COEN 317 Lab 1 (UJ-X)

by

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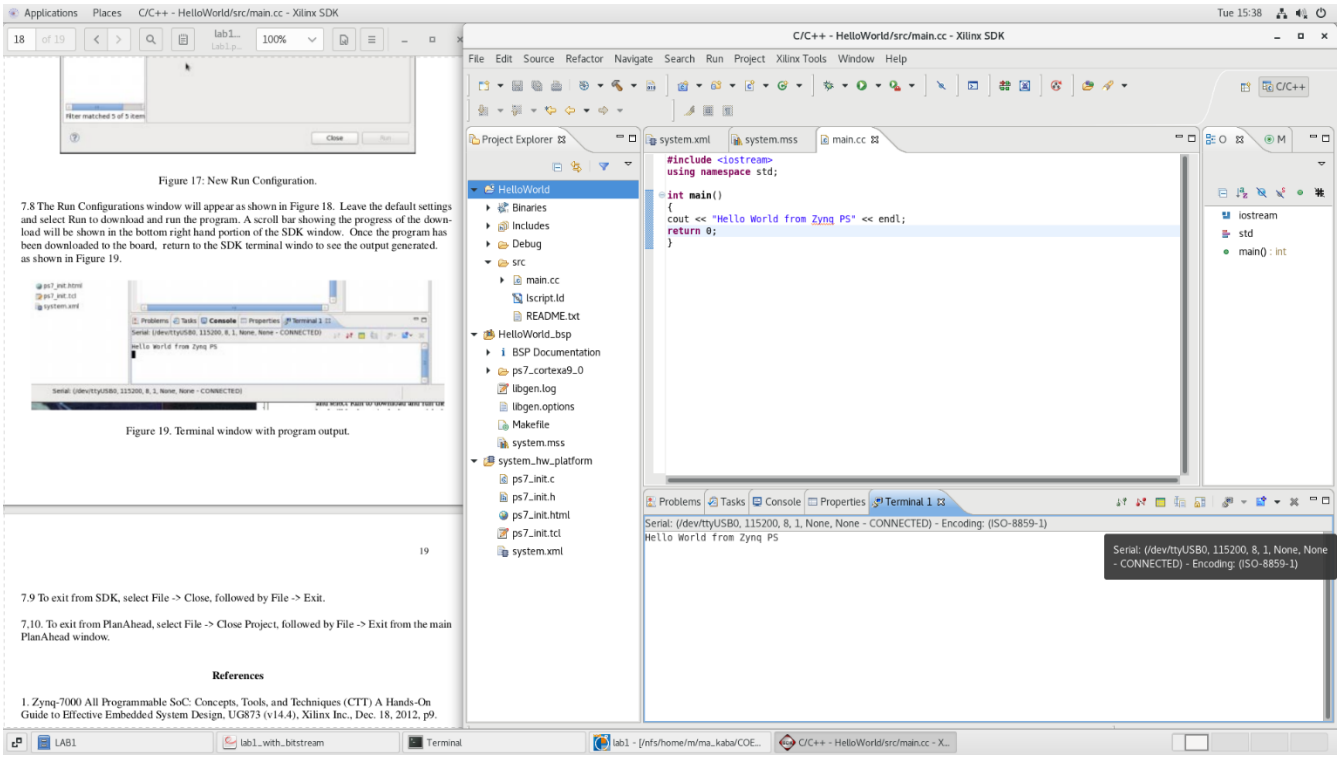
"I certify that this submission is my original work and meets the Faculty's Expectations of Originality"

Introduction

This lab introduces the Xilinx ZC702 development board and its key components: the XC7Z020 integrated circuit featuring a dual-core ARM Cortex A9 processor (PS) and a field-programmable gate array (PL) for hardware logic implementation. We'll explore Xilinx's software tools essential for developing applications tailored to the ZC702's capabilities.

Results



The primary tools utilized in this lab include PlanAhead, which is employed to integrate design sources into the hardware. These sources may take the form of user-provided VHDL programs for FPGA programming or custom Intellectual Property (IP) such as floating-point multipliers generated with Xilinx Coregen. Additionally, Xilinx Platform Studio (XPS) is utilized for customizing processor hardware and programmable logic, configuring the hardware and exporting it to the Software Development Kit (SDK). The SDK, based on the

Eclipse framework, facilitates programming of the processor, offering a C/C++ GNU compiler/debugger for the ARM Cortex A9 processor. Within the SDK environment, applications are written, compiled, downloaded, and executed on the ZC702 development board's processor. Moreover, SDK enables terminal setup between the host computer and the ZC702 board, facilitating console input/output for the programmed applications. **Using C++, we were able to create a simple HelloWord program.**

Conclusion

To conclude, in this first lab, we familiarize ourselves with the tools that will be later used in the following labs like PlanAhead and Xilinx ZC702. And finally, a helloWorld program was build.