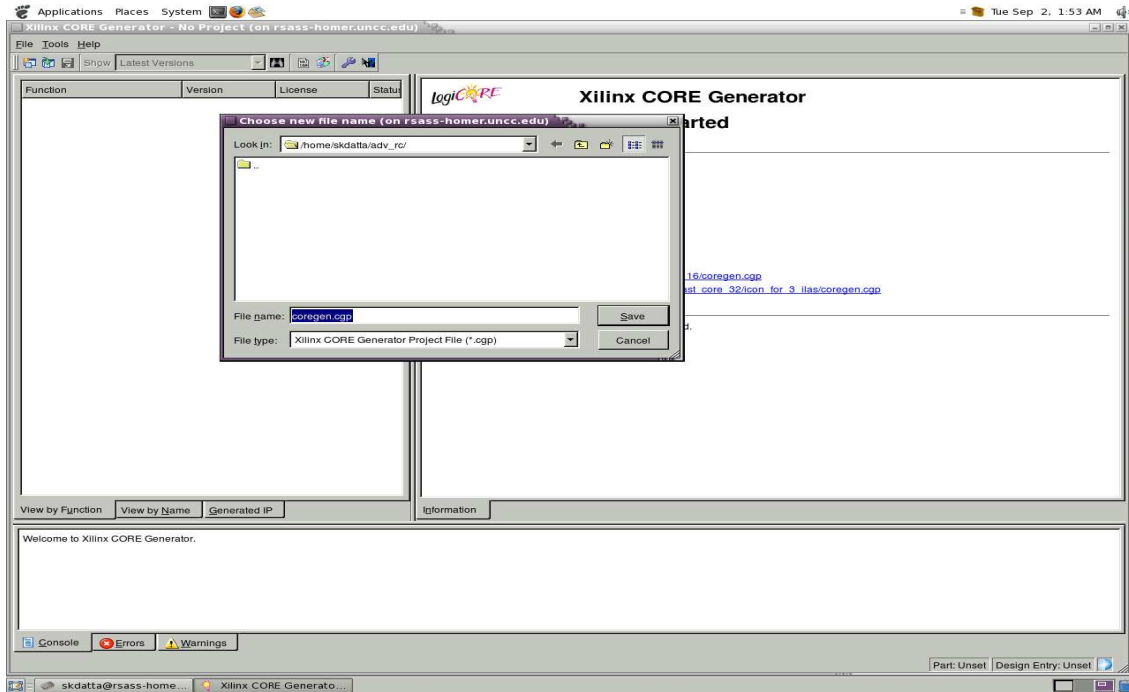
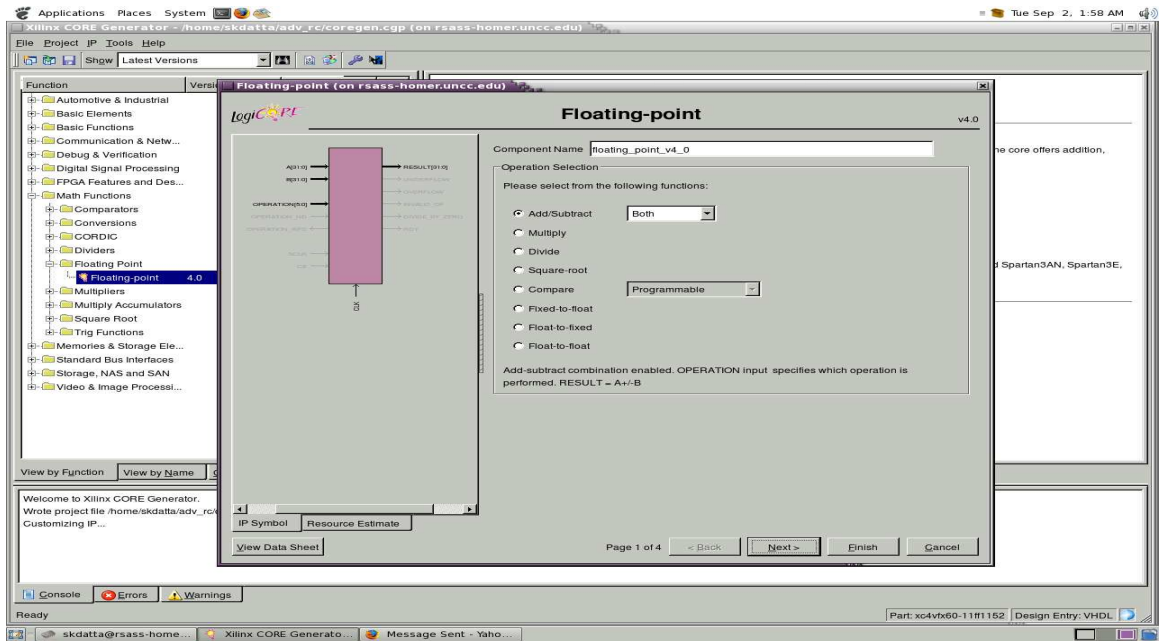
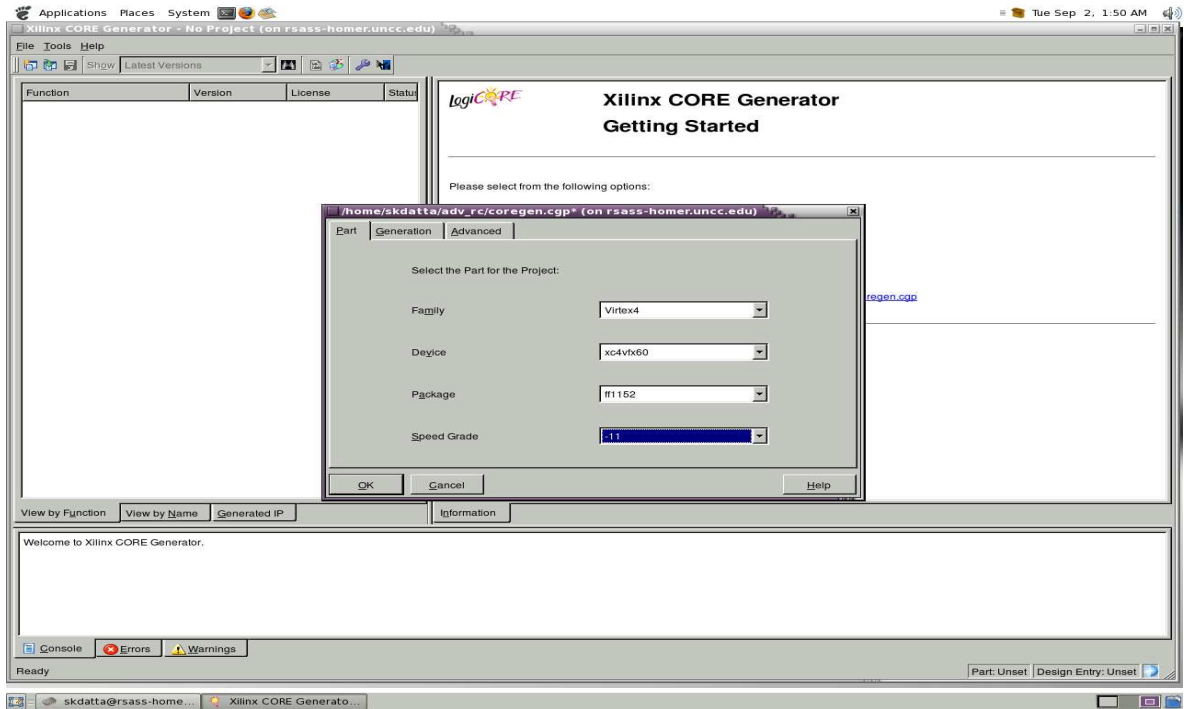


