KLE Technological University
Creating Value
Leveraging Knowledge
KLE TECH

Real-Time Operating System
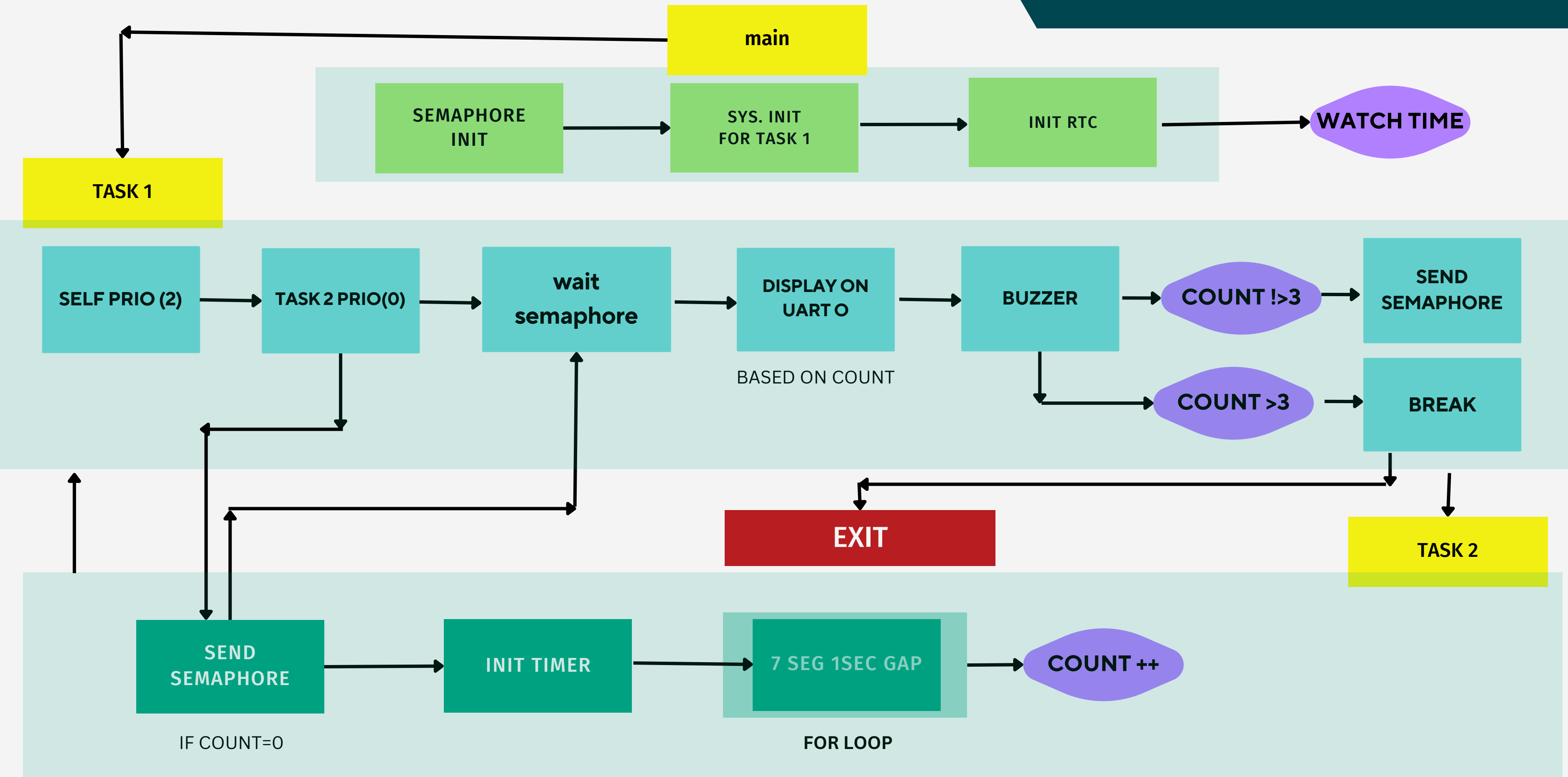
COURSE PROJECT

