JAAK-GPT

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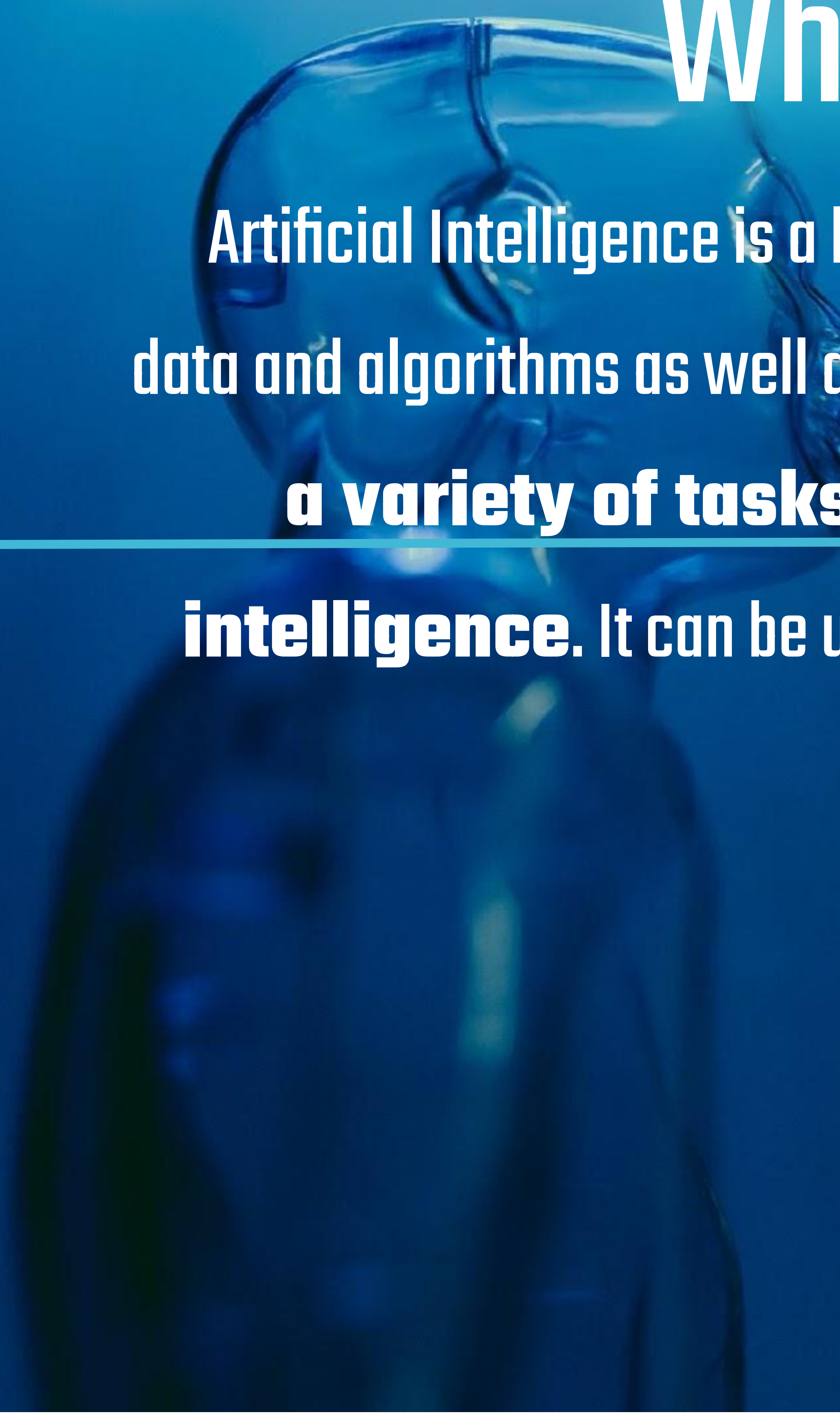


What is AI?

Artificial Intelligence is a branch of computer science that uses data and algorithms as well as computational power to **perform a variety of tasks that usually require human intelligence**. It can be used for a lot of things, to name a few:

Cybersecurity.

