Redireccionament iBeacon

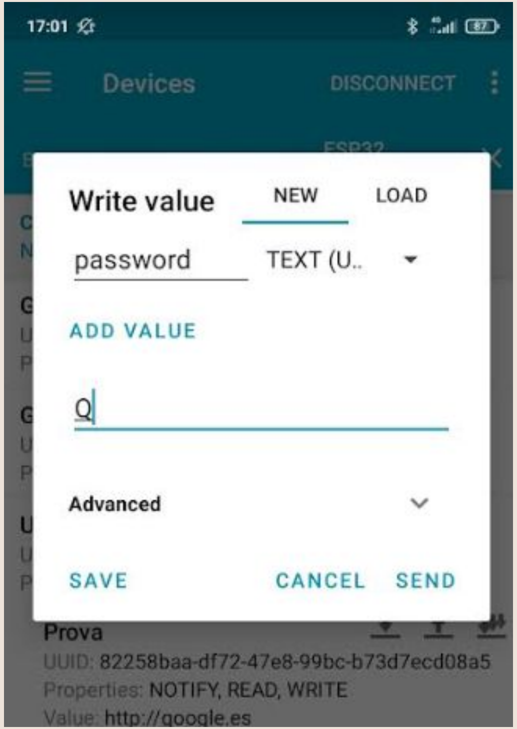
Processadors Digitals
Projecte Final

Ona Bonastre Martí
Dídac Bassas

Client

Rector

nrf Connect



Write value

password TEXT (U..

