Operating Systems Homework #01 Part C

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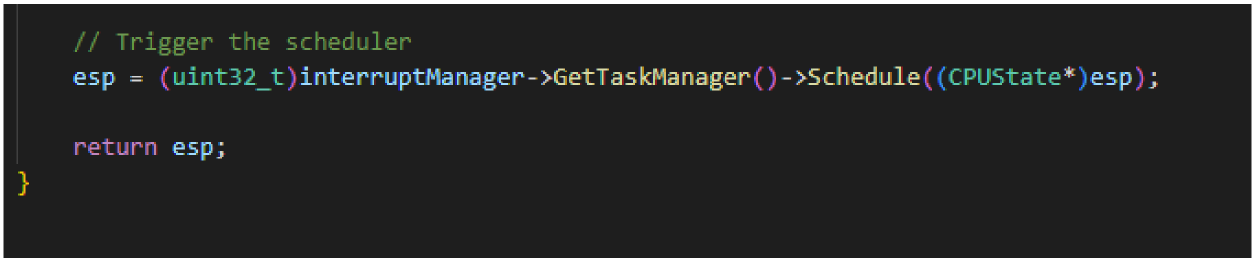
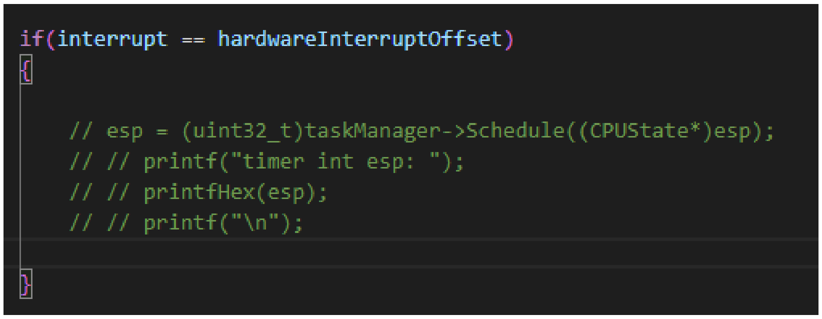
In this part, I just switched between 2 processes with keyboard interrupt.

- I added schedule to keyboard.cpp to trigger the scheduler.



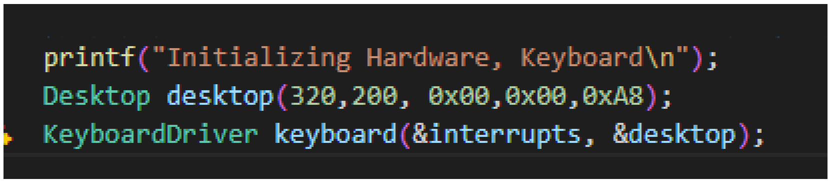
```
    // Trigger the scheduler
    esp = (uint32_t)interruptManager->GetTaskManager()->Schedule((CPUState*)esp);

    return esp;
}
```

- I closed the timer interrupt scheduler because now it should do the switching with keyboard interrupt:



```
if(interrupt == hardwareInterruptOffset)
{

    // esp = (uint32_t)taskManager->Schedule((CPUState*)esp);
    // // printf("timer int esp: ");
    // // printfHex(esp);
    // // printf("\n");

}
```

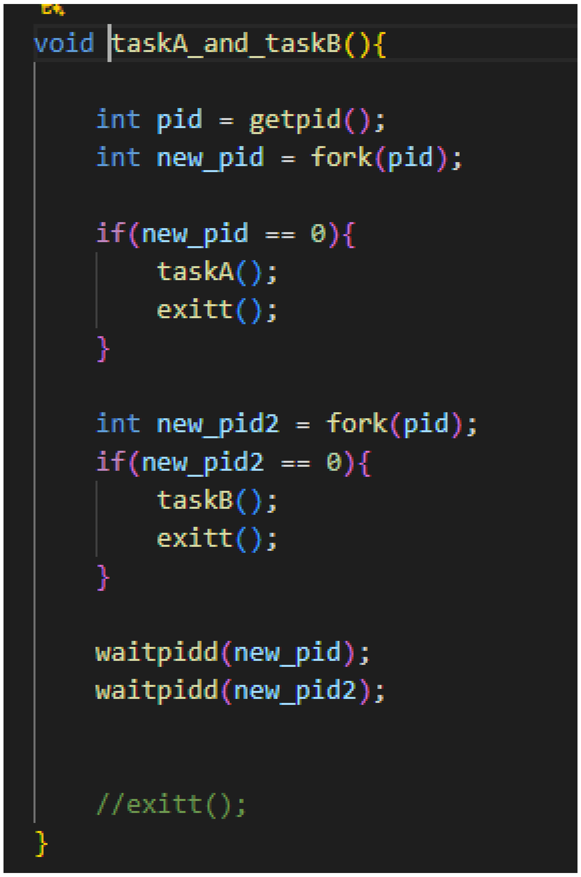
- I initialized the Desktop and the Keyboard in kernel main:



