Lab1 Intro
Create a Processor System with Zynq

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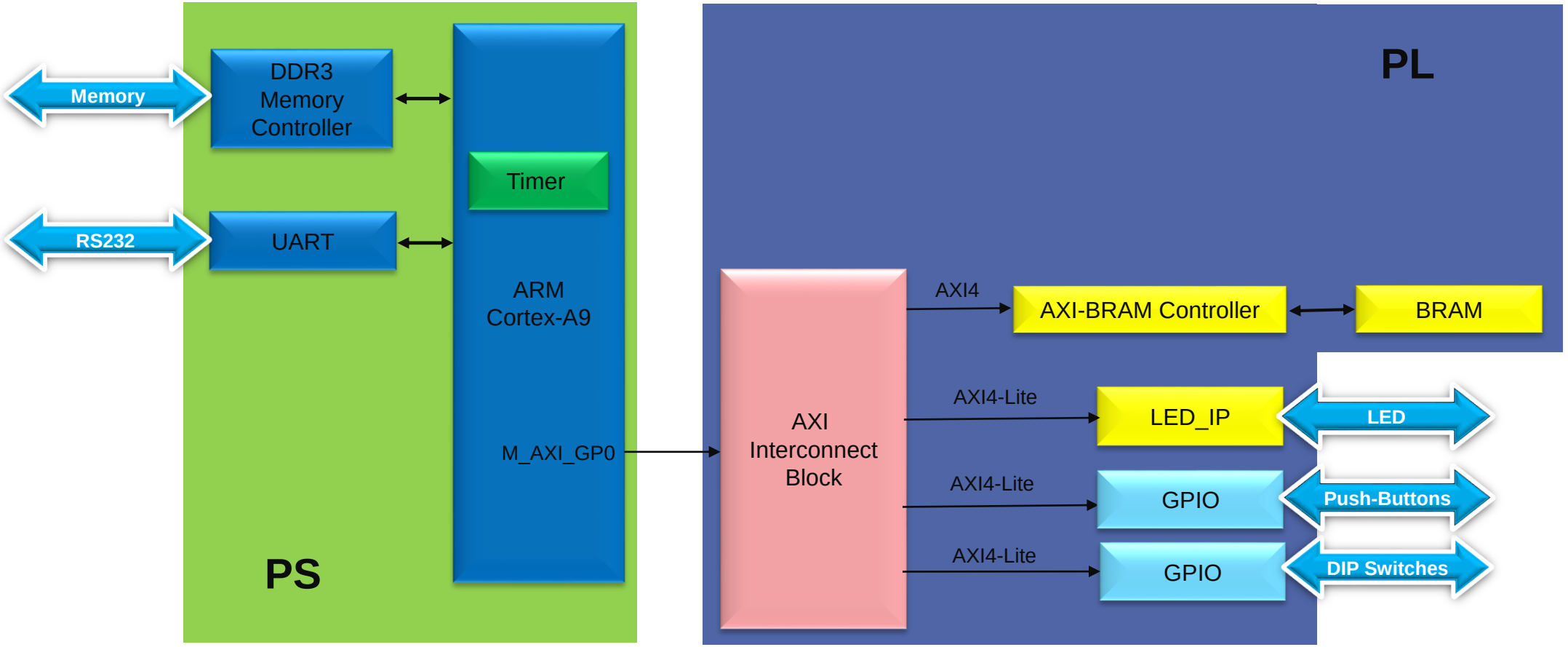
ARM Cortex-A9 based Embedded System Design Lab1 through Lab5

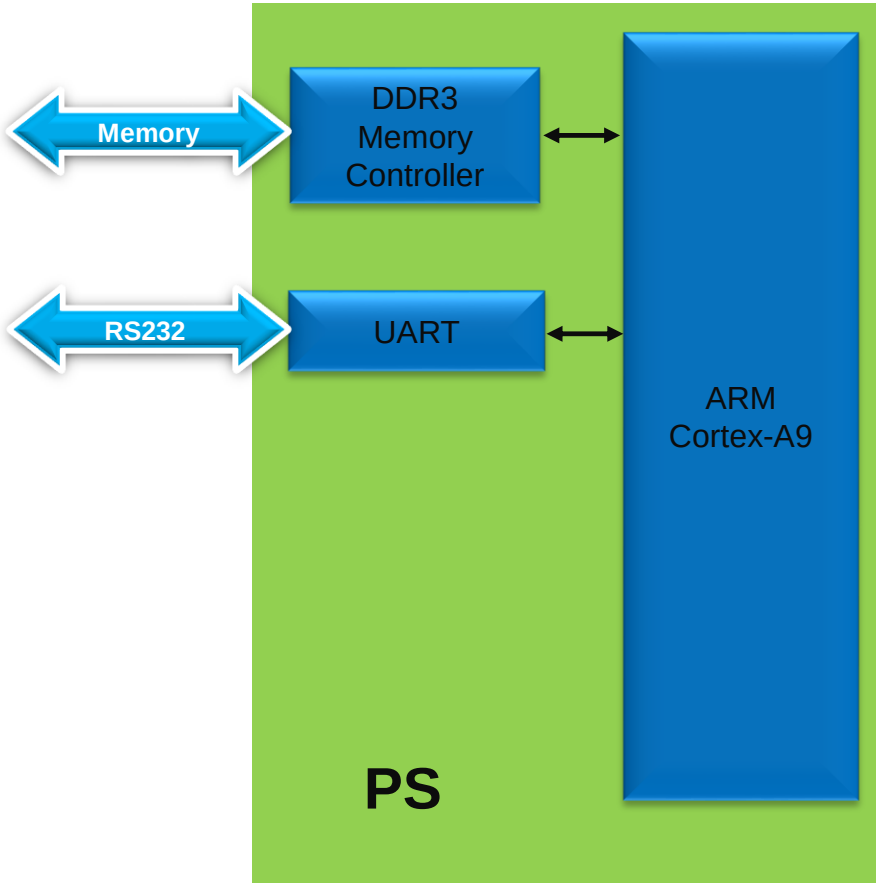


Lab4 uses hardware built in Lab3

Introduction

- **This lab guides you through the process of using Vivado and IP Integrator to create a simple ARM Cortex-A9 based processor system**
- **Targeting the Zedboard or ZYBO board**
  - Very similar steps, differences pointed out in the instructions
  - Follow the instructions for the board you are using
- **You will use Vivado to create the system and generate a software application from one of the standard project templates in SDK to verify the hardware functionality**

ARM Cortex-A9 based Embedded System Design
Lab1: Use Vivado to Create a System



Procedure

- Create a project using Vivado
- Invoke IP Integrator from Vivado and build basic system
- Generate top-level HDL in Vivado and Export to SDK
- Generate a simple memory test application in SDK
- Verify the functionality in hardware

Summary

- Vivado software allows creating or adding an embedded processor source and invoking IP Integrator.
- A block diagram, representing the hardware design, provides hardware system parameters information.
- After the system has been defined and configured, the hardware can be exported and SDK can be invoked from Vivado.
- Software development is done in SDK which provides several application templates including memory tests.
- You verified the hardware operation by downloading the test application, executing on the processor, and observing the output in the serial terminal window.