SHREYAS M MURAGODMATH
01FE20BEC223-5TH SEM
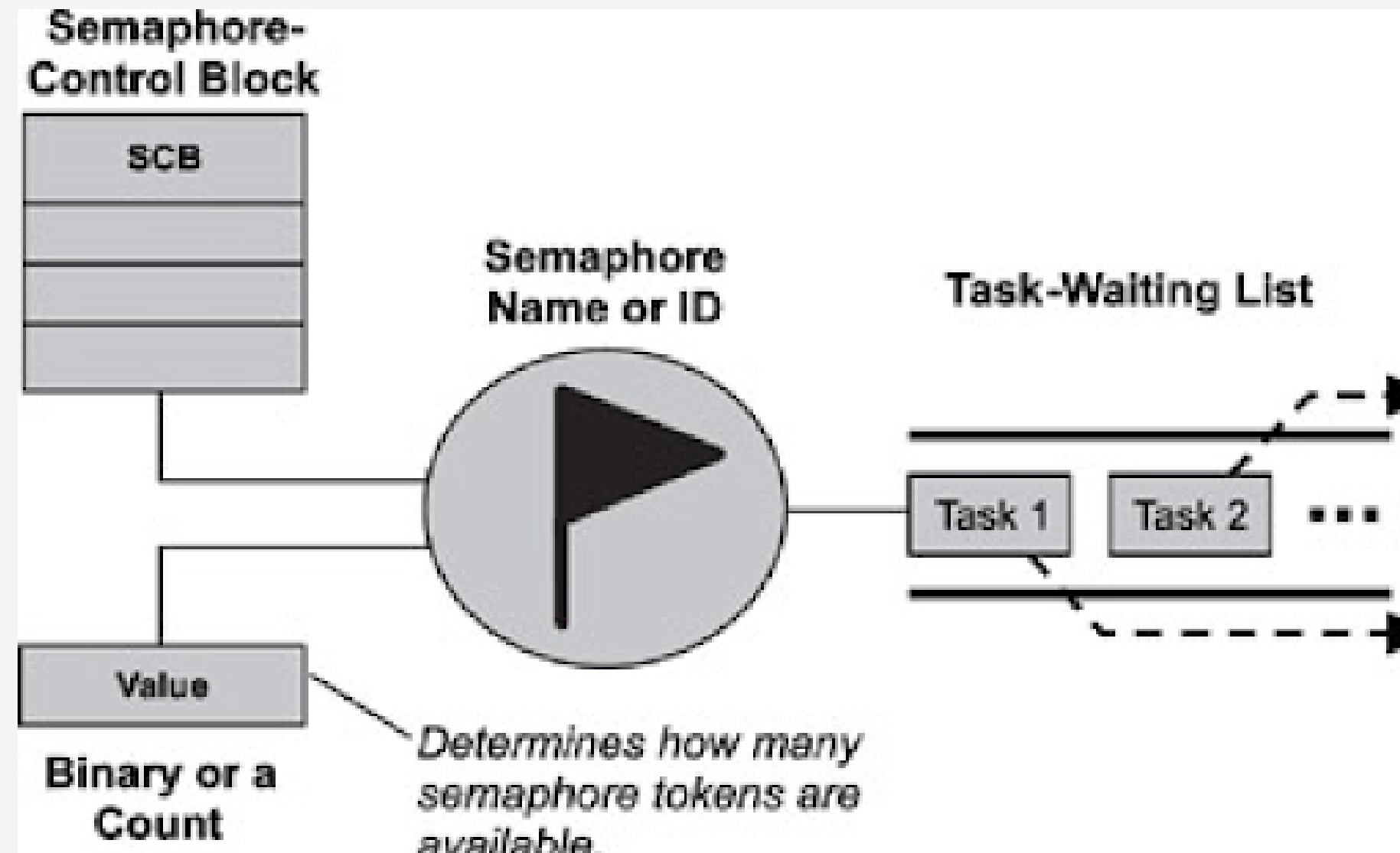
Under the Guidance of
Asst Prof. Supriya V katwe

PROGRAM PIPELINE

main

SEMAPHORE INIT → SYS. INIT FOR TASK 1 → INIT RTC → WATCH TIME

TASK 1

SELF PRIO (2) → TASK 2 PRIO(0) → wait semaphore → DISPLAY ON UART O → BUZZER → COUNT !>3 → SEND SEMAPHORE

BASED ON COUNT

BUZZER → COUNT >3 → BREAK

EXIT

TASK 2

SEND SEMAPHORE → INIT TIMER → 7 SEG 1SEC GAP → COUNT ++

IF COUNT=0

FOR LOOP

Kernel Object: Semaphore

- A semaphore (sometimes called a semaphore token) is a kernel object that one or more threads of execution can acquire or release for the purposes of synchronization or mutual exclusion.
- When a semaphore is first created, the kernel assigns to it an associated semaphore control block (SCB), a unique ID, a value (binary or a count), and a task-waiting list.

Semaphore-Control Block

SCB

Semaphore Name or ID

Task-Waiting List

Task 1 Task 2 • • •

Value

Binary or a Count

Determines how many semaphore tokens are available.

THANK YOU