

```

1  PB_INP          EQU 0x400050C0
2  SYSCTRL         EQU 0xE000E010
3                  AREA      main, READONLY, CODE
4                  THUMB
5                  EXTERN     DELAY100          ;Delay Subroutine from previous experiment (For
de bouncing)
6                  EXTERN     portb_init       ;PortB Initialize
7                  EXPORT     __main
8
9  __main           PROC;
10
11      ;Rotation Type will be determined by R10 (1: Clockwise Rotation(Default), 2: Counter Clockwise
Rotation)
12                  MOV        R10,#0x01
13      ;R9 begins with 1. Look in my_ST_ISR.file
14                  MOV        R9,#0x01
15                  BL          portb_init
16      ;SysTimer Settings
17                  LDR        R0,=SYSCTRL      ;set the address of systemctrl
18                  MOV        R1,#0
19                  STR        R1,[R0]          ;Reseting
20                  MOV        R1,#9000        ;GIVEN R8 VALUE, ROTATION(Number of Cycle) SPEED CAN
BE ADJUSTED
21                  STR        R1,[R0,#4]      ;Reload value
22                  STR        R1,[R0,#8]      ;Current value
23                  MOV        R1,#0x03        ;(enable, interrupt, use PIOSC as clock)
24                  STR        R1,[R0]        ;Start timer
25
26                  LDR        R0,=PB_INP
27  re              LDR        R1,[R0]
28                  CMP        R1,#0x30        ;
29                  BEQ        re              ;If there is no pushed switch
30                  BL          DELAY100        ; To put a barrier for debouncing
31                  LDR        R2,[R0]
32                  CMP        R1,R2
33                  BNE        re
34
35                  CMP        R1,#0x30        ;If there is no pushed switched
36                  BEQ        re
37
38                  CMP        R1,#0x20        ;If SW1 is pressed, Rotation will be in
CounterClockWise
39                  BEQ        ccw
40
41                  CMP        R1,#0x10        ;If SW2 is pressed, Rotation will be in ClockWise
42                  BEQ        cw
43                  B          re
44
45  ccw             LDR        R2,[R0]
46                  CMP        R2,R1
47                  BEQ        ccw            ;Wait untill switch is released
48                  MOV        R10,#0x02      ;Make R10 0x02 so that it can rotate in ccw (see
my_ST_ISR.s)
49                  B          re
50
51  cw              LDR        R2,[R0]
52                  CMP        R2,R1
53                  BEQ        cw            ;Wait untill switch is released
54                  MOV        R10,#0x01      ;Make R10 0x02 so that it can rotate in ccw (see
my_ST_ISR.s)
55                  B          re
56                  ALIGN
57                  ENDP
58                  END
59

```