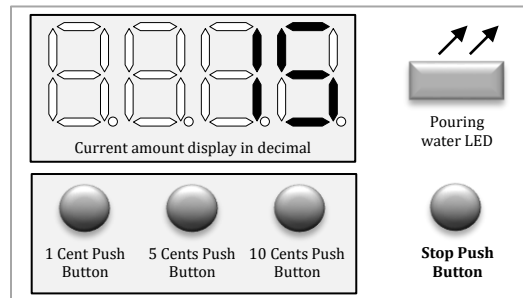




CSCE2302 - Digital Design I Lab Project

Water Vending Machine



A water vending machine is a machine that provides water by inserting money. We simulate the money insertion using 3 push buttons to insert either 1, 5, or 10 Cents. The total amount of inserted money is always displayed on the seven-segment display. Once the amount reaches 20 Cents, water pours until the Stop push button is pressed. If the inserted amount X is greater than 20 cents, the water pours and the displayed amount changes to $X-20$.

An LED is used to indicate if water is pouring (ON: water is pouring, OFF: water is not pouring). If the user does not press any button for 30 seconds, the system resets and displays a zero amount.

Use the Basys 3 board to design and implement the full function of the water vending machine. If you work on the project remotely, use the UART to mimic push buttons presses remotely.

Notes:

- The project is individual.
- Submissions:
 1. Project Source Code
 2. Report
 3. A video where you present the outcome you reached and talk while testing the system. The video is suggested not to exceed 5 minutes, please make sure to use a reasonable encoding for the encoding/compression so the video file size is small to download.
- Please do not work on the lab PC & hardware for more than consecutive 2 hours to have rest and to give room for your colleagues to use it. The VNC server does not allow more than one person to connect to the machine at a time. To reduce your dependency on the lab PC & hardware, you can rely on <https://cloudv.io> to work on your project development online and to synthesize and solve bugs and errors before testing on Vivado tool & the real hardware.
- Please remove your code and work files from the machine before leaving it. If you plan to continue working on it later, you can send the files to yourself via email or compress it with a password. Detected violations will cause a grade deduction.

Coding (55)	
Synthesis & UCF (5)	
Downloading & Testing (40)	
Total (100)	

*With best wishes,
Dr. Hehsam M. Eraqi*