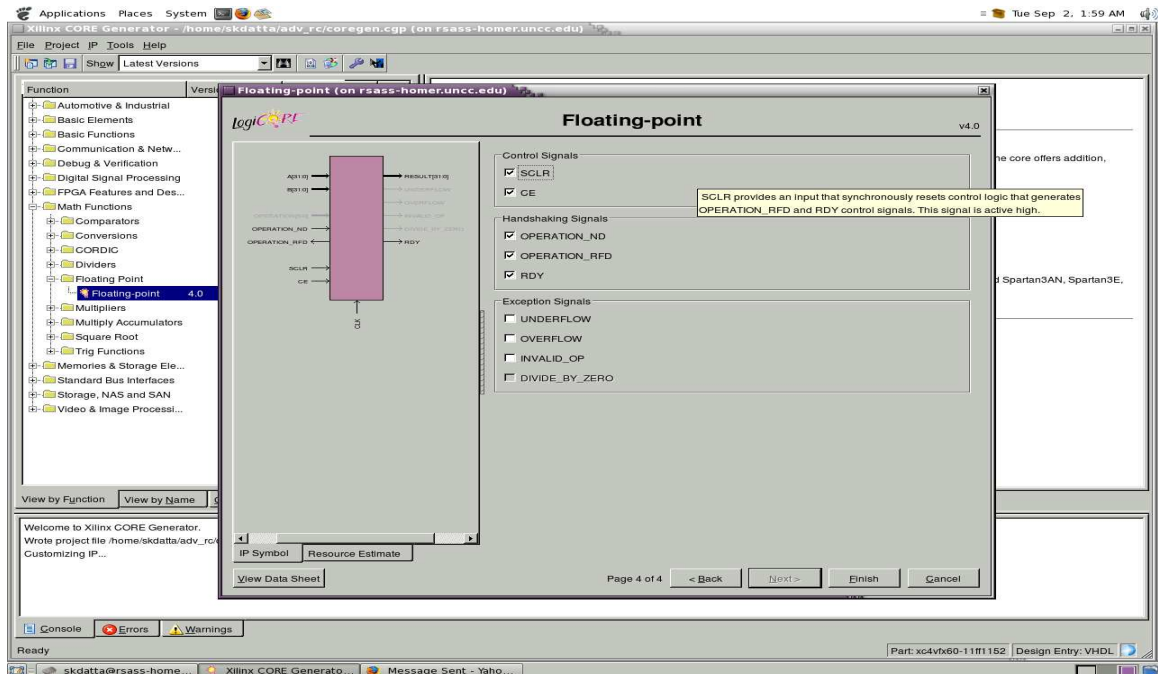
## NOTES ON USING COREGEN:

