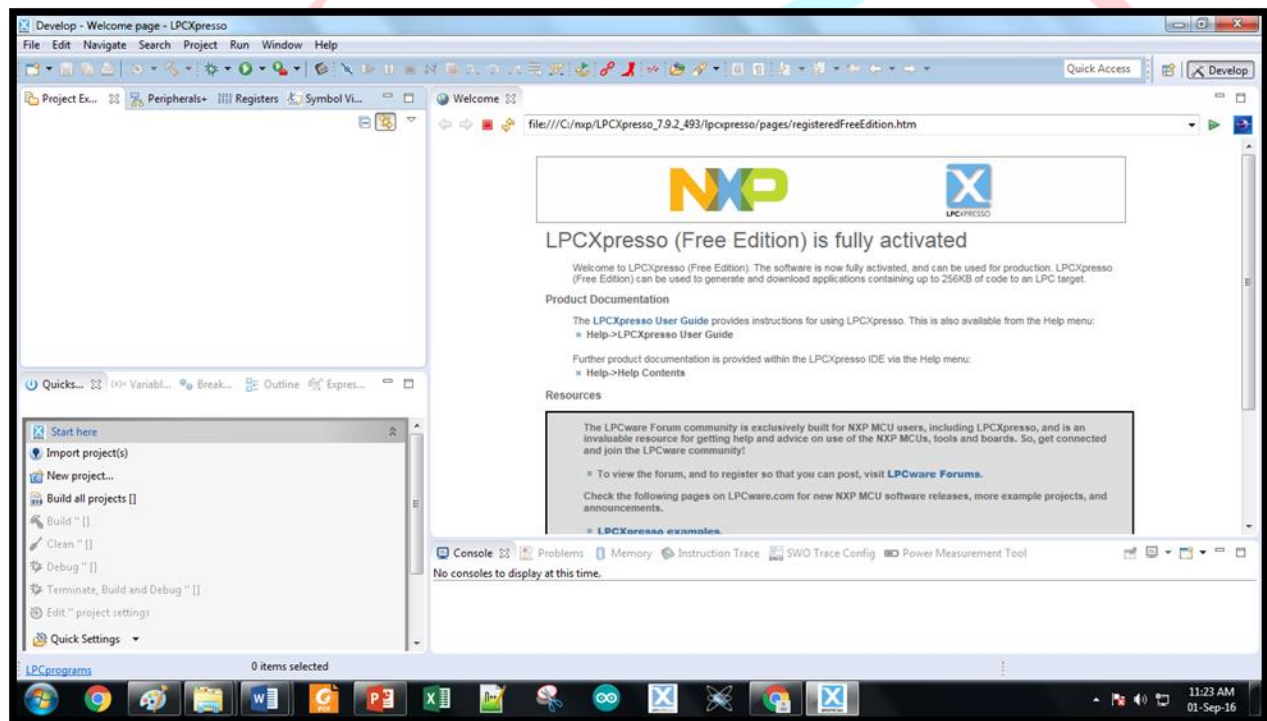


Fig. 1

Step 2: Before writing a code, we have to Import some Library Files to the Workspace. Click on Import projects on Quickstart Panel on the bottom-left of the window.

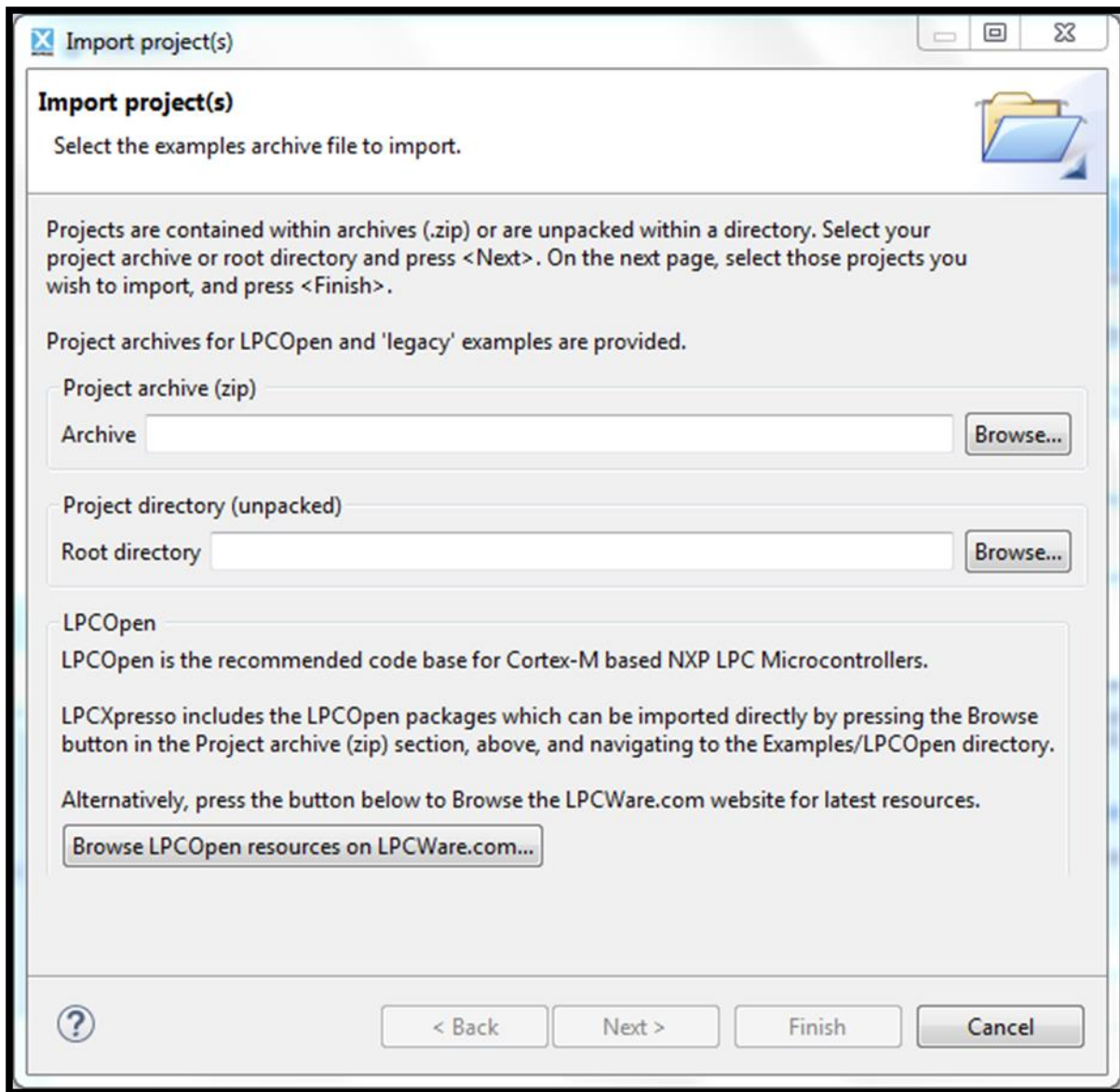


Fig. 2

Step 3: Browse, Legacy>> NXP>> LPC1000>> LPC17xx folder.

