Opdracht 4

Exercises

1. How do you obtain the currently executing task handle?
With the function: xTaskGetCurrentTaskHandle().

2. How do you give up the CPU to another task?
With the function: taskYIELD().

3. Which CPU core do application programs execute on for the ESP32?
It executes on CPU 1, which is specifically used for applications.

4. What is the name of the default task provided by the Arduino environment?
The name of the default task is: loopTask.

5. What FreeRTOS function is used to suspend one task?
This is done with the function: vTaskSupend().

6. Can a task delete itself and if so how?
Yes a task can delete itself and other tasks. This is done with the function vTaskDelete().

7. When is the task's stack released when a task deletes itself? Immediately or later during the IDLE task?
It is done later on during the IDLE task. This is done so that the IDLE task can be scheduled. This is possible due to the IDLE task having the lowest priority (0).

8. What causes the preemption in FreeRTOS for ESP32?
It is caused by a timer tick. Which is used to divide CPU time into time slices.

9. How often do the ESP32 tick interrupts occur?

Every 1ms a tick interrupt occurs on the ESP32.