

TP4: Super Pong

- ▶ Extend the assembly routines wrote in TP3 into Pong
- ▶ **Completely** in assembly
- ▶ Handle buttons on GB

“main” in assembly...

```
.ARM
```

```
.align
```

```
.globle main
```

```
.main
```

```
    mov r0,#0x400
```

```
    add r0,r0,#0x3
```

```
    mov r1,#0x4000000
```

```
    str r0,[r1]
```

Buttons

- Buttons are handled with one address bit per bit as described in the TP handout.

Button	Bit
A	1
B	2
SELECT	3
START	4
RIGHT	5
LEFT	6
UP	7
DOWN	8
R	9
L	10

So how do we access these?

Example:

```
1111110111 [start button] 0x3F7  
1111101111 [right button] 0x3EF  
1111011111 [left button] 0x3DF
```

example:

```
ldr r9 ,=0x4000130  
ldr r10,[r9]  
ldr r11,=0x3DF  
cmp r10,r11
```

TP4:

- ▶ Already have everything to do pong
 - ▶ FillRect, DrawLine ...
- ▶ Check the sample code for button handling in **chamilo/Documents/2016/src**