Q

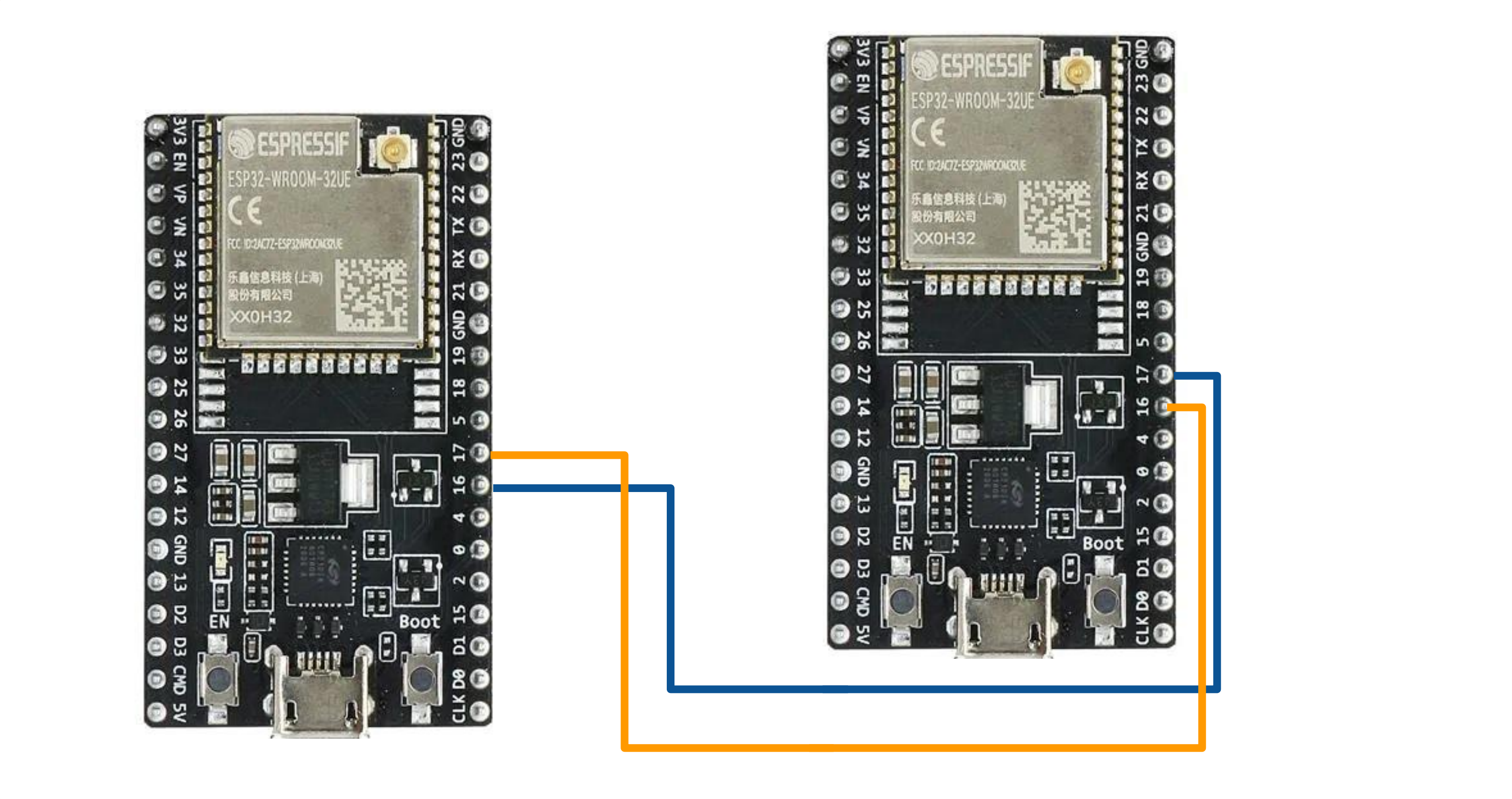
Prova

UUID: 82258baa-df72-47e8-99bc-b73d7ecd08a5

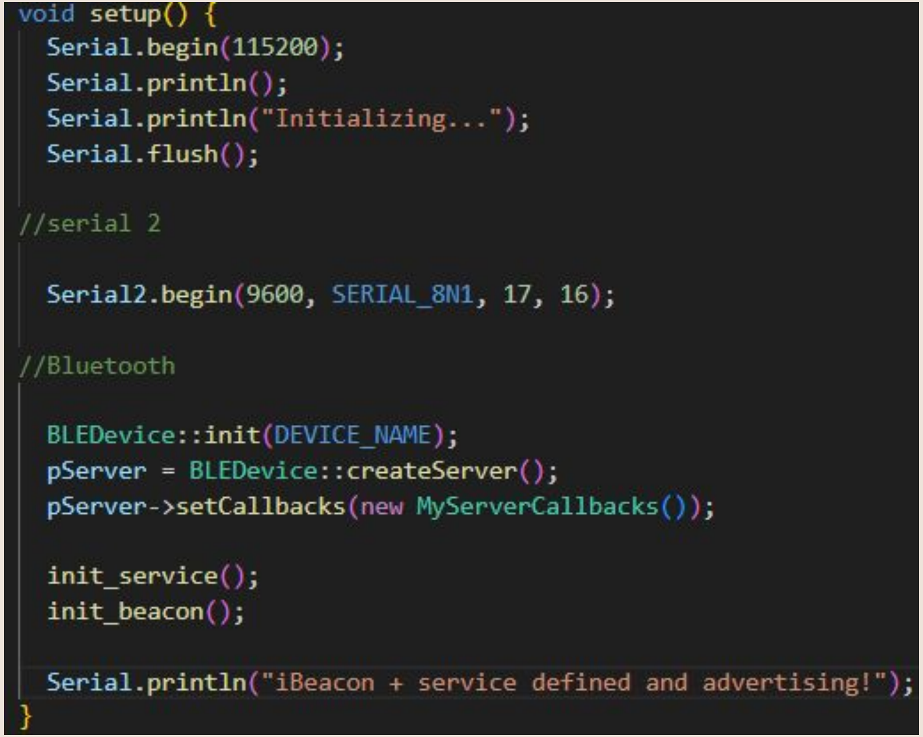
Properties: NOTIFY, READ, WRITE

Value: http://google.es

Hardware

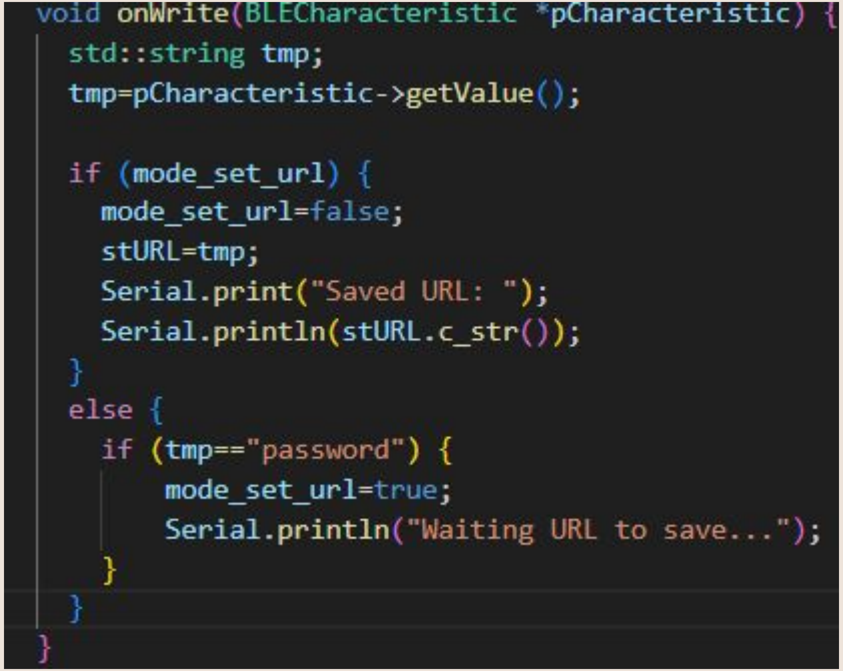

ESPRESSIF
ESP32-WROOM-32UE
3V3 EN VP VN 34 35 32 33 25 26 27 14 12 GND 13 D2 D3 CMD 5V
GND 23 22 TX RX 21 GND 19 18 5 17 16 4 0 2 15 D1 D0 CLK
EN
Boot

Software – Bluetooth iBeacon

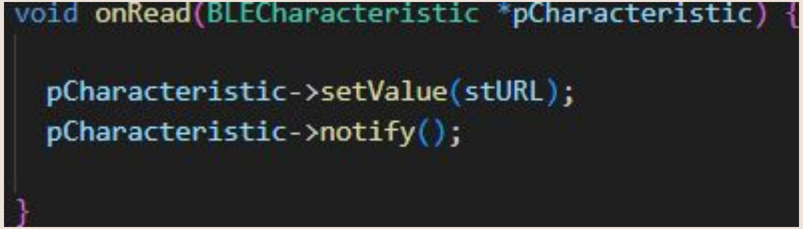


```
void setup() {
  Serial.begin(115200);
  Serial.println();
  Serial.println("Initializing...");
  Serial.flush();

//serial 2

  Serial2.begin(9600, SERIAL_8N1, 17, 16);

//Bluetooth

