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```
*      keyboard1.h
```

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```

```
*      Keyboard Header file for comaidssystem.c:
```

```
*      Communication Aid System   (Designed to assist on-road communication with deaf driver)
```

```
*              Hardware specs: Atmega168p microcontroller
```

```
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```

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```
*      Under supervision from Betty O'Neil
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```
*      Spring 2010 Real-Time Systems Independent Study, UMass Boston
```

```
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```
*****/
```

```
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```

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/* \$Id: keyboard1.h, version 1.0 2010/31/04 09:26:08 */

```
#define END_CODE 0xF0  
  
#define EXTENDED 0xE0  
  
#define EXTENDED1 0xE1
```

```
  
#define A 0x1c  
  
#define B 0x32  
  
#define C 0x21  
  
#define D 0x23  
  
#define E 0x24  
  
#define F 0x2B  
  
#define G 0x34  
  
#define H 0x33  
  
#define I 0x43  
  
#define J 0x3B  
  
#define K 0x42  
  
#define L 0x4B  
  
#define M 0x3A  
  
#define N 0x31  
  
#define O 0x44  
  
#define P 0x4D  
  
#define Q 0x15  
  
#define R 0x2D  
  
#define S 0x1B  
  
#define T 0x2C
```

```
#define U 0x3C
#define V 0x2A
#define W 0x1D
#define X 0x22
#define Y 0x35
#define Z 0x1A
#define D0 0x45
#define D1 0x16
#define D2 0x1e
#define D3 0x26
#define D4 0x25
#define D5 0x2e
#define D6 0x36
#define D7 0x3d
#define D8 0x3e
#define D9 0x46
#define ACCENT 0x0e
#define HYPHEN 0x4e
#define EQUALS 0x55
#define BACKSLASH 0x5d
#define BKSP 0x66
#define SPACE 0x29
#define TAB 0x0d
#define CAPS 0x58
#define L_SHIFT 0x12
```

```
#define L_CTRL 0x14
#define L_GUI 0x1f
#define L_ALT 0x11
#define R_SHIFT 0x59
#define R_CTRL 0x14
#define R_GUI 0x27
#define R_ALT 0x11
#define APPS 0x2f
#define ENTER 0x5a
#define ESC 0x76
#define F1 0x05
#define F2 0x06
#define F3 0x04
#define F4 0x0c
#define F5 0x03
#define F6 0x0b
#define F7 0x83
#define F8 0x0a
#define F9 0x01
#define F10 0x09
#define F11 0x78
#define F12 0x07
#define PRNT_SCRN 0x12
#define SCROLL 0x7e
#define PAUSE 0x14
```

```
#define LSQR_BRKT 0x54

#define INSERT 0x70

#define HOME 0x6c

#define PG_UP 0x7d

#define DELETE 0x71

#define END 0x69

#define PG_DN 0x7a

#define U_ARROW 0x75

#define L_ARROW 0x6b

#define D_ARROW 0x72

#define R_ARROW 0x74

#define NUM 0x77

#define KP_SLASH 0x4a

#define KP_STAR 0x7c

#define KP_MINUS 0x7b

#define KP_PLUS 0x79

#define KP_EN 0x5a

#define KP_DOT 0x71

#define KP_0 0x70

#define KP_1 0x69

#define KP_2 0x72

#define KP_3 0x7a

#define KP_4 0x6b

#define KP_5 0x73

#define KP_6 0x74
```

```
#define KP_7 0x6c
```

```
#define KP_8 0x75
```

```
#define KP_9 0x7d
```

```
#define RSQR_BRKT 0x5b
```

```
#define SEMI_COLON 0x4c
```

```
#define APOSTROPHE 0x52
```

```
#define COMMA 0x41
```

```
#define DOT 0x49
```

```
#define SLASH 0x4A
```

```
typedef struct scancode_struct{
```

```
    char ascii_char;
```

```
    void *(*scancode_function)(char/*void */);
```

```
}scode;
```

```
//int regular_keys[][2]={
```

```
{A,'A'},{B,'B'},{C,'C'},{D,'D'},{E,'E'},{F,'F'},{G,'G'},{H,'H'},{I,'I'},{J,'J'},{K,'K'},{L,'L'},{M,'M'},{N,'N'},{O,'O'},{P,'P'},  
{Q,'Q'},{R,'R'},{S,'S'},{T,'T'},{U,'U'},{V,'V'},{W,'W'},{X,'X'},{Y,'Y'},{Z,'Z'},{D0,'0'},{D1,'1'},{D2,'2'},{D3,'3'},{D4,'4'},  
{D5,'5'},{D6,'6'},{D7,'7'},{D8,'8'},{D9,'9'},{APOSTROPHE,'\''},{HYPHEN,'-'},  
{EQUALS,'='},{BACKSLASH,'\\'},{SPACE,' '},  
{TAB,'t'},{LSQR_BRKT,'['},{ACCENT,'`'},{KP_SLASH,'?'},{KP_STAR,'*'},{KP_MINUS,'_'},{KP_PLUS,'+'},{KP_DOT,'>'},  
{KP_0,'('},{KP_1,'!'},{KP_2,'@'},{KP_3,'#'},{KP_4,'$'},{KP_5,'%'},{KP_6,'^'},{KP_7,'&'},{KP_8,'*'},{KP_9,'('},{SLASH,'/'},  
{DOT,'.'},{COMMA','},{SEMI_COLON,';'},{RSQR_BRKT,'}'}];
```