1. Source the 10.1 tools.  
source /opt/xilinx/10.1/settings.sh or  
. /opt/xilinx/10.1/settings.sh
2. Make a new directory where all the files COREGEN creates will be saved to.
3. On command line type coregen and hit enter.
4. Follow the next few steps:



Choose family : Virtex4  
Device : xc4vfx60  
Package : ff1152  
Speed grade: -11





5. Important files to note are the .ngc, .vhd and .vho files.
6. The .ngc file is used for synthesis purposes.
7. Copy the .vhd file generated by coregen to pcores/<core name>/hdl/vhdl .
8. In the user\_logic.vhd, the component has to be declared and port mapped to. This is available in the coregen .vhd or .vho files.

It should look similar to this in the user\_logic.vhd :

```

-----
-- Component: wrapped_floating_point_v3_0
-- Purpose: Floating Point Unit (Multiple)
-----

component floating_point_v3_0
port (
    a      : IN std_logic_VECTOR(63 downto 0);
    b      : IN std_logic_VECTOR(63 downto 0);
    result : OUT std_logic_VECTOR(63 downto 0);
    operation_nd : IN std_logic;
    operation_rfd : OUT std_logic;
    clk      : IN std_logic;
    ce      : IN std_logic;
    rdy      : OUT std_logic);
end component;

```

```

-----
-- FPU COMPONENT INSTANTIATION
-----

```

```

FPU : floating_point_v3_0
port map (
  clk      => Bus2IP_Clk,
  ce       => fpu_ce,
  a        => fpu_in1,
  b        => fpu_in2,
  result   => fpu_out,
  operation_nd => fpu_nd,
  operation_rfd => fpu_rfd,
  rdy      => fpu_rdy
);

```

---

Steps to add the component so that the synthesizer does not crash:

1. In pcores/<core\_name> create a new folder named “netlist”.
2. In this netlist folder, copy the <component\_name>.ngc.
3. In the pcores/<core\_name>/data folder create a new file named <core\_name\_version>.bbd

The .bbd file with 2 components added to the user\_logic.vhd will look like this:

FILES

<component1\_name>.ngc, <component2\_name>.bbd

4. In pcores/<core\_name>/data/<core\_name\_version>.mpd file, under “## Peripheral Options” add “OPTION STYLE = MIX”
5. The synthesis should be successful.