  BLEDevice::init(DEVICE_NAME);
  pServer = BLEDevice::createServer();
  pServer->setCallbacks(new MyServerCallbacks());

  init_service();
  init_beacon();

  Serial.println("iBeacon + service defined and advertising!");
}
```

Software – Bluetooth iBeacon

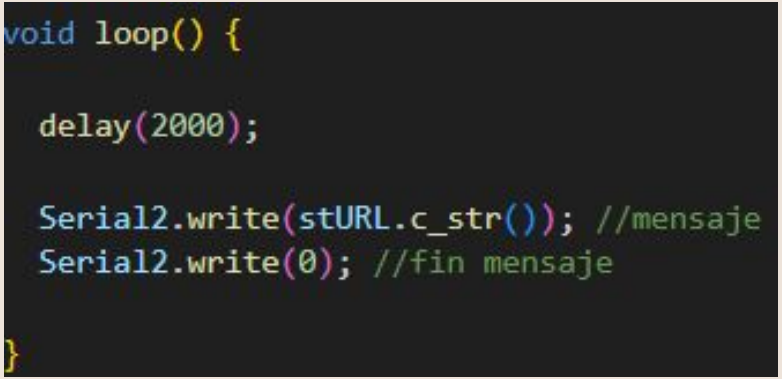


```
void onWrite(BLECharacteristic *pCharacteristic) {
  std::string tmp;
  tmp=pCharacteristic->getValue();

  if (mode_set_url) {
    mode_set_url=false;
    stURL=tmp;
    Serial.print("Saved URL: ");
    Serial.println(stURL.c_str());
  }
  else {
    if (tmp=="password") {
        mode_set_url=true;
        Serial.println("Waiting URL to save...");
    }
  }
}
```