Algorithm Recommendations.

Automation.

Real World Examples

Artificial Intelligence is used in many different items such as robots, ChatGPT, cameras, and virtual assistants such as Siri, Alexa, and Google Home. Artificial Intelligence is also used in healthcare and even cars such as Tesla's self-driving system and motion sensors.

AI

Artificial Intelligence

JAAK-GPT vs ChatGPT

ChatGPT is a large language model that uses deep learning to understand and generate human-like text based on a given prompt or topic.

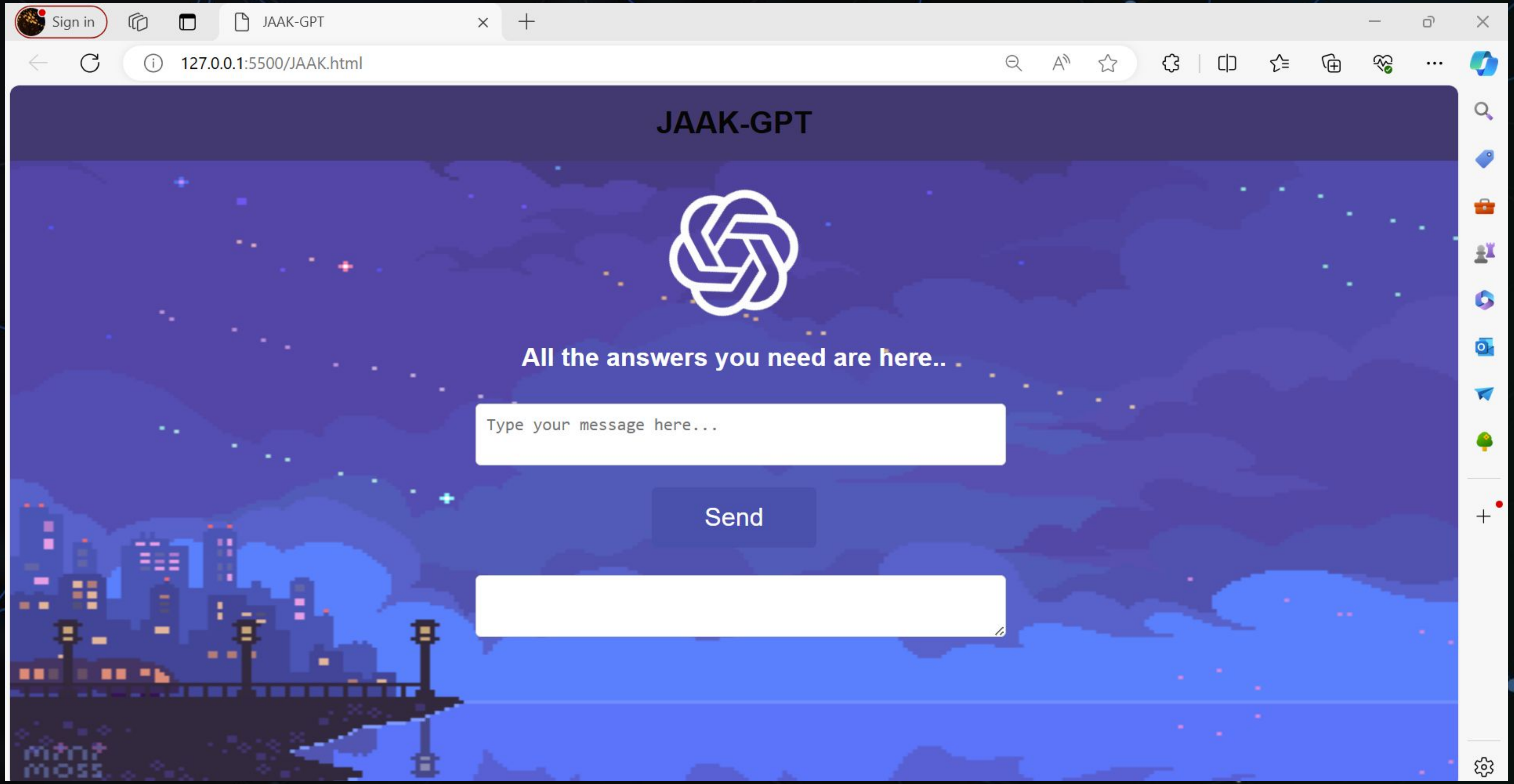
Today, we will integrate ChatGPT into our own websocket by utilizing an ESP32 microprocessor and three main functions to answer questions sent in by users. The code takes the question after it is sent, stores it, and uses an API (OpenAI) to answer the question and send it back through the websocket, where the user will receive the answer. It works just like utilizing ChatGPT but from our own websocket and a microcomputer.

