CG2271
Final Exam Reference Sheet

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osThreadId_t osThreadNew (osThreadFunc_t func,
      void *   argument,
      const osThreadAttr_t * attr
)

Parameters
 [in] **func** thread function.
 [in] **argument** pointer that is passed to the thread function as start argument.
 [in] **attr** thread attributes; NULL: default values.

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osMutexId_t osMutexNew (const osMutexAttr_t * attr)

Parameters
 [in] **attr** mutex attributes; NULL: default values.

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osStatus_t osMutexAcquire (osMutexId_t mutex_id,
      uint32_t timeout
)

Parameters
 [in] **mutex_id** mutex ID obtained by **osMutexNew**.
 [in] **timeout** Timeout Value or 0 in case of no time-out.

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osStatus_t osMutexRelease (osMutexId_t mutex_id)

Parameters
 [in] **mutex_id** mutex ID obtained by **osMutexNew**.

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osSemaphoreId_t osSemaphoreNew (uint32_t   **max_count,**
uint32_t   **initial_count,**
const osSemaphoreAttr_t *   **attr**
)

Parameters

     [in] **max_count**   maximum number of available tokens.
     [in] **initial_count** initial number of available tokens.
     [in] **attr**   semaphore attributes; NULL: default values.

osStatus_t osSemaphoreAcquire (osSemaphoreId_t semaphore_id,
uint32_t   **timeout**
)

Parameters

     [in] **semaphore_id** semaphore ID obtained by **osSemaphoreNew**.
     [in] **timeout**   **Timeout Value** or 0 in case of no time-out.

osStatus_t osSemaphoreRelease (osSemaphoreId_t semaphore_id)

Parameters

     [in] **semaphore_id** semaphore ID obtained by **osSemaphoreNew**.

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uint32_t osThreadFlagsSet (osThreadId_t thread_id,
uint32_t   flags
)

Parameters
  [in] **thread_id** thread ID obtained by **osThreadNew** or **osThreadGetId**.
  [in] **flags**   specifies the flags of the thread that shall be set.

uint32_t osThreadFlagsWait (uint32_t flags,
uint32_t options,
uint32_t timeout
)

Parameters
  [in] **flags**   specifies the flags to wait for.
  [in] **options** specifies flags options (osFlagsXxxx).
  [in] **timeout Timeout Value** or 0 in case of no time-out.

osEventFlagsId_t osEventFlagsNew (const osEventFlagsAttr_t * attr)

Parameters
[in] **attr** event flags attributes; NULL: default values.

uint32_t osEventFlagsSet (osEventFlagsId_t ef_id,
uint32_t flags
)

Parameters
[in] **ef_id** event flags ID obtained by **osEventFlagsNew**.
[in] **flags** specifies the flags that shall be set.

uint32_t osEventFlagsWait (osEventFlagsId_t ef_id,
uint32_t flags,
uint32_t options,
uint32_t timeout
)

Parameters
[in] **ef_id** event flags ID obtained by **osEventFlagsNew**.
[in] **flags** specifies the flags to wait for.
[in] **options** specifies flags options (osFlagsXxxx).
[in] **timeout** Timeout Value or 0 in case of no time-out.

osMessageQueueId_t osMessageQueueNew (uint32_t   msg_count,
                                   uint32_t   msg_size,
                                   const osMessageQueueAttr_t * attr
)

Parameters
    [in] **msg_count** maximum number of messages in queue.
    [in] **msg_size**   maximum message size in bytes.
    [in] **attr**   message queue attributes; NULL: default values.

osStatus_t osMessageQueuePut (osMessageQueueId_t mq_id,
                               const void *   msg_ptr,
                               uint8_t   msg_prio,
                               uint32_t   timeout
)

Parameters
    [in] **mq_id**   message queue ID obtained by **osMessageQueueNew**.
    [in] **msg_ptr**   pointer to buffer with message to put into a queue.
    [in] **msg_prio** message priority.
    [in] **timeout**   **Timeout Value** or 0 in case of no time-out.

osStatus_t osMessageQueueGet (osMessageQueueId_t mq_id,
                               void *   msg_ptr,
                               uint8_t *   msg_prio,
                               uint32_t   timeout
)

Parameters
    [in] **mq_id**   message queue ID obtained by **osMessageQueueNew**.
    [out] **msg_ptr**   pointer to buffer for message to get from a queue.
    [out] **msg_prio** pointer to buffer for message priority or NULL.
    [in] **timeout**   **Timeout Value** or 0 in case of no time-out.

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Priority Levels for Tasks

```
enum   osPriority_t {
        osPriorityNone = 0,
        osPriorityIdle = 1,
        osPriorityLow = 8,
        osPriorityLow1 = 8+1,
        osPriorityLow2 = 8+2,
        osPriorityLow3 = 8+3,
        osPriorityLow4 = 8+4,
        osPriorityLow5 = 8+5,
        osPriorityLow6 = 8+6,
        osPriorityLow7 = 8+7,
        osPriorityBelowNormal = 16,
        osPriorityBelowNormal1 = 16+1,
        osPriorityBelowNormal2 = 16+2,
        osPriorityBelowNormal3 = 16+3,
        osPriorityBelowNormal4 = 16+4,
        osPriorityBelowNormal5 = 16+5,
        osPriorityBelowNormal6 = 16+6,
        osPriorityBelowNormal7 = 16+7,
        osPriorityNormal = 24,
        osPriorityNormal1 = 24+1,
        osPriorityNormal2 = 24+2,
        osPriorityNormal3 = 24+3,
        osPriorityNormal4 = 24+4,
        osPriorityNormal5 = 24+5,
        osPriorityNormal6 = 24+6,
        osPriorityNormal7 = 24+7,
        osPriorityAboveNormal = 32,
        osPriorityAboveNormal1 = 32+1,
        osPriorityAboveNormal2 = 32+2,
        osPriorityAboveNormal3 = 32+3,
        osPriorityAboveNormal4 = 32+4,
        osPriorityAboveNormal5 = 32+5,
        osPriorityAboveNormal6 = 32+6,
        osPriorityAboveNormal7 = 32+7,
        osPriorityHigh = 40,
        osPriorityHigh1 = 40+1,
        osPriorityHigh2 = 40+2,
        osPriorityHigh3 = 40+3,
        osPriorityHigh4 = 40+4,
        osPriorityHigh5 = 40+5,
        osPriorityHigh6 = 40+6,
        osPriorityHigh7 = 40+7,
        osPriorityRealtime = 48,
        osPriorityRealtime1 = 48+1,
        osPriorityRealtime2 = 48+2,
        osPriorityRealtime3 = 48+3,
        osPriorityRealtime4 = 48+4,
        osPriorityRealtime5 = 48+5,
        osPriorityRealtime6 = 48+6,
        osPriorityRealtime7 = 48+7,
        osPriorityISR = 56,
        osPriorityError = -1,
        osPriorityReserved = 0x7FFFFFFF
    }
```

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