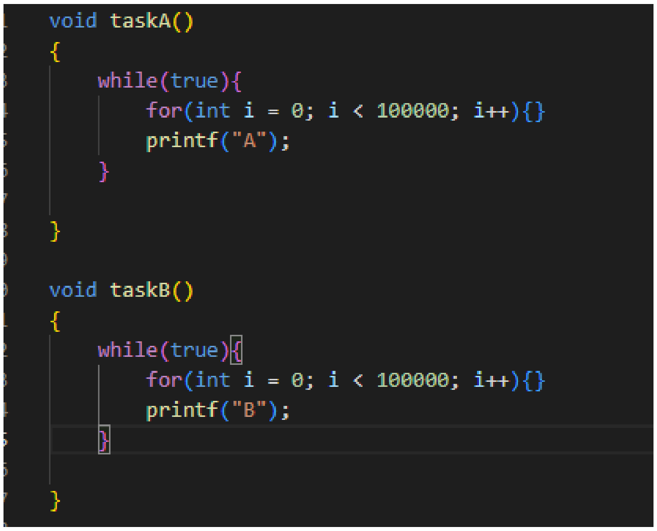
```
printf("Initializing Hardware, Keyboard\n");
Desktop desktop(320,200, 0x00,0x00,0xA8);
KeyboardDriver keyboard(&interrupts, &desktop);
```

Test and Outputs:

- I loaded 2 infinite functions to observe the interrupt.

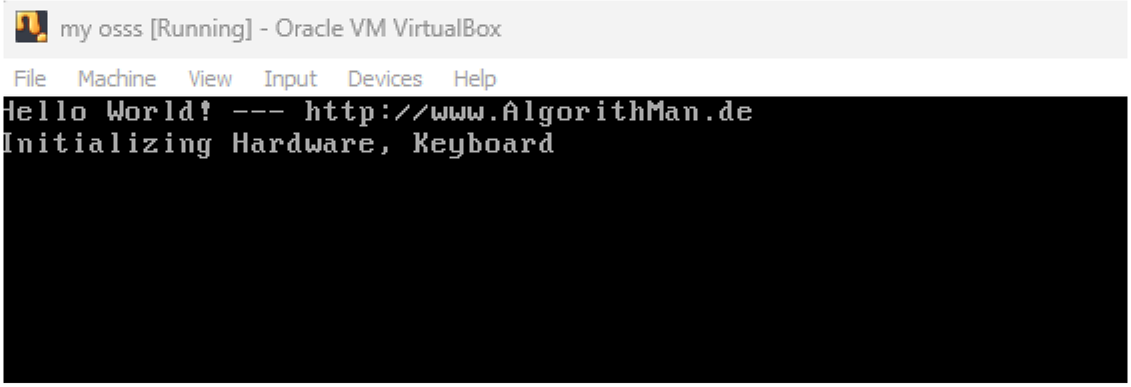


```
void taskA_and_taskB(){

    int pid = getpid();
    int new_pid = fork(pid);

    if(new_pid == 0){
        taskA();
        exitt();
    }

    int new_pid2 = fork(pid);
    if(new_pid2 == 0){
        taskB();
        exitt();
    }

    waitpidd(new_pid);
    waitpidd(new_pid2);


    //exitt();
}
```