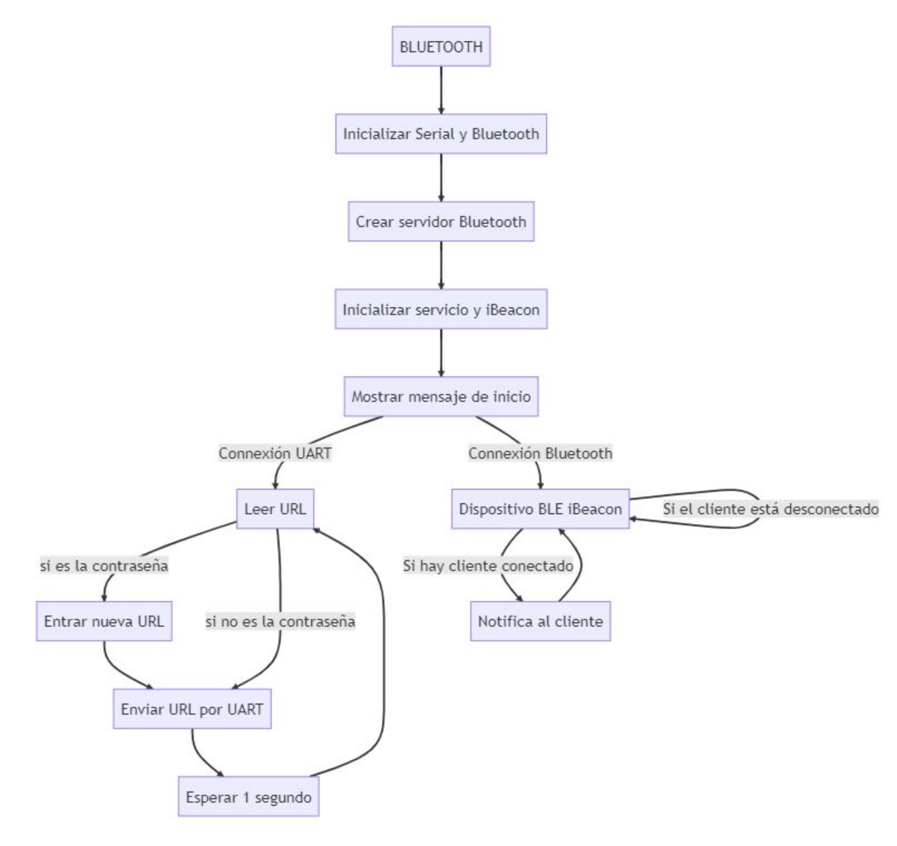
```
void onRead(BLECharacteristic *pCharacteristic) {

  pCharacteristic->setValue(stURL);
  pCharacteristic->notify();


}
```

Software – Bluetooth iBeacon

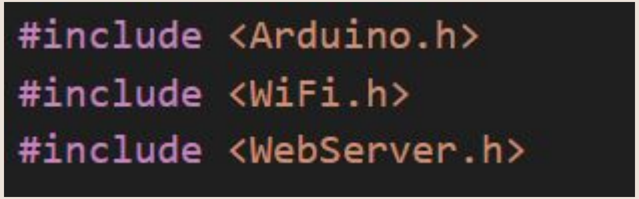


```
void loop() {

  delay(2000);

  Serial2.write(stURL.c_str()); //mensaje
  Serial2.write(0); //fin mensaje

}
```