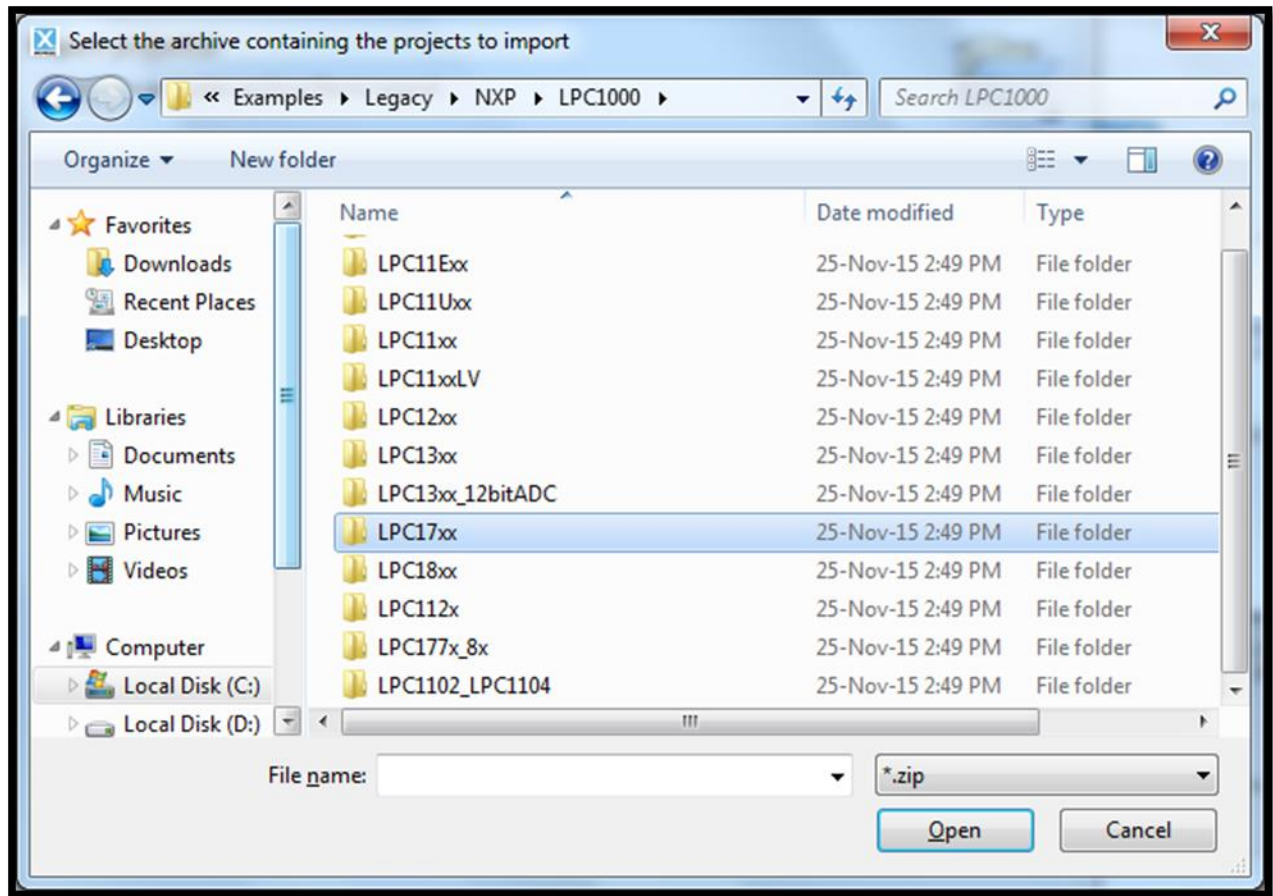


Fig. 3

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Step 4: Select the appropriate archive file. Let us select LPCXpresso176x_cmsis2. We can select any CMSIS CORE library that include LPC17xx.h header file.

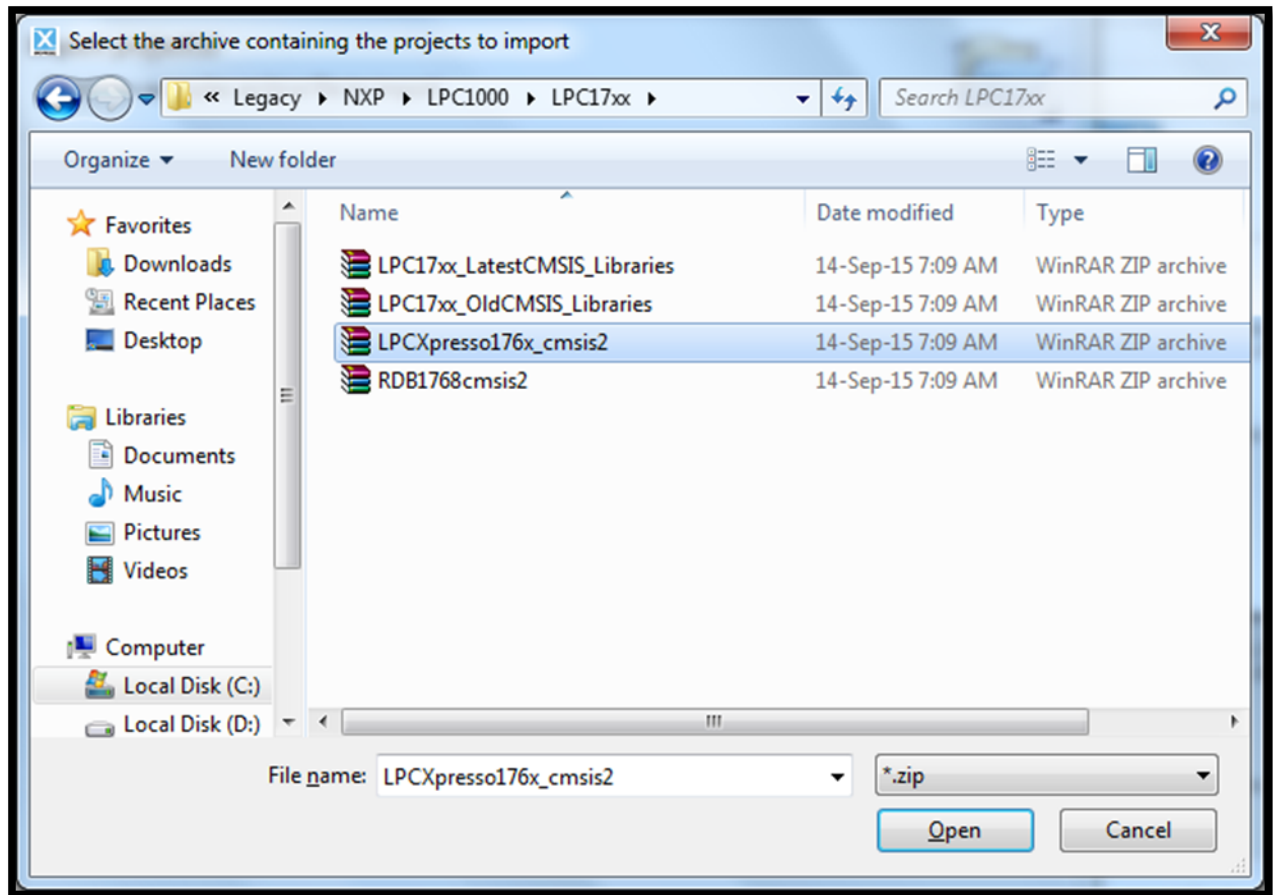


Fig. 4

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Step 5: After selecting you will be able to see the following libraries files. Let us select specific one.