Components

M5Stack FIRE

M5Stack FIRE has a LCD and ESP32 chip inside of it.

Websocket



Sign in
JAAK-GPT
127.0.0.1:5500/JAAK.html
JAAK-GPT
All the answers you need are here..
Type your message here...
Send

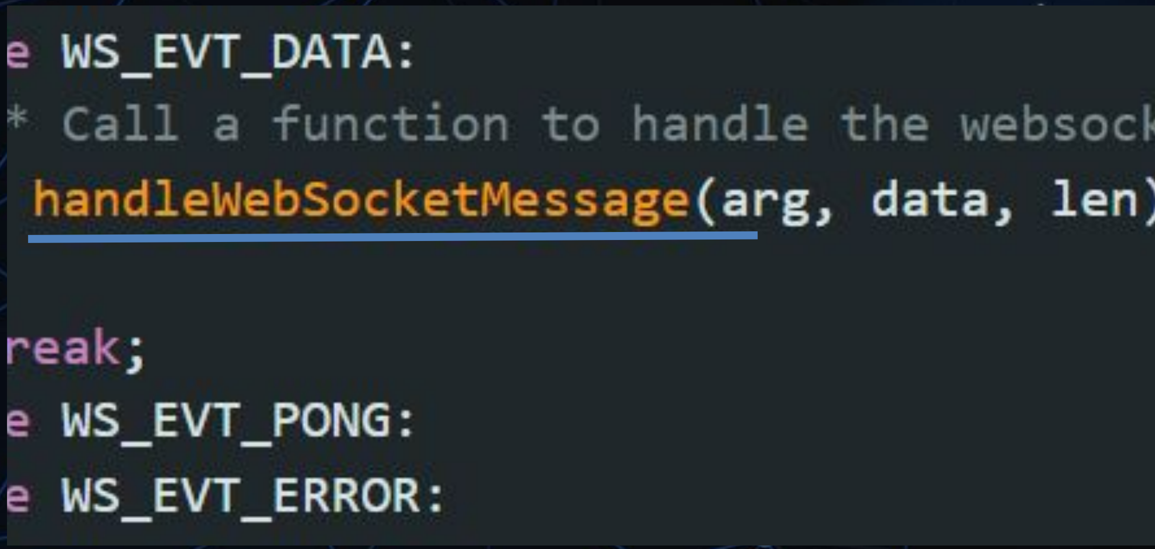
Libraries and APIs

Libraries are collections of pre-written code that people can use to provide a way to reuse code, making development faster and more efficient. **API** stands for " application programming interface " which is a routine or a set of rules that allow softwares to communicate with each other and transfer data back and forth.

How we are using OpenAI's API?

