# T.C.
# DOKUZ EYLUL UNIVERSTY

# FACULTY OF ENGINEERING

# DEPARTMENT OF COMPUTER ENGINEERING

# 2021 - 2022
# SPRING SEMESTER

# CME 3208
# PRINCIPLES OF EMBEDDED SYSTEMS

# LAB 5 – 29.03.2022
# BUZZER CONTROLLER

In this lab, you are required to program a buzzer control program over serial monitor. You should take 4 inputs over serial monitor, first one is the length of buzzer sound, second is the length of silence between sounds, third is the length of silence between periods and fourth is the sound string that will be played on buzzer, where 0 is silence and 1 is sound. Buzzers can create different sounds with different inputs but for this lab only a single sound is enough. An example interaction of serial monitor is given below.

```
PLEASE ENTER SOUND   DURATION (MS): 500
PLEASE ENTER SILENCE DURATION (MS): 50
PLEASE ENTER FINISH  DURATION (MS): 1000
PLEASE ENTER SOUND   STRING       : 101011
```

After the input as it is given above, the execution of buzzer should be like below.

| CURRENT TIME (MS) | SOUND STRING CHARACTER | BUZZER STATUS (ON or OFF) |
|---|---|---|
| 0 | 1 | ON |
| 500 | SILENCE | OFF |
| 550 | 0 | OFF |
| 1050 | SILENCE | OFF |
| 1100 | 1 | ON |
| 1600 | SILENCE | OFF |
| 1650 | 0 | OFF |
| 2150 | SILENCE | OFF |
| 2200 | 1 | ON |
| 2700 | SILENCE | OFF |
| 2750 | 1 | ON |
| 3750 | FINISH | OFF |
| CONTINUE EXECUTION FROM FIRST ROW | | |

For this lab session consider the following two scenarios. First, the silence and finish duration could be 0 but sound duration should not be, otherwise the program would not work correctly. Second, the sound string could be used and modified to represent other musical sounds, you can find relevant tutorials about this operation online. This is not a requirement for this lab but for other labs, it could be requested.

# GOOD LUCK TO YOU ALL!