Self-testcases for CS301 programming assignment 1

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Part1:

(1) Decode mode:

input: `00111100`

expected observation results:

LCD output: `HI`

LED output: LED0 blinks once, LED0 blinks once, LED1 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**, LED1 blinks once, LED1 blinks once, LED0 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**.

(2) Encode mode:

input: `BUS`

expected observation results:

LCD output: `101001100111000`

LED output: LED1 blinks once, LED0 blinks once, LED1 blinks once, LED0 blinks once, LED0 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**, LED1 blinks once, LED0 blinks once, LED0 blinks once, LED1 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**, LED1 blinks once, LED0 blinks once, LED0 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**.

Part2:

(1) Exception handling:

- Decode mode:

input: `011000101`

expected observation results:

LCD output: `EA Decode Error: 101`

LED output: LED0 blinks once, LED1 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**, LED0 blinks once, LED0 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**, **turn on LED0 and blink LED1 three times at same time**.

- Encode mode:

input: `L05E`

expected observation results:

LCD output: `11010 Encode Error: 0 Encode Error: 5 011`

LED output: LED1 blinks once, LED1 blinks once, LED0 blinks once, LED1 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**, **turn on LED1 and blink LED0 three times at same time**, **turn on LED1 and blink LED0 three times at same time**, LED0 blinks once, LED1 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**.

(2) Case insensitive and trim blank characters in Encode mode:

input: `I am Q`

expected observation results:

LCD output: `1100000010010010001001`

LED output: LED1 blinks once, LED1 blinks once, LED0 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**, LED0 blinks once, LED0 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**, LED0 blinks once, LED1 blinks once, LED0 blinks once, LED0 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**, LED0 blinks once, LED0 blinks once, LED1 blinks once, LED0 blinks once, LED0 blinks once, LED0 blinks once, LED1 blinks once, LED0 blinks once, LED0 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**.

(3) Show decode and encode progress:

- Decode mode:

input: `001001000`

expected observation results:

LCD output:

`%2023/10/24 19:39:46% G`

`%2023/10/24 19:39:54% A`

LED output: LED0 blinks once, LED0 blinks once, LED1 blinks once, LED0 blinks once, LED0 blinks once, LED1 blinks once,**LED0 and LED1 blinks two times at the same time**, LED0 blinks once, LED0 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**.

- Encode mode:

input: `AT`

expected observation results:

LCD output:

`%2023/10/24 19:41:11% 000`

`%2023/10/24 19:41:16% 1111`

LED output: LED0 blinks once, LED0 blinks once, LED0 blinks once, **LED0 and LED1 blinks two times at the same time**. LED1 blinks once, LED1 blinks once, LED1 blinks once, LED1 blinks once, **LED0 and LED1 blinks two times at the same time**.