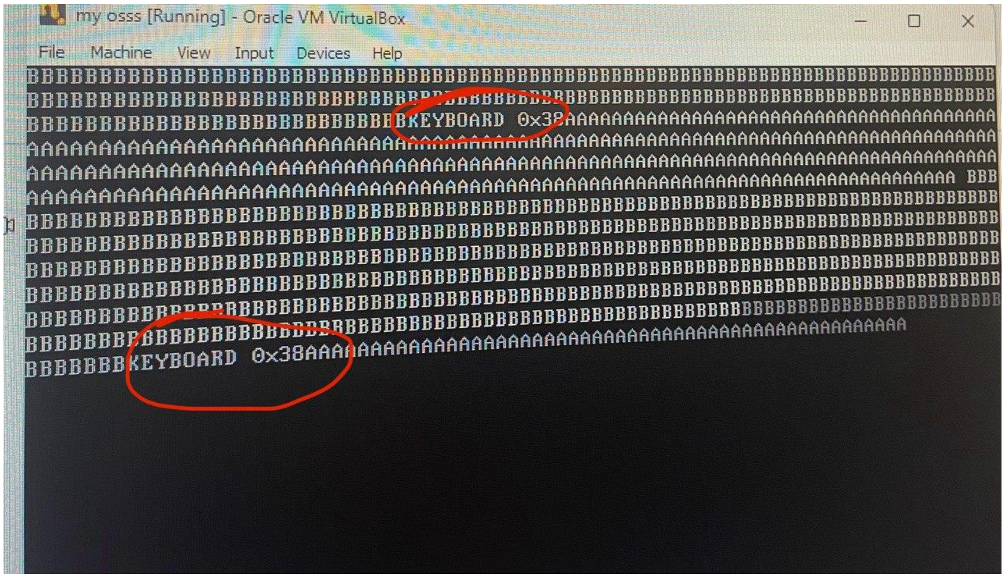
```
void taskA()
{
    while(true){
        for(int i = 0; i < 100000; i++){}
        printf("A");
    }

}

void taskB()
{
    while(true){
        for(int i = 0; i < 100000; i++){}
        printf("B");
    }

}
```

- At first, it is waiting for the keyboard input to trigger the interrupt.



```
Hello World! --- http://www.AlgorithMan.de
Initializing Hardware, Keyboard
```

- Then, I took these from my camera because it was too fast. As you can see it is switching from A to B:



```
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```

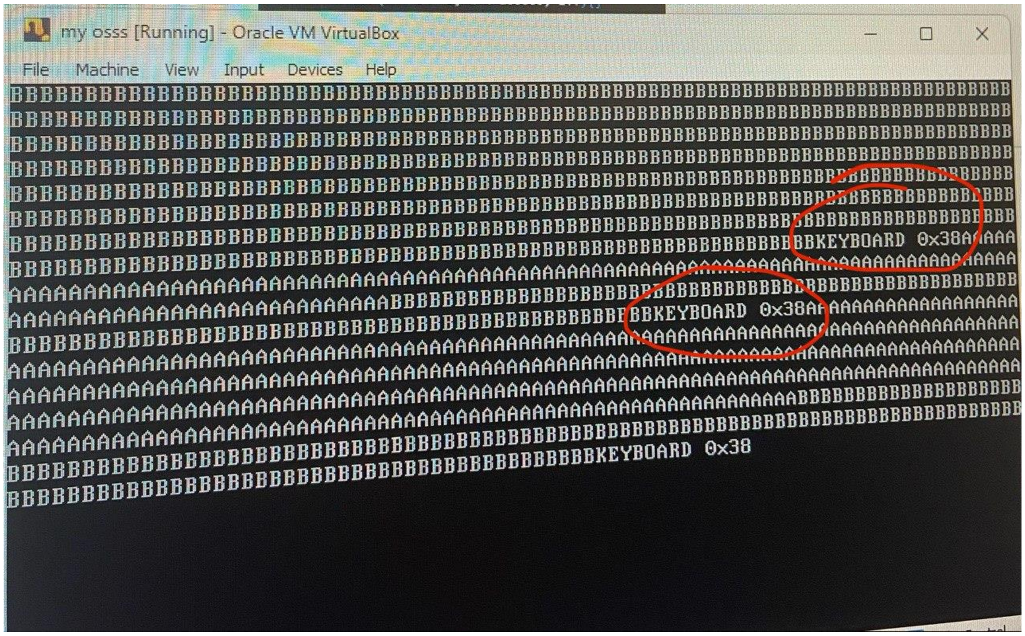

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