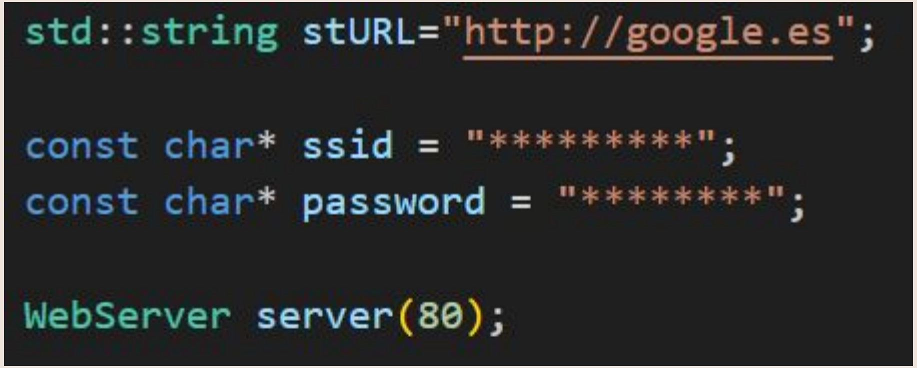
Software – Bluetooth iBeacon



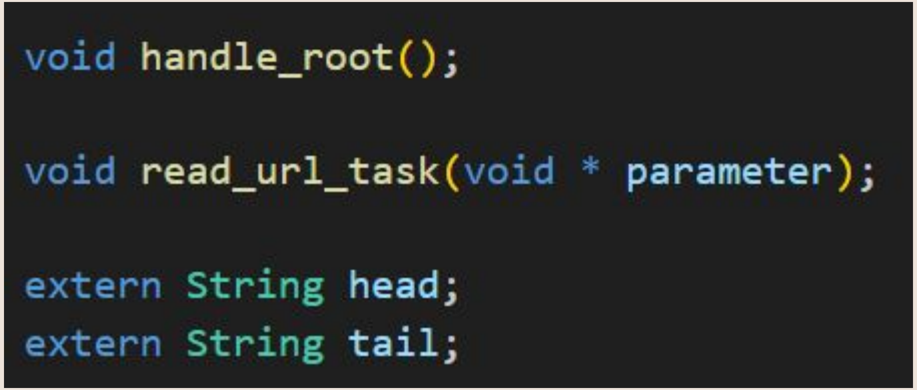
Software – Servidor web



```cpp
#include <Arduino.h>
#include <WiFi.h>
#include <WebServer.h>
```

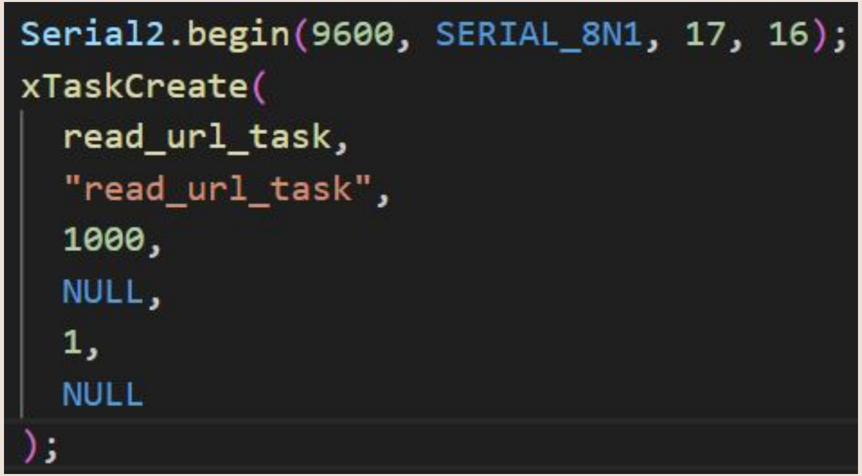


```cpp
std::string stURL="http://google.es";

const char* ssid = "*********";
const char* password = "********";

WebServer server(80);
```

