**Lab 14**

**Task:**

Introduction to MicroBlaze processor

**Objective**

To learn how to use Xilinx MicroBlaze Microcontroller

**Introduction**

MicroBlaze is Xilinx’s 32-bit RISC soft processor core, optimized for embedded applications on Xilinx devices. The MicroBlaze processor is easy to use and delivers the flexibility to select the combination of peripherals, memory, and interfaces as needed. The MicroBlaze soft processor core is included with the Xilinx software tools.

Graphical user interface, application

Description automatically generated

Figure 1: MicroBlaze Application Processor

**Steps to follow:**

1. Import the MicroBlaze IP core in the project design
2. Write Verilog code and instantiate the MicroBlaze processor and synthesize the design
3. Create New application using Xilinx SDK and generate .elf (executable and linkable file)
4. After Synthesis export the BMM file using the following command:

source ipcore\_dir/microblaze\_mcs\_setup.tcl

1. Implement the design and generate bit stream
2. Merge the .elf file with bit file using the following command:

microblaze\_mcs\_data2mem sdk/HelloWorld/Debug/HelloWorld.elf

1. Create bin file from bit using the following command:

promgen -w -p bin -u 0x0 helloworld.bit -spi -o helloworld