Programming of Embedded Systems

Laboratory work No.4

Virtual COM Port (VCP)

1st Example

```
from pyb import USB_VCP

vcp = USB_VCP()

while True:
    cmd = vcp.recv(1, timeout=5000)
    if (cmd == b'm'):
        vcp.send("message received \r\n", timeout=5000)
```

Individual task:

Microcontroller: STM32F756ZG
Board: Nucleo F756ZG
Compiler: MicroPhyton

Write a program to implement data communication between microcontroller and PC COM port.

Use your own proprietary message format for communication to control:
to turn ON / turn OFF LED_A
to change the PWM signal duty cycle on LED_B (PWM frequency on your own choice)
to receive the state of SW pin.

Table 1

No.	LED_A	LED_B
1	LED1	LED2
2	LED1	LED3
3	LED2	LED1
4	LED2	LED3
5	LED3	LED1

6	LED3	LED2
7	LED1	LED2
8	LED1	LED3
9	LED2	LED1
10	LED2	LED3
11	LED3	LED1
12	LED3	LED2
13	LED1	LED2
14	LED1	LED3
15	LED2	LED1
16	LED2	LED3
17	LED3	LED1
18	LED3	LED2
19	LED1	LED2
20	LED1	LED3
21	LED2	LED1
22	LED2	LED3
23	LED3	LED1
24	LED3	LED2
25	LED1	LED2
26	LED1	LED3
27	LED2	LED1
28	LED2	LED3
29	LED3	LED1
30	LED3	LED2

Report:
1. The aim of the laboratory work.
2. Variant No and data.
3. Program algorithm.
4. Program body with comments.
5. Conclusions.