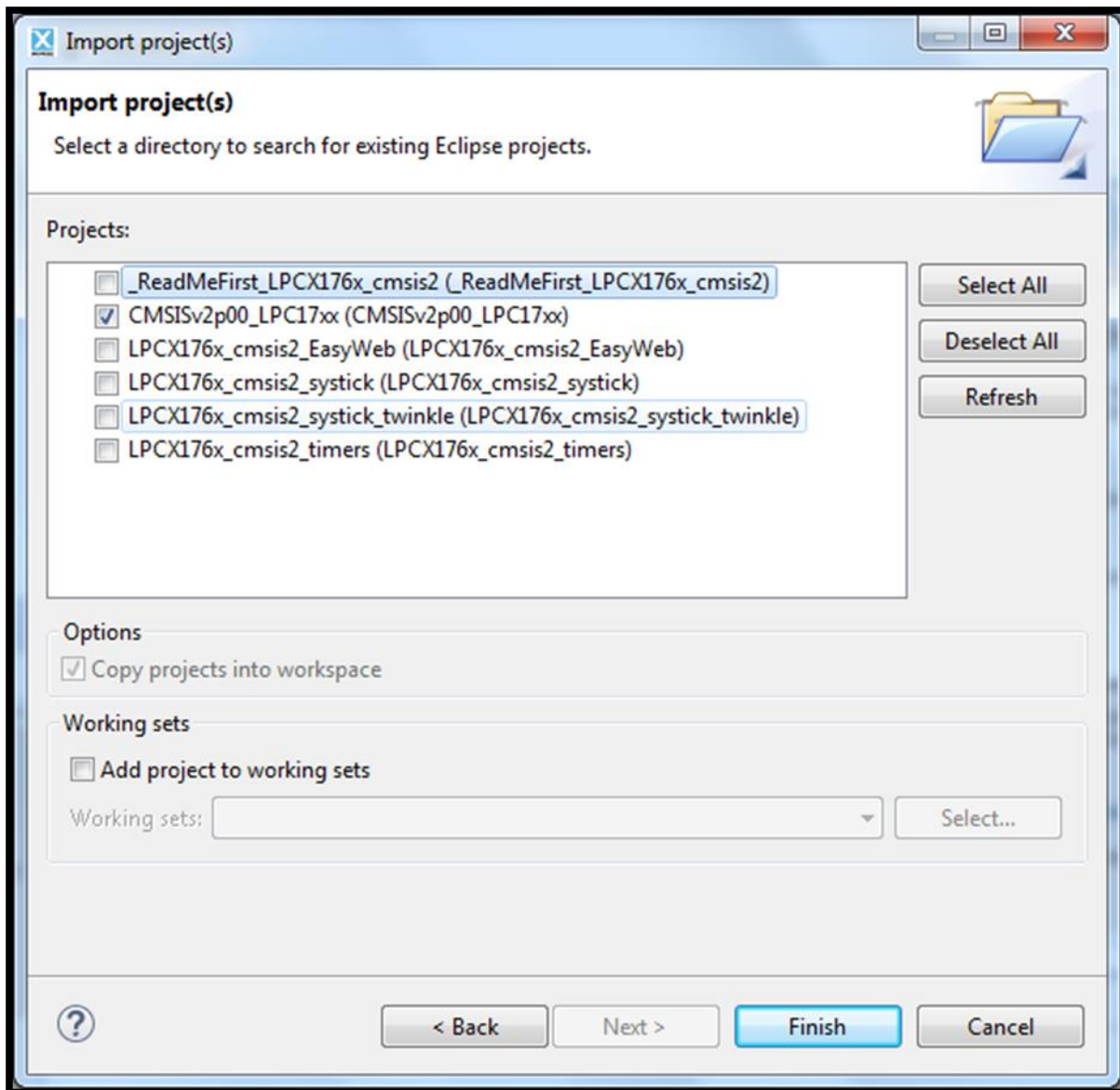


Fig. 5

Step 6: Now we will be able to see those core libraries in the workspace.

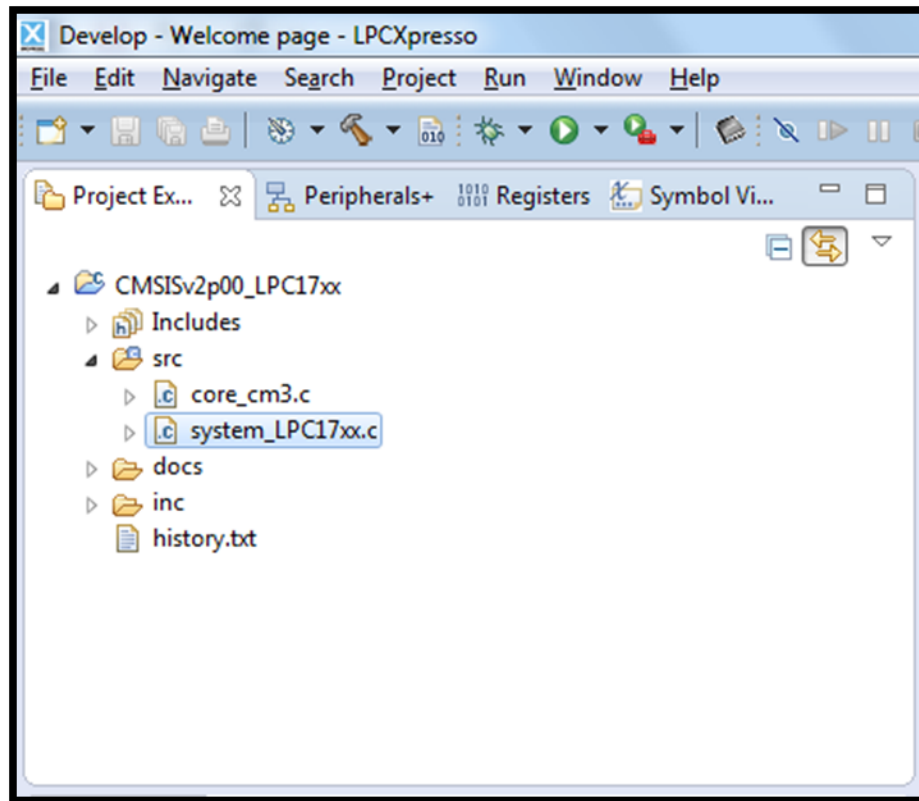


Fig. 6

Step 7: Now we can start creating our New project. Go to File >> New >> Project. Select LPCXpresso C project.

