CS2610 Computer Organization Laboratory

Lab - 9

Objective:

In this lab you will design a simple automatic temperature controller using MIPS assembly.

Problem:

The temperature inside a laboratory should be maintained at 20^0C. Design a temperature controller system that operates as below:

The system should poll for the outside temperature every 60 time units. The temperature thus obtained must be then adjusted to get the required room temperature (20^0C).

After each poll, the difference between the temperature outside and the required room temperature must be stored in an array named 'error_array'.

This process should continue until the outside temperature becomes equal to the required room temperature. **It should be ensured that the temperature outside has become stable.**

Once the temperature outside is stable, display the error_array.

Use loops, procedures, nested procedures for iterative and reusable operations respectively. Provide comments and display statements wherever required.

Post-lab:

Submit a post-lab report with your verified outputs. The report should include your well commented code snippets, snapshots of the changes observed in the registers, data segments with proper explanation.

All your submissions should be clear and concise.