```
/***** #INCLUDES *****/
/* Include every header that is needed for this file to be interpreted
 * correctly.  Ideally, there should be no reliance in the order in which
 * header files are included.  Do not rely on a header file to be included
 * by other header files.
 */
#include <stdio.h>
#include <stdlib.h>
#include "system.h"
#include "servoAPI.h"
#include <unistd.h>

volatile unsigned int *servo1 = (unsigned int*) SERVO_1;
volatile unsigned int *servo2 = (unsigned int*) SERVO_2;

/**
 * random_movement
 * Purpose: randomly moves the servos around
 * args:
 *      nothing
 * returns:
 *      nothing
 */
void random_movement(){

    int servo1Val = rand() % MAX_RAND;
    int servo2Val = rand() % MAX_RAND;

    *servo1 = servo1Val;
    *servo2 = servo2Val;

}

/**
 * position_up
 * Purpose: points the top servo up
 * args:
 *      nothing
 * returns:
 *      nothing
 */
void position_up(){
    *servo1 = UP;
}

/**
 * position_down
 * Purpose: points the top servo down
 * args:
 *      nothing
 * returns:
 *      nothing
 */
void position_down(){
    *servo1 = DOWN;
}

/**
 * position_left
 * Purpose: points the bottom servo to the left
 * args:
 *      nothing
 * returns:
 *      nothing
 */
void position_left(){
    *servo2 = LEFT;
}

```

```
70  /**
71   * position_right
72   * Purpose: points the bottom servo to the right
73   * args:
74   *      nothing
75   * returns:
76   *      nothing
77   */
78  void position_right(){
79      *servo2 = RIGHT;
80  }
81
82  /**
83   * position_forward_top
84   * Purpose: points the top servo forward
85   * args:
86   *      nothing
87   * returns:
88   *      nothing
89   */
90  void position_forward_top(){
91      *servo2 = FORWARD;
92  }
93
94  /**
95   * position_forward_bottom
96   * Purpose: points the bottom servo forward
97   * args:
98   *      nothing
99   * returns:
100  *      nothing
101  */
102 void position_forward_bottom(){
103     *servo2 = FORWARD;
104 }
105
106 /**
107  * position_set_top
108  * Purpose: allows you to set the top servo position
109  * args:
110  *      position - the position that the top servo will be set to
111  * returns:
112  *      nothing
113  */
114 void position_set_top(int position){
115     if(position > MAX || position < MIN){
116         position = OFF;
117     }
118     *servo1 = position;
119 }
120
121 /**
122  * position_set_bottom
123  * Purpose: allows you to set the bottom servo position
124  * args:
125  *      position - the position that the bottom servo will be set to
126  * returns:
127  *      nothing
128  */
129 void position_set_bottom(int position){
130     if(position > MAX || position < MIN){
131         position = OFF;
132     }
133     *servo2 = position;
134 }
135
```