SIT111 - Task 4.1P

Implement 16-bit register in HDL

Overview

Multi-bit registers can be constructed using a series of 1-bit registers. Your task is to implement a 16-bit register using Hardware Description Language (HDL).

Task requirements

a. Go through week 4 class materials on Google Classroom & complete the practice problems in week 4
b. Read the task instructions

Task Instructions

1. Using your knowledge gained from the learning materials and learning sessions in week 3, write an HDL program to implement a 16-bit register.
2. You can use any built-in chip to implement this.
3. Use the provided test scripts in task resources to test your implementation.
4. Upload the script to the Hardware Simulator tool.
5. Run and validate your HDL program with the test script.
6. Upload Your HDL program (a .hdl file) and a document (1 page max) describing how you arrived at the solution to OnTrack.

At this time, due to a technical issue in OnTrack, .hdl files cannot be uploaded there. Therefore, please either

a. Upload your HDL program (a .hdl file) to a shared repository (eg. Github) or a shared folder (eg. on google drive or OneDrive), then include the link in a text file (.txt) and upload to OnTrack. If you do this, please make sure the file is accessible to the markers. You will need to set appropriate sharing permissions.
OR
b. Rename the file extension of your .hdl file to .txt and upload to Google Classroom.

Reference

Nisan, Noam, and Shimon Schocken. *The Elements of Computing Systems : Building a Modern Computer from First Principles* MIT Press, 2005
Floyd, L., Thomas. *Digital Fundamentals.* Prentice-Hall International, 2003