

```
/******
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```
Target MCU & clock speed: ATmega328P @ 1Mhz internal
```

```
Name      : externs.h
```

```
Author    : Insoo Kim (insoo@hotmail.com)
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```
Created   : May 15, 2015
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```
Updated   : May 17, 2015
```

```
Description: Get system compile time & date and display on LCD 2*16
```

```
Button toggling to turn on or off the backlight of LCD
```

```
HEX size[Byte]:
```

```
Ref:
```

```
Donald Weiman (weimandn@alfredstate.edu)
```

```
http://web.alfredstate.edu/weimandn/programming/lcd/ATmega328/
```

```
LCD_code_gcc_4d.html
```

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

```
extern uint8_t wd;
```

```
extern uint8_t words000[10][2][16];
```

```
extern uint8_t words001[10][2][16];
```

```
extern uint8_t prevMenuCnt;
```

```
extern uint8_t program_author[];
```

```
extern uint8_t program_version[];
```

```
extern uint8_t program_date[];
```

```
extern uint8_t menu_str1[];
```

```
extern uint8_t menu_str2[];
```

```
extern int8_t dht_getdata(int8_t *, int8_t *);
```

```
extern int8_t dht_getdata_EXT16MHZ(int8_t *, int8_t *);
```

```
extern int8_t dht_getdata_INT8MHZ(int8_t *, int8_t *);
```

```
extern int8_t dht_gettemperaturehumidity(int8_t *, int8_t *);
```

```
extern void ioinit(void);
```

```
extern int8_t hour, min, sec;
```

```
extern int8_t year, month, date;
```

```
extern int8_t monthEndDate, day;
```

```
extern int8_t accumulatedHour, accumulatedMin, accumulatedSec;
```

```
//extern uint8_t hourlyAdjusted;
```

```
extern void proceedClock();
```

```
extern void WDT_Init(void);
```

```
extern void initINT(void);
```

```
extern void check_wdt(void);
```

```
extern void setup_wdt(void);
```

```
extern void init_devices(void);
```

```
extern void parseCompileTime(void);
```

```
extern void calcDay(void);
```

```
// Function Prototypes
```

```
extern void chkButtonAndToggleBackLight();
```

```
extern void config();
extern void turnOnLCDBacklight();
extern void turnOffLCDBacklight();
extern void lcd_SysTime();
extern void lcd_dispON();
extern void lcd_dispOFF();
extern void lcd_dispRealClock();
extern void lcd_dispAccumulatedTime();
extern void lcd_showDHT11();
extern void lcd_testString();
extern void lcd_dispProgInfo();
extern void lcd_dispWords(uint8_t );
extern void lcd_dispMenu();
extern void lcd_write_4(uint8_t);
extern void lcd_write_instruction_4d(uint8_t);
extern void lcd_write_character_4d(uint8_t);
extern void lcd_write_string_4d(uint8_t *);
extern void lcd_init_4d(void);
```

```
//UTIL.C
```

```
extern void sysClockTest();
extern void countButton(void);
extern void adjustHour();
extern void adjustMin();
extern void adjustSec();
```