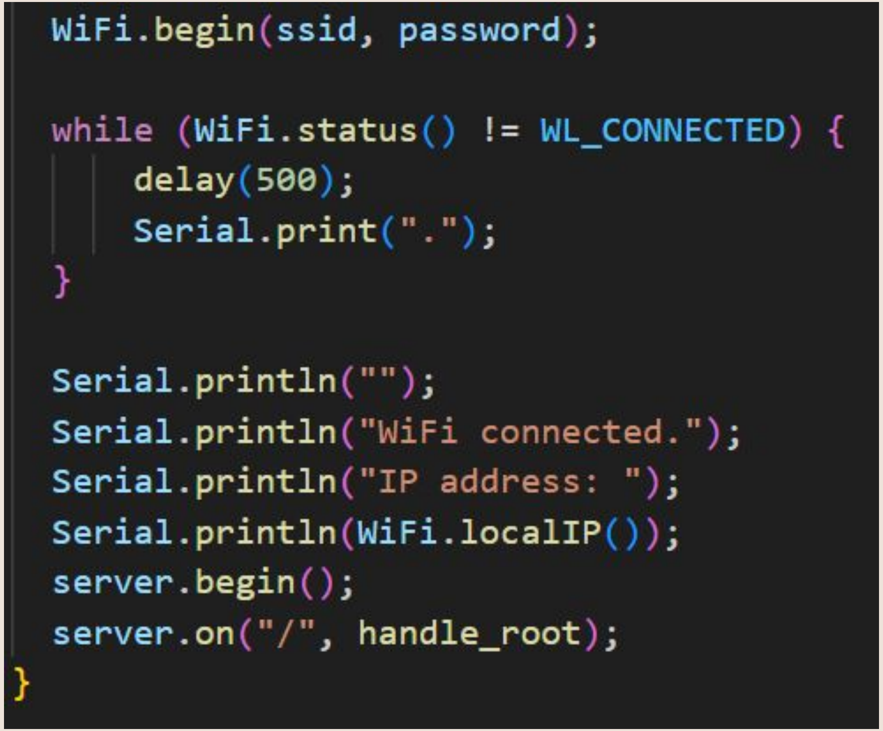


```cpp
void handle_root();

void read_url_task(void * parameter);

extern String head;
extern String tail;
```

Software – Servidor web

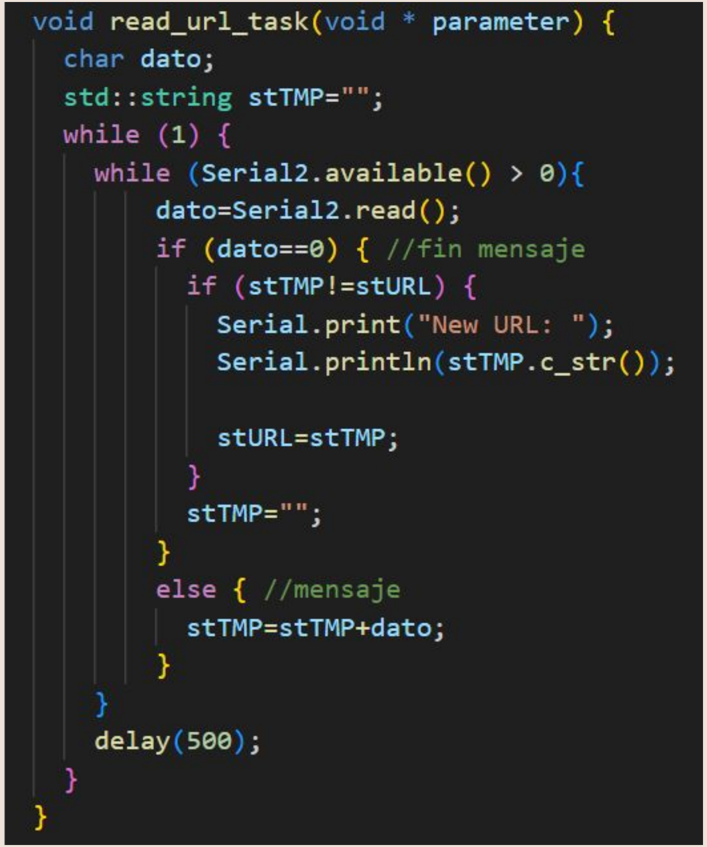


```
Serial2.begin(9600, SERIAL_8N1, 17, 16);
xTaskCreate(
  read_url_task,
  "read_url_task",
  1000,
  NULL,
  1,
  NULL
);
```

