```
1
2
3  #ifndef COMMAND_HANDLER_H_
4  #define COMMAND_HANDLER_H_
5
6  #ifndef nullptr
7  #define nullptr ((void *)0)
8  #endif
9
10 #ifndef F_CPU
11 #define F_CPU               16000000UL
12 #endif
13
14 #include <stdbool.h>
15 #include <stdint.h>
16 #include <stdio.h>
17 #include <string.h>
18 #include <stdlib.h>
19 #include <avr/io.h>
20 #include <util/delay.h>
21
22 #define AVAILABLE_COMMANDS 11
23 #define COMMAND_BUFFER_SIZE 32
24 #define PARAMETER_BUFFER_SIZE 28
25
26 #ifndef BIT_MANIPULATION_MACRO
27 #define BIT_MANIPULATION_MACRO 1
28 #define bit_get(p,m) ((p) & (m))
29 #define bit_set(p,m) ((p) |= (m))
30 #define bit_clear(p,m) ((p) &= ~(m))
31 #define bit_flip(p,m) ((p) ^= (m))
32 #define bit_write(c,p,m) (c ? bit_set(p,m) : bit_clear(p,m))
33 #define BIT(x) (0x01 << (x))
34 #define LONGBIT(x) ((unsigned long)0x00000001 << (x))
35 #endif
36
37 typedef struct commandType {
38     const char *commandBase;
39     uint8_t nParameters;
40     void (*handlerFunction)();
41 } commandType;
42
43 void *parameter[3];
44 uint8_t *command_buffer;
45 extern bool initliazeMemory();
46 bool memoryInitialized;
47 extern void ROTATE_FORWARDS_HANDLE(), ROTATE_BACKWARDS_HANDLE(),                  ↵
     TURN_LED_ON_HANDLE(), TURN_LED_OFF_HANDLE(), TURN_RELAY_ON_HANDLE(),          ↵
     TURN_RELAY_OFF_HANDLE();
48 extern void UART_TEST_HANDLER(), BUILT_IN_LED_TEST_HANDLER(),                   ↵
     TURN_EVERYTHING_ON_HANDLE(), TURN_EVERYTHING_OFF_HANDLE(), CALL_NURSE_HANDLE();
49
```

```
50  extern void composeCommand(void* output_buffer, commandType* commandT, void**
      inputParameter);
51  extern bool decomposeCommand(void* input_buffer, commandType* commandT, void**
      outputParameter);
52
53
54  #endif /* COMMAND_HANDLER_H_ */
```