

# Sozib Al Mamun

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## Time Library:

The time library is done here is some complete struct and api for that library.

Time structure:

```
typedef struct {  
    uint16_t year;  
    uint8_t month;  
    uint8_t day;  
    uint8_t hour;  
    uint8_t minute;  
    uint8_t second;  
} time_library_time_t;
```

## Time API:

```
// Function to initialize the time library  
void time_library_init(time_library_time_t *initial_time);  
  
// Function to set the current time manually  
void time_library_set_time(time_library_time_t *time);
```

```

// Function to get the current time

void time_library_get_time(time_library_time_t *time);

//get time 12/24 type

uint8_t get_time(time_library_time_t *time, bool is_12);

// Function to calculate the day of the week

uint8_t calculate_day_of_week(uint16_t year, uint8_t month, uint8_t day);

// Function to calculate the elapsed time in milliseconds

uint32_t time_library_elapsed_time_ms(uint32_t start_time);

// Function to get the current time in milliseconds

uint32_t time_library_get_time_ms(void);

```

## Implement BluFi:

The BluFi for ESP32 is a Wi-Fi network configuration function via Bluetooth channel. It provides a secure protocol to pass Wi-Fi configuration and credentials to ESP32.

Some api:

```

void blufi_dh_negotiate_data_handler(uint8_t *data, int len, uint8_t
**output_data, int *output_len, bool *need_free);

int blufi_aes_encrypt(uint8_t iv8, uint8_t *crypt_data, int crypt_len);

int blufi_aes_decrypt(uint8_t iv8, uint8_t *crypt_data, int crypt_len);

uint16_t blufi_crc_checksum(uint8_t iv8, uint8_t *data, int len);

int blufi_security_init(void);

void blufi_security_deinit(void);

int esp_blufi_gap_register_callback(void);

```

```
esp_err_t esp_blufi_host_init(void);  
  
esp_err_t esp_blufi_host_and_cb_init(esp_blufi_callbacks_t *callbacks);  
  
void bluFiStart(void);  
  
void blufiAddStart(void);
```

## Some information:

For sending credentials or any custom string it needs a data frame packet according to esp32 documentation.

Here is some link about esp doc and their source code and App.

<https://docs.espressif.com/projects/esp-idf/en/stable/esp32/api-guides/blufi.html>

<https://github.com/EspresifApp/EspBlufiForAndroid/releases>