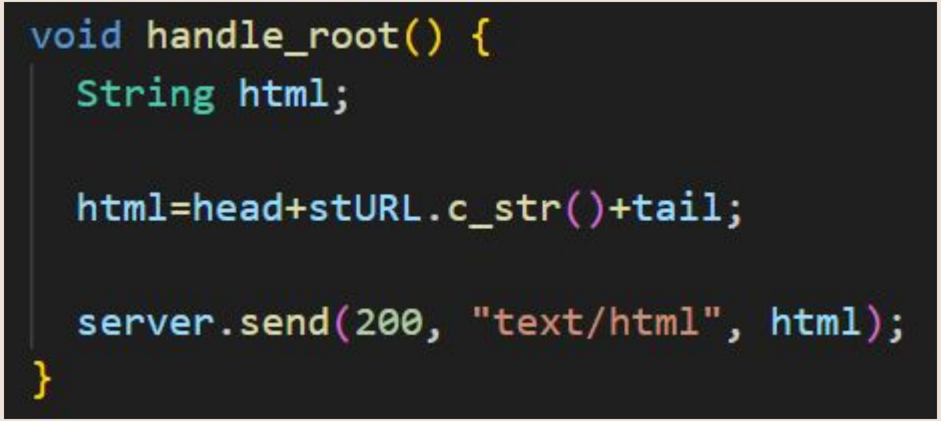


```
  WiFi.begin(ssid, password);

  while (WiFi.status() != WL_CONNECTED) {
    delay(500);
    Serial.print(".");
  }

  Serial.println("");
  Serial.println("WiFi connected.");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
  server.begin();
  server.on("/", handle_root);
}
```

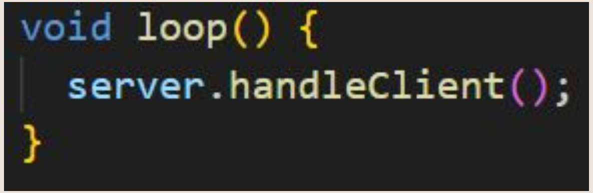
Software – Servidor web



```
void read_url_task(void * parameter) {
  char dato;
  std::string stTMP="";
  while (1) {
    while (Serial2.available() > 0){
        dato=Serial2.read();
        if (dato==0) { //fin mensaje
          if (stTMP!=stURL) {
            Serial.print("New URL: ");
            Serial.println(stTMP.c_str());

            stURL=stTMP;
          }
          stTMP="";
        }
        else { //mensaje
          stTMP=stTMP+dato;
        }
    }
    delay(500);
  }
}
```

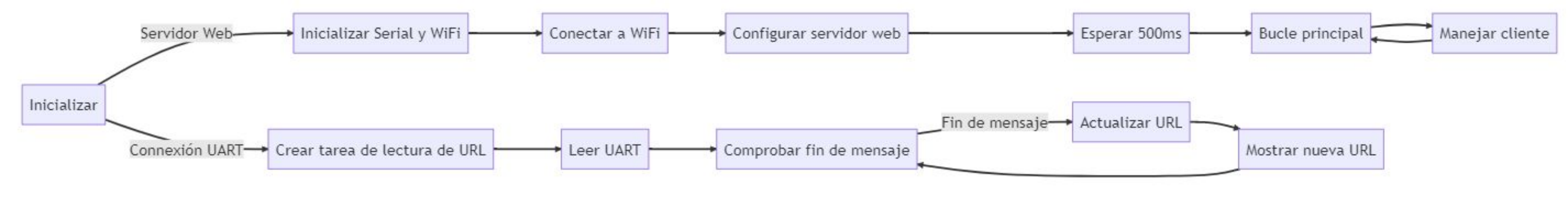


```
void handle_root() {
  String html;

  html=head+stURL.c_str()+tail;

  server.send(200, "text/html", html);
}
```

