CEG3136 Lab 4 Report

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Task 1

svc.h

```
#include "stm32f4xx.h"
#include "stdio.h"
#include <string.h>

#include "stock_exchange.h"

void __svc(0) svc_zero(investor_t* investor, stock_holding_t* holding);
void __svc(1) svc_one(investor_t* investor, stock_holding_t* holding);

void __SVC_0(investor_t* investor, stock_holding_t* holding);
void __SVC_1(investor_t* investor, stock_holding_t* holding);
extern char SVC_Handler_s(void);
void SVC_Handler_c (investor_t* investor, stock_holding_t* holding, unsigned int
svc_number);
```

svc.s

```
  AREA    |.text|, CODE, READONLY
  PRESERVE8;
  THUMB;


  EXPORT SVC_Handler

SVC_Handler FUNCTION    ; char SVC_Handler();
    IMPORT SVC_Handler_c
    TST LR,#4             ; Called from Handler Mode?
    MRSNE R12,PSP         ; Yes, use PSP
```

```
    MOVEQ R12,SP           ; No, use MSP
    LDR R12,[R12,#24]      ; Read Saved PC from Stack
    LDRH R12,[R12,#-2]     ; Load Halfword
    BICS R12,R12,#0xFF00   ; Extract SVC Number
    MOV R2, R12
    B SVC_Handler_c
  ENDFUNC

  END
```

svc.c

```
#include "svc.h"

void SVC_Handler_c (investor_t* investor, stock_holding_t* holding, unsigned int
svc_number) {                    // SVC Interrupt Handler
  printf("svc_number = %d\n", svc_number);                                    //
Increment Counter
  switch (svc_number) {
    case 0: __SVC_0(investor, holding); break;
    case 1: __SVC_1(investor, holding); break;
  }
}



void __SVC_0(investor_t* investor, stock_holding_t* holding){
  investor_buy(investor, holding);
}
void __SVC_1(investor_t* investor, stock_holding_t* holding){
  investor_sell(investor, holding);
}
```

Simulation logs

The logs are in the file `task1-log.txt`.

Task 2

The logs are in the file `task2-log.txt`.