FPGA Demonstration 2

- Four options available: **Coffee**, **Coke**, **Oolong**, and **Water**
  - Prices are: **Coffee** (**NT$ 80**), **Coke** (**NT$ 30**), **Oolong** (**NT$ 25**), **Water** (**NT$ 20**)
- The **rightmost three 7-segment displays** show the money inserted into the machine
  - When **rst_n** == **1'b1**, please display "0"
  - The maximum value is **NT$ 100**
  - **Do not prepend '0' when you only have one or two digits to display**
- Use **five buttons** to implement your design:
  - **Left: NT$ 5**
  - **Center: NT$ 10**
  - **Right: NT$ 50**
  - **Top: rst_n**
  - **Bottom: Cancel**

FPGA Demonstration 2

- Use **four LEDs** to indicate which drinks you can buy
  - **LED[3:0]** corresponds to Coffee, Coke, Oolong, and Water, respectively
- Use the **keyboard** to select which drinks you buy
  - **'a', 's', 'd', 'f'** corresponds to **Coffee**, **Coke**, **Oolong**, and **Water**, respectively
  - Assume that the machine allows you to buy **ONLY ONE DRINK** at a time
- Use the **rightmost three 7-segment display** to **show the rest of the money** after buying a drink
  - E.g., if you inserted **NT$ 40** and bought a can of **Oolong** (**NT$ 25**), the 7-segment display will show **NT$ 15**

FPGA Demonstration 2

- Remember to add debounce and one-pulse circuits to your buttons
- Decrement the **7-segment display** by **NT$ 5** every second to mimic the process of returning changes
  - Return the changes until it becomes zero
- If the buyer does not want to buy a drink, he/she can use a **Cancel Button** to cancel it
  - The inserted money will be returned the same way (**NT$ 5** per second)

The layout of the buttons used in this question