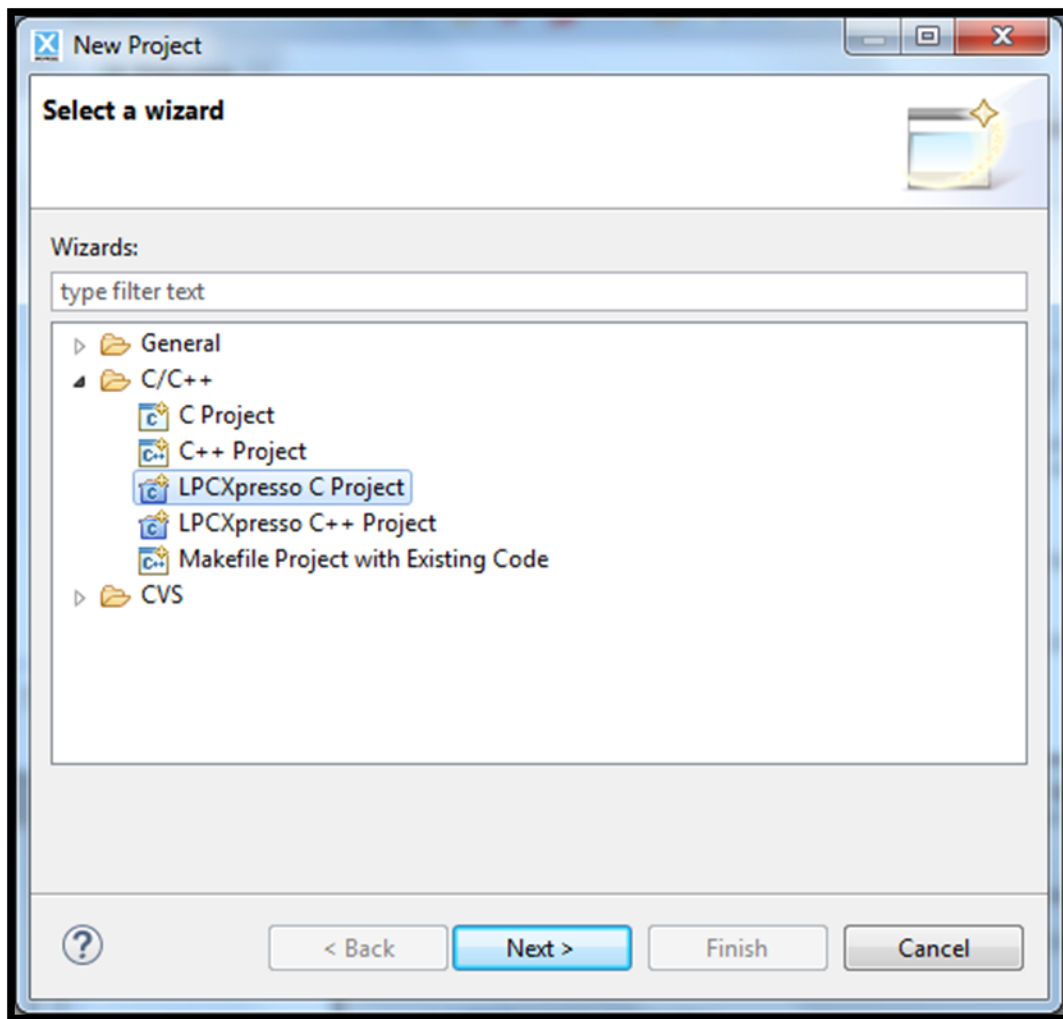


Fig. 7

Step 8: Select LPC1769, C Project and give name to your project. Select target MCU as LPC1769.

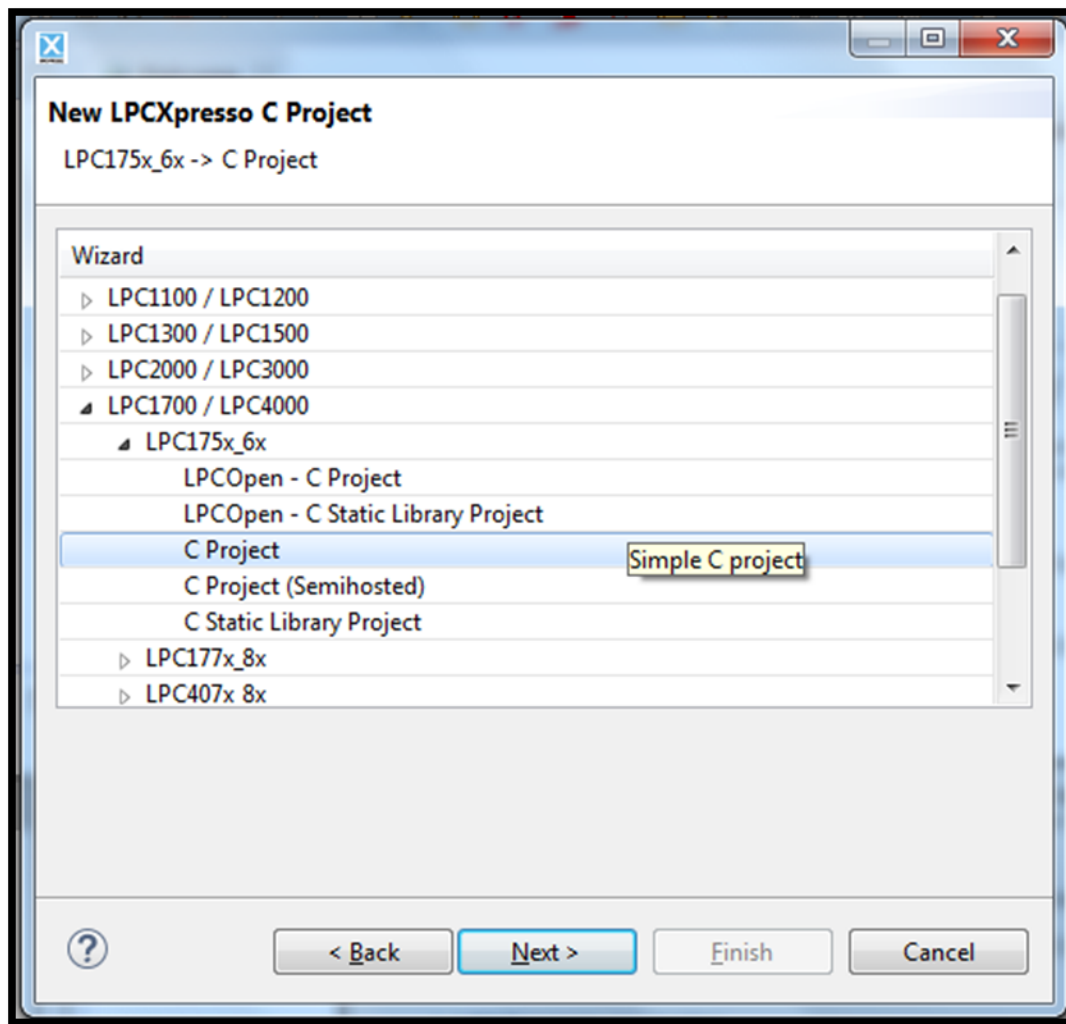


Fig. 3

Step 9: Now select CMSIS Core library. Click on Next and keep all the other configurations as default and Finish.