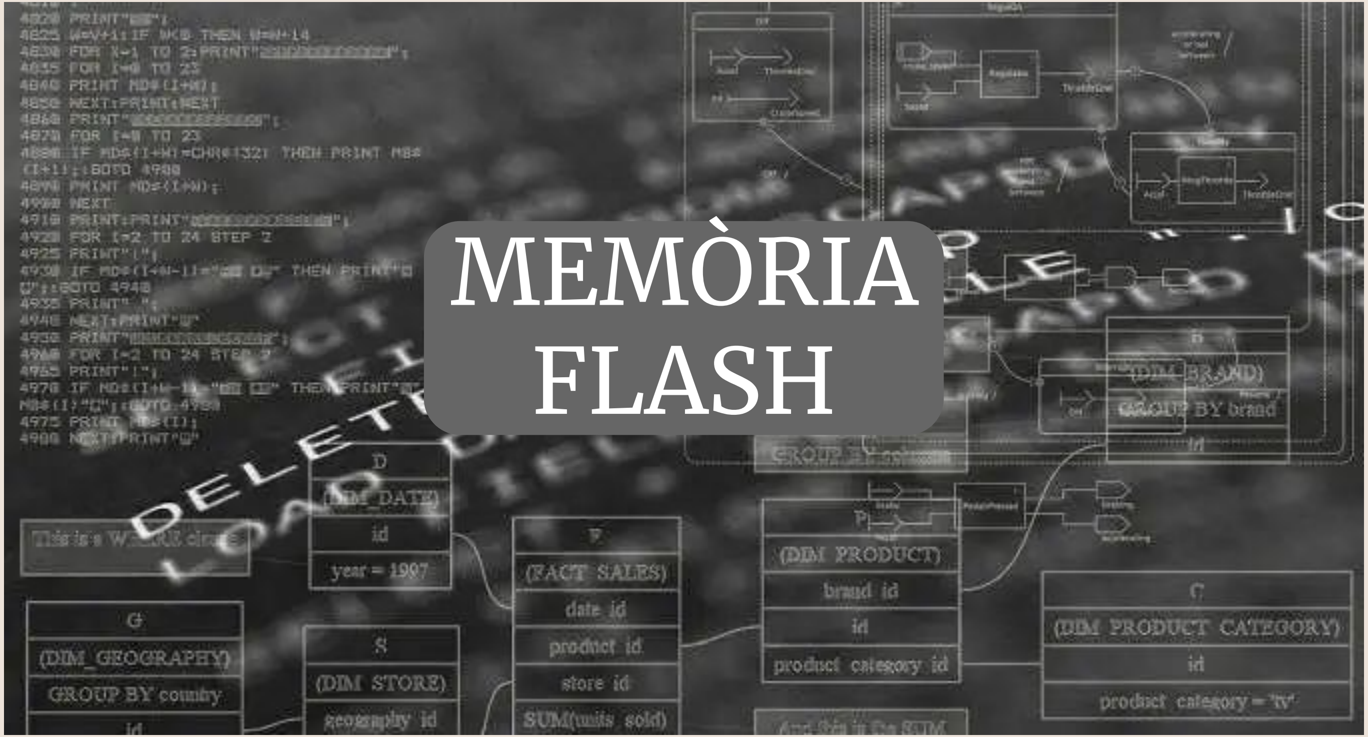


```
void loop() {
  server.handleClient();
}
```

Software – Servidor web



Problemes



MEMÒRIA FLASH

Demostració

Si no funciona, prem aquí

Redireccionament iBeacon

Processadors Digitals
Projecte Final

Ona Bonastre Martí
Dídac Bassas