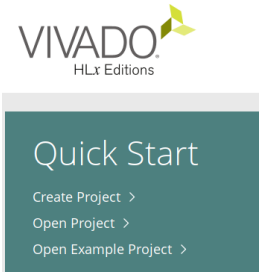
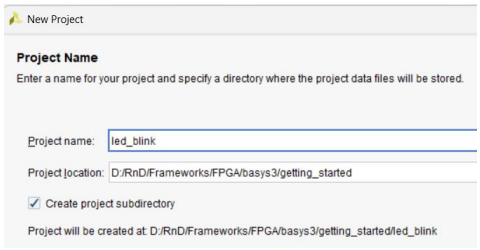
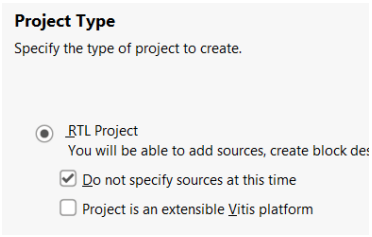
1- Open Vivado. Create project.

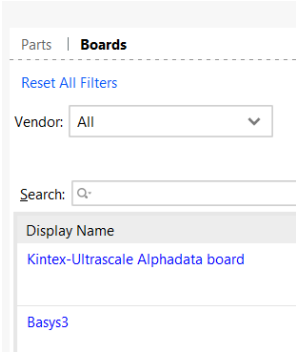




2- RTL project



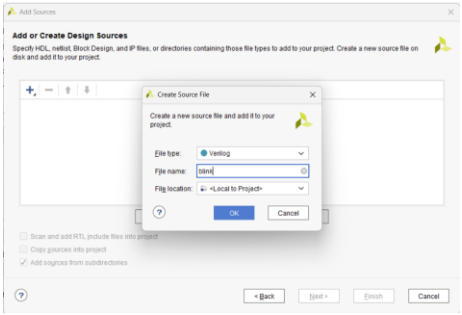
3- Select board “Basys3”

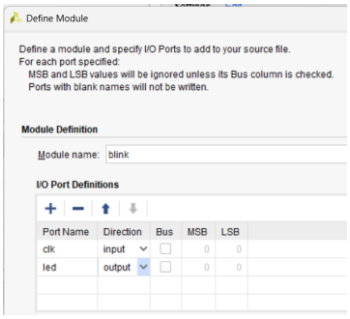


If board does not appear, install files manually. Download files from this link https://github.com/Digilent/vivado-boards/archive/master.zip Extract the folder “basys3” from the new/board_files folder and paste it to your vivado installation folder e.g. C:\Vivado\2018.2\data\boards\board_files Restart vivado.

See this link for details. https://digilent.com/reference/software/vivado/board-files

4- Add Source.

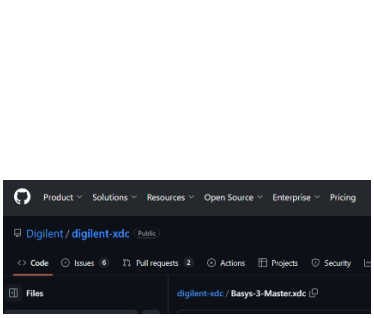


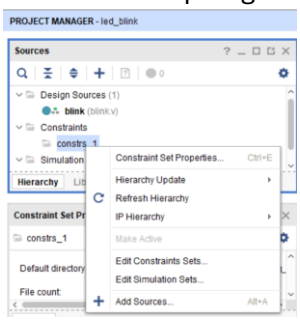


5- Write code to display led blinking at a slow rate.

```
module blink(
    input clk,
    output led
    );
    reg [25:0] slow = 0;
    always@(posedge clk)
        slow = slow + 1;
    assign led = slow[24];
endmodule
```

6- Download and add constraint file “https://github.com/Digilent/digilent-xdc/blob/master/Basys-3-Master.xdc”





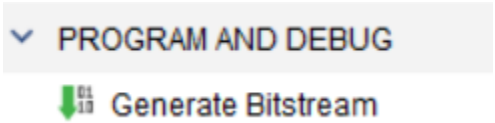
Uncomment clock signal line.

set_property -dict { PACKAGE_PIN W5 IOSTANDARD LVCMOS33 } [get_ports clk]

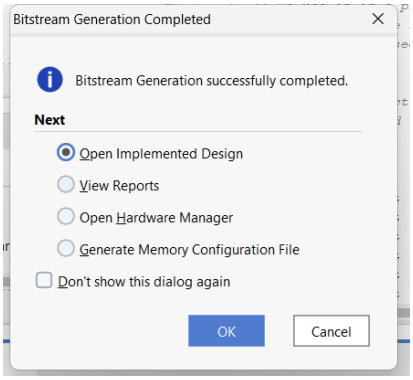
Uncomment and edit led signal line.

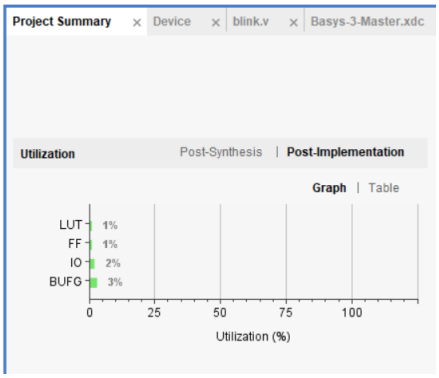
set_property -dict { PACKAGE_PIN U16 IOSTANDARD LVCMOS33 } [get_ports {led}]

7- Click “Generate Bitstream”. It will automatically synthesize, place and route etc.



8- Open design to look at the results of synthesis and implementation.





9- Click “Open Target”. Auto Connect. Program Device. LED should start blinking after programming.