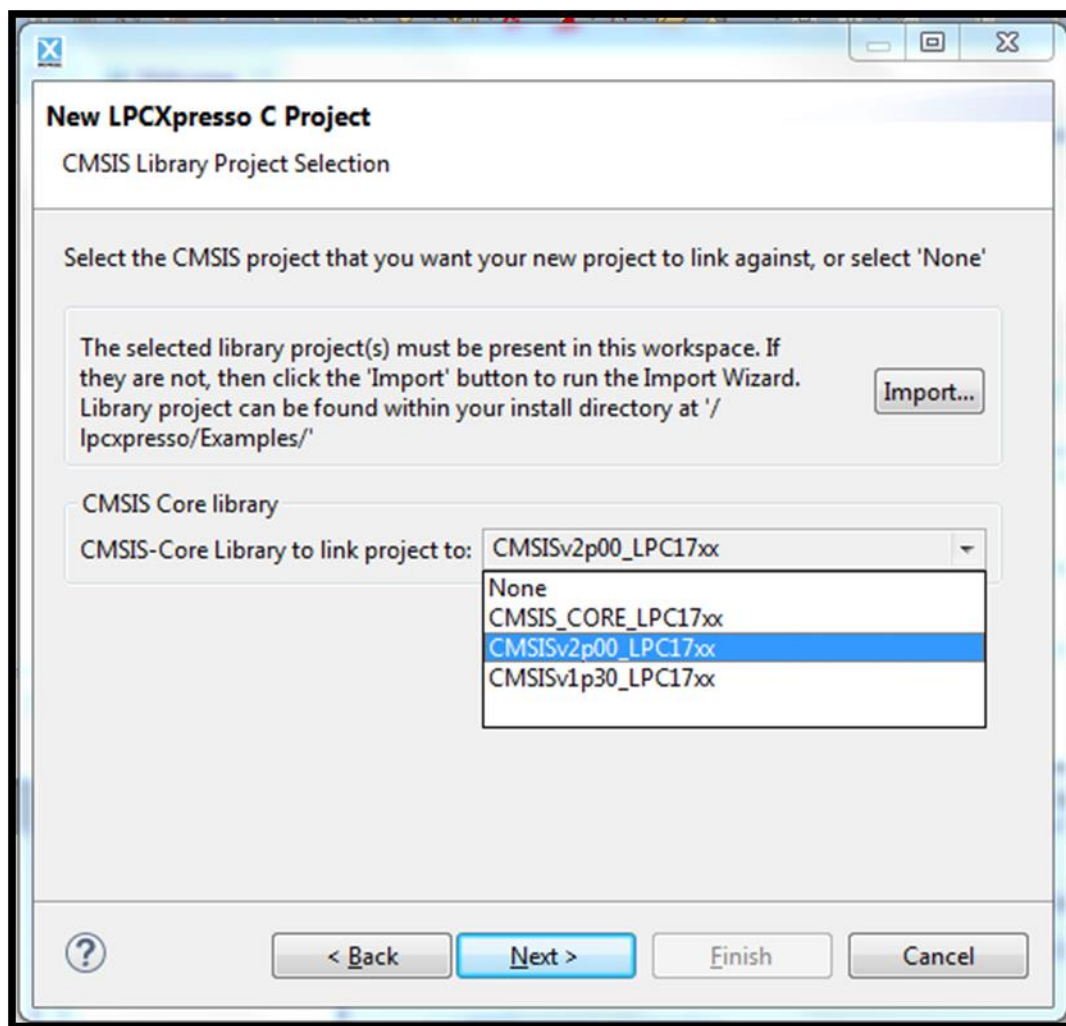


Fig. 9

Step 10: Now we can see our project onto the workspace. Now by double clicking on Blink.c file, we can start writing code in an editor window. Here we are going to writing a code for blinking an LED.

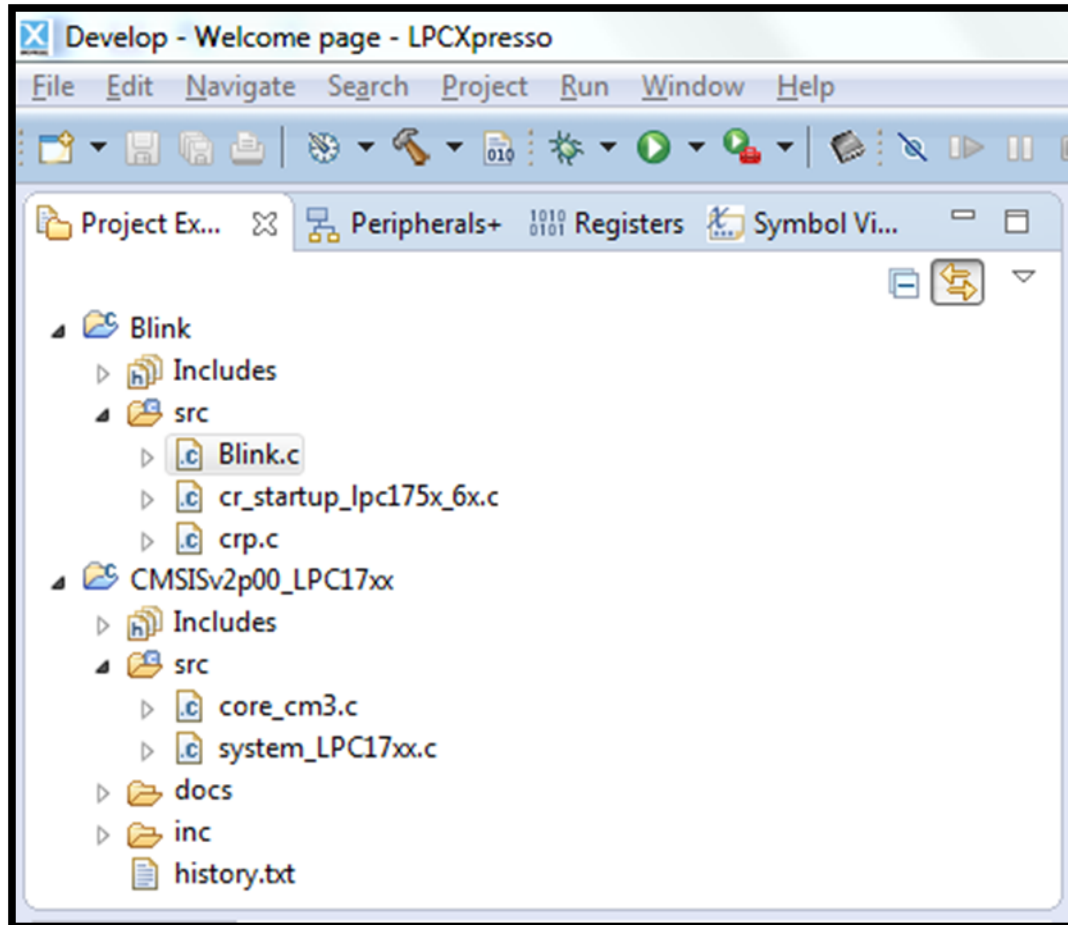
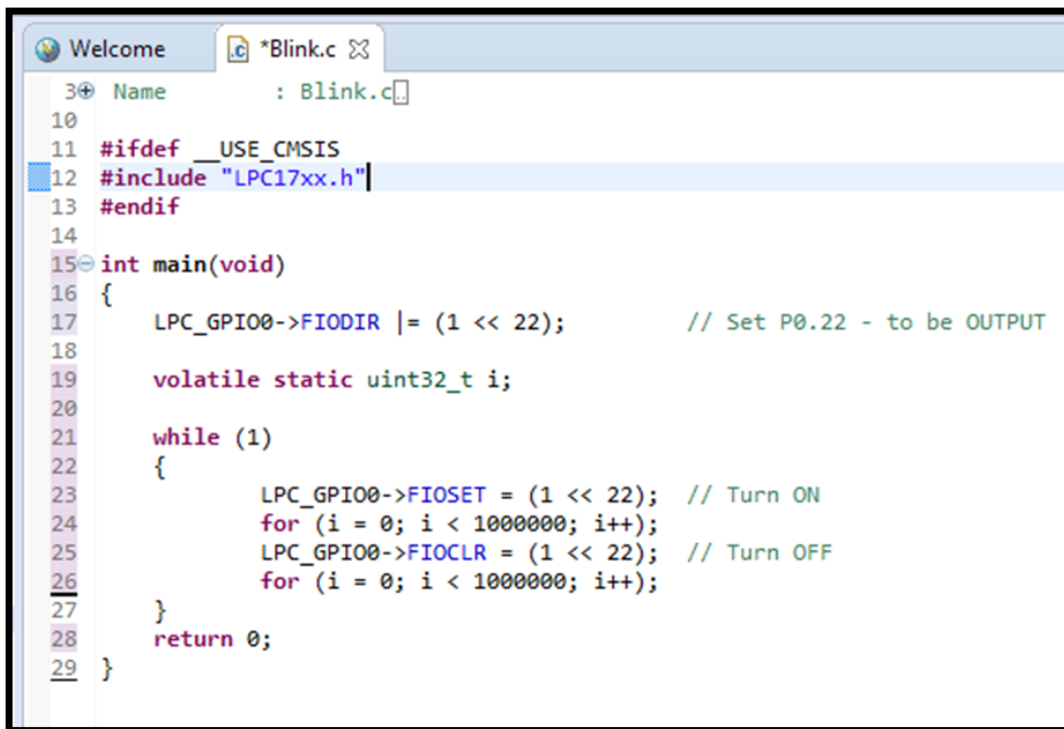


Fig. 10

Step 11: Write a code as shown below.



```
10 Name      : Blink.c
11 #ifndef __USE_CMSIS
12 #include "LPC17xx.h"
13 #endif
14
15 int main(void)
16 {
17     LPC_GPIO0->FIODIR |= (1 << 22);    // Set P0.22 - to be OUTPUT
18
19     volatile static uint32_t i;
20
21     while (1)
22     {
23         LPC_GPIO0->FIOSET = (1 << 22); // Turn ON
24         for (i = 0; i < 1000000; i++);
25         LPC_GPIO0->FIOCLR = (1 << 22); // Turn OFF
26         for (i = 0; i < 1000000; i++);
27     }
28     return 0;
29 }
```

Fig. 4

CODE:

```
#ifndef __USE_CMSIS
#include "LPC17xx.h"
#endif

int main(void)
{
    LPC_GPIO0->FIODIR |= (1 << 22);    // Set P0.22 - to be OUTPUT

    volatile static uint32_t i;
    while(1)
    {
        LPC_GPIO0->FIOSET = (1 << 22); // Turn ON
        for (i=0; i<=1000000; i++);
        LPC_GPIO0->FIOCLR = (1 << 22); // Turn OFF
        for (i=0; i<=1000000; i++);
    }
    return 0;
}
```

Step 12: After writing code, Build the project by clicking on Build Blink, on the Quickstart Panel on the bottom left of the window.

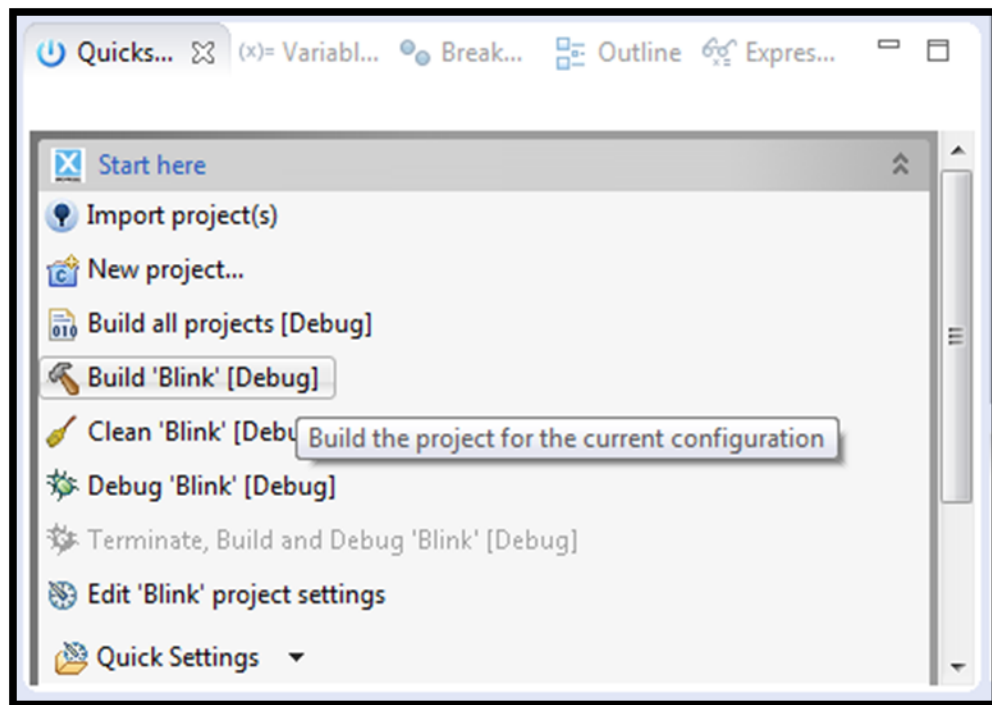
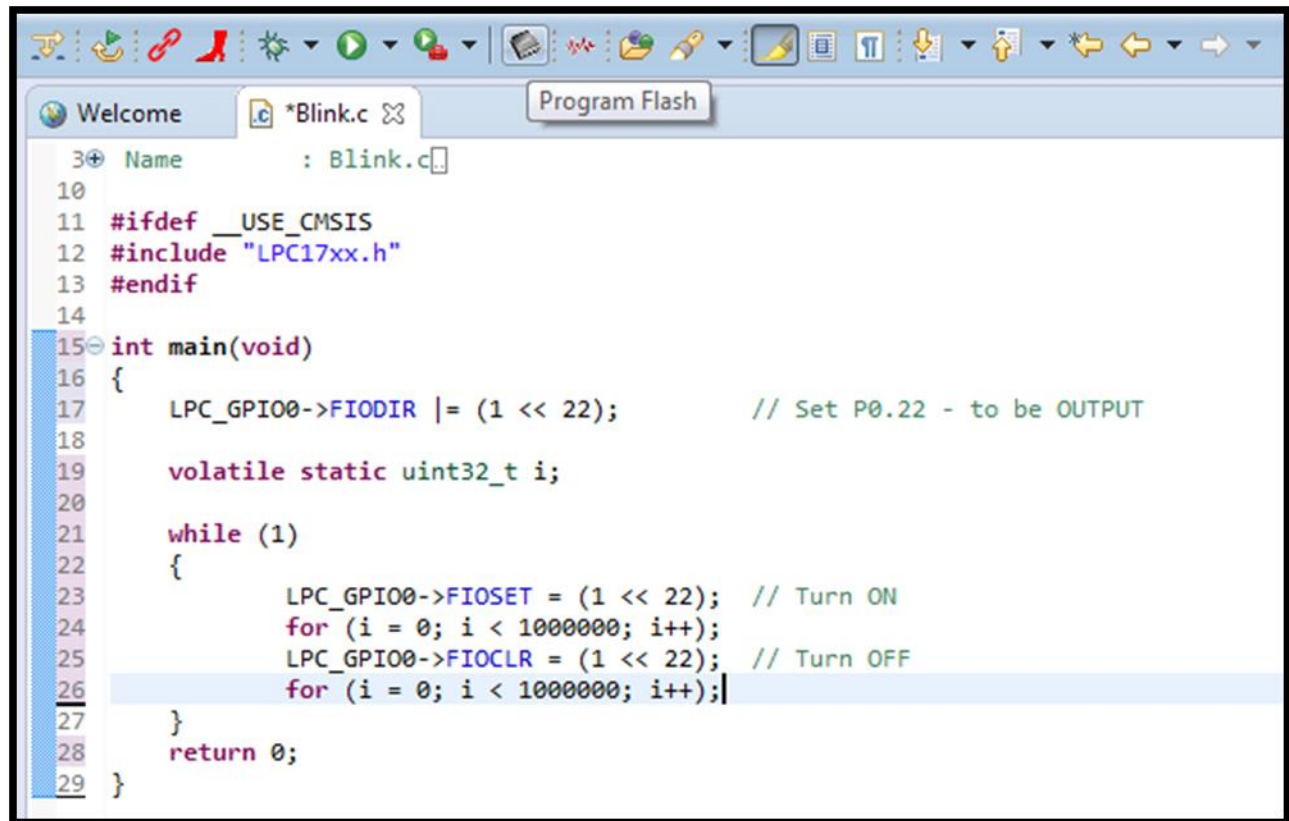


Fig. 5

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Step 13: Now, if all goes well connect the USB cable to LPC1769 and connect it to your computer. To upload the project file, click on the Program flash.



```
10
11 #ifndef __USE_CMSIS
12 #include "LPC17xx.h"
13 #endif
14
15 int main(void)
16 {
17     LPC_GPIO0->FIODIR |= (1 << 22);           // Set P0.22 - to be OUTPUT
18
19     volatile static uint32_t i;
20
21     while (1)
22     {
23         LPC_GPIO0->FIOSET = (1 << 22); // Turn ON
24         for (i = 0; i < 1000000; i++);
25         LPC_GPIO0->FIOCLR = (1 << 22); // Turn OFF
26         for (i = 0; i < 1000000; i++);
27     }
28     return 0;
29 }
```

Fig. 6

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Step 14: Now select the Project file Blink.axf. We can find it in our project folder.

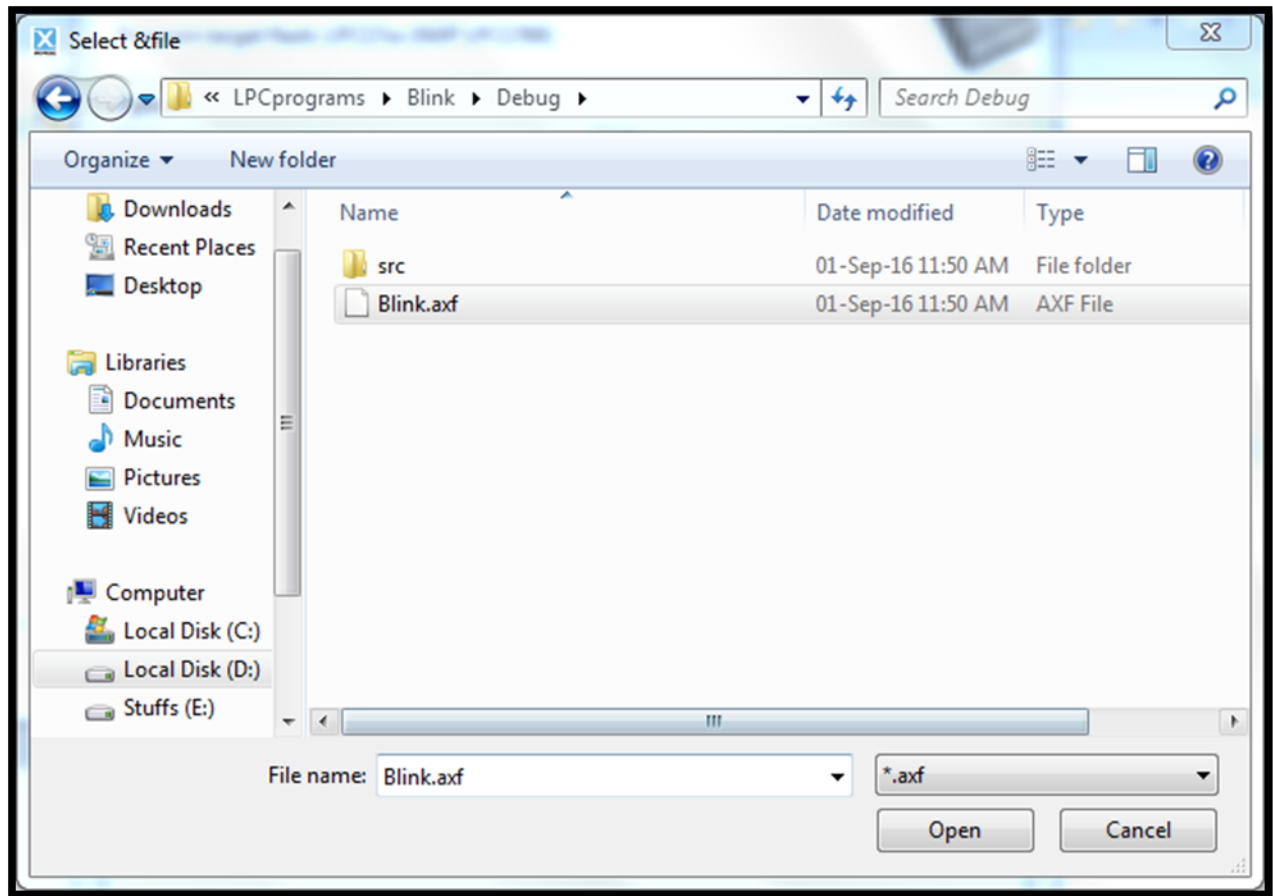


Fig. 14

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Step 15: Now this window shows we have finally dumped our code into LPC1769.

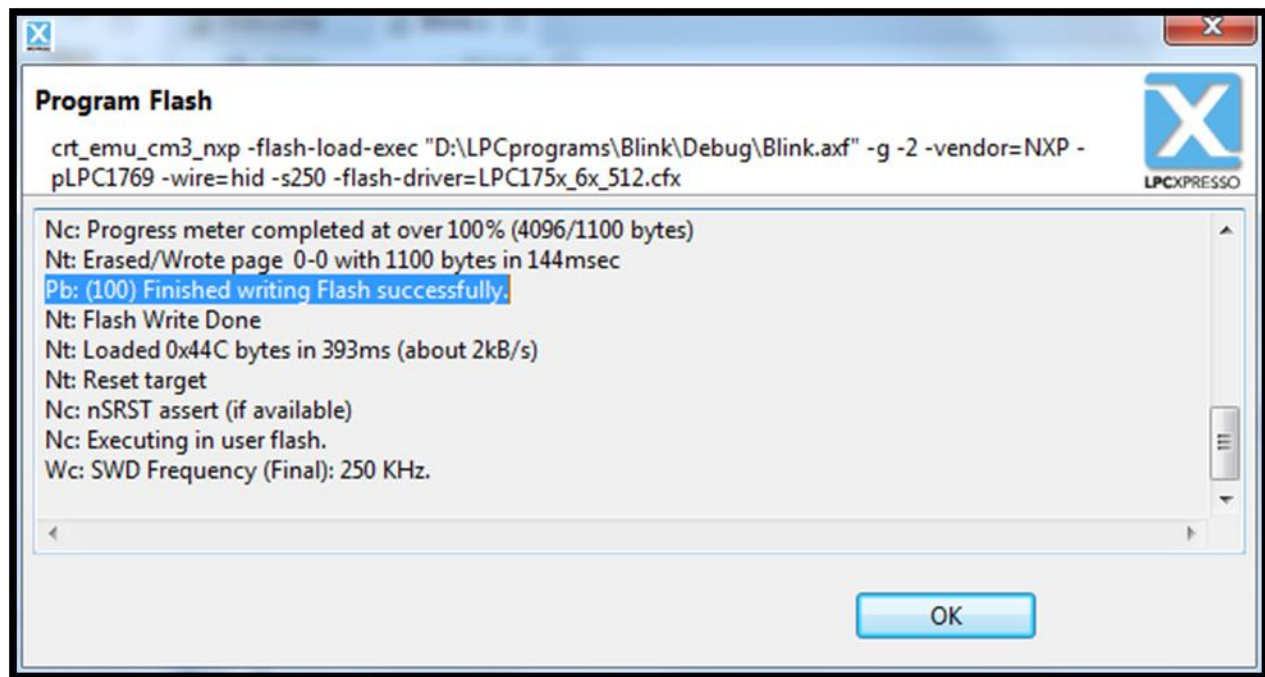


Fig. 15

CONNECTION DIAGRAM:

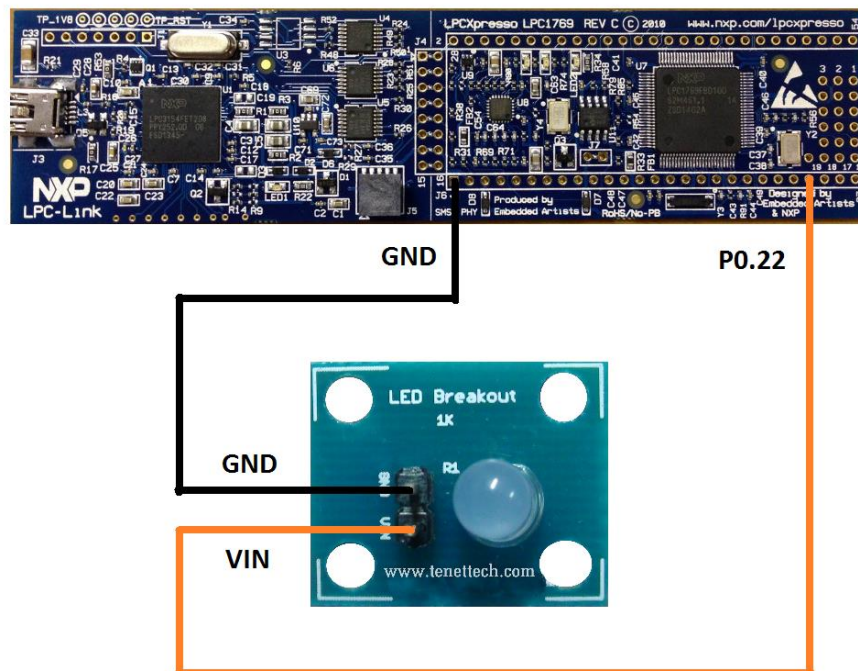


Fig. 16

OUTPUT:

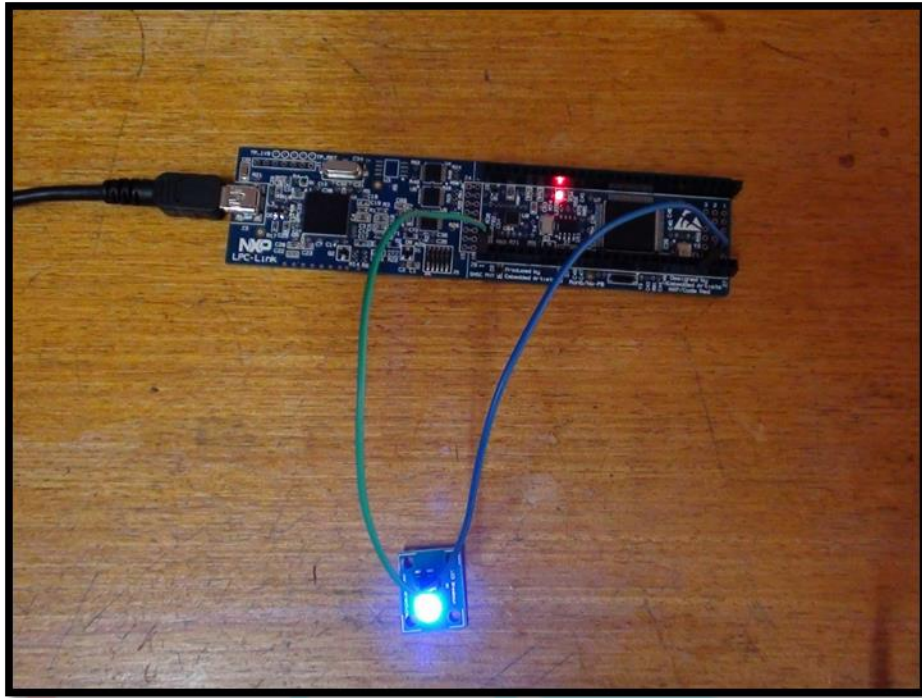


Fig. 17

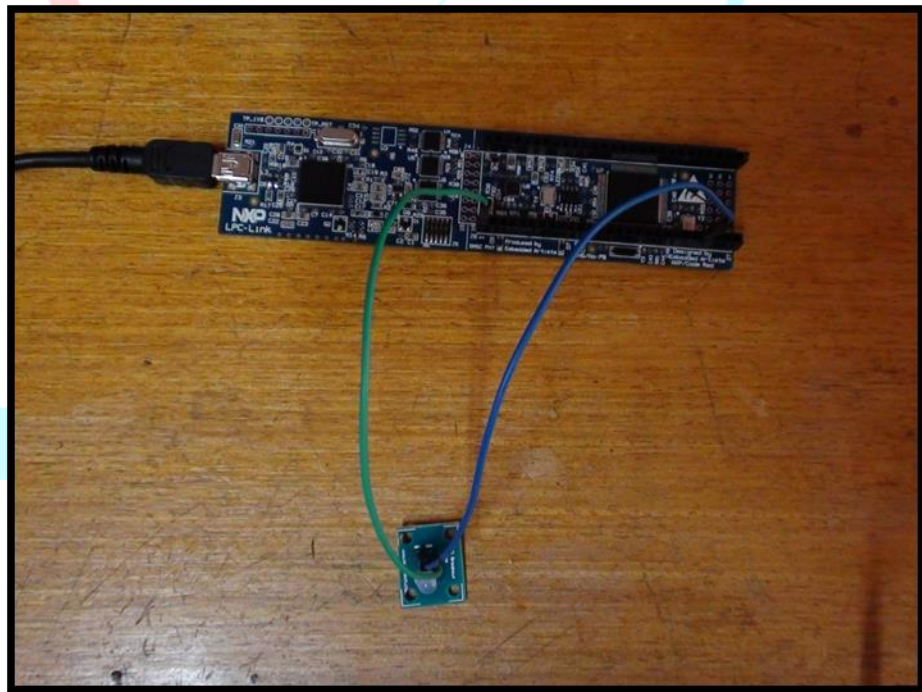


Fig. 18

For product link:

1. <http://www.tenettech.com/product/1548/lpc1769-lpcxpresso-board>
2. <http://tenettech.com/product/6655/universal-gpio-board>

For more information please visit: www.tenettech.com

For technical query please send an e-mail: info@tenettech.com