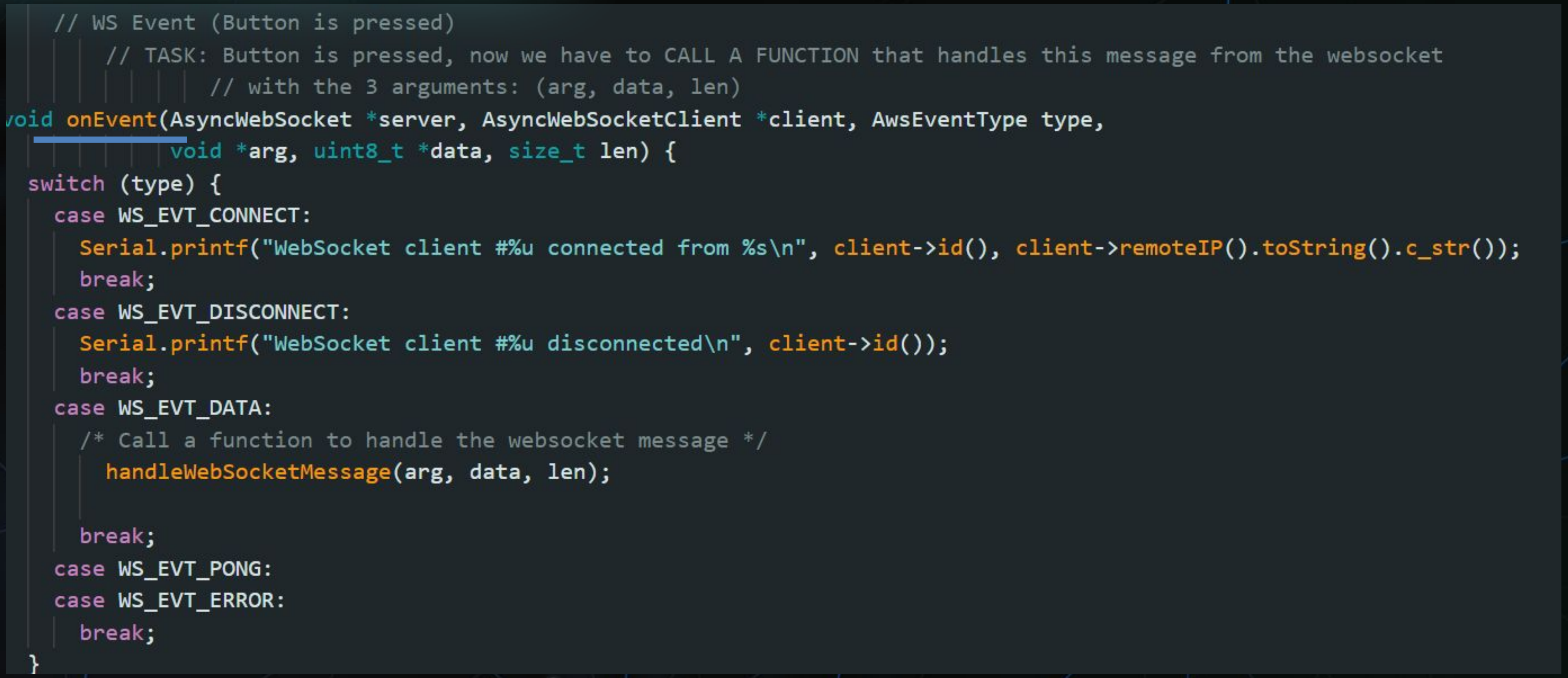
We are using the API to essentially use ChatGPT from our own computers through the websocket.

Functions.



```
e WS_EVT_DATA:
* Call a function to handle the websocke
 handleWebSocketMessage(arg, data, len);

reak;
e WS_EVT_PONG:
e WS_EVT_ERROR:
```



```
  // WS Event (Button is pressed)
    // TASK: Button is pressed, now we have to CALL A FUNCTION that handles this message from the websocket
        // with the 3 arguments: (arg, data, len)
oid onEvent(AsyncWebSocket *server, AsyncWebSocketClient *client, AwsEventType type,
             void *arg, uint8_t *data, size_t len) {
 switch (type) {
   case WS_EVT_CONNECT:
     Serial.printf("WebSocket client #%u connected from %s\n", client->id(), client->remoteIP().toString().c_str());
     break;
   case WS_EVT_DISCONNECT:
     Serial.printf("WebSocket client #%u disconnected\n", client->id());
     break;
   case WS_EVT_DATA:
     /* Call a function to handle the websocket message */
      handleWebSocketMessage(arg, data, len);

     break;
   case WS_EVT_PONG:
   case WS_EVT_ERROR:
     break;
 }
```

