```c
/*
 * CE2812 - 021
 * Winter 2016
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 */

#ifndef REG_STRUCT_H_
#define REG_STRUCT_H_

#include <inttypes.h>

/* GPIO structure */
typedef struct {
    uint32_t MODER;
    uint32_t OTYPER;
    uint32_t OSPEEDR;
    uint32_t PUPDR;
    uint32_t IDR;
    uint32_t ODR;
    uint32_t BSRR;
    uint32_t LCKR;
    uint32_t AFRL;
    uint32_t AFRH;
} GPIOx;

/* SYSTICK structure */
typedef struct {
    uint32_t STK_CTRL;
    uint32_t STK_LOAD;
    uint32_t STK_VAL;
    const uint32_t CALIB;
} SYSTICK;

#endif /* REG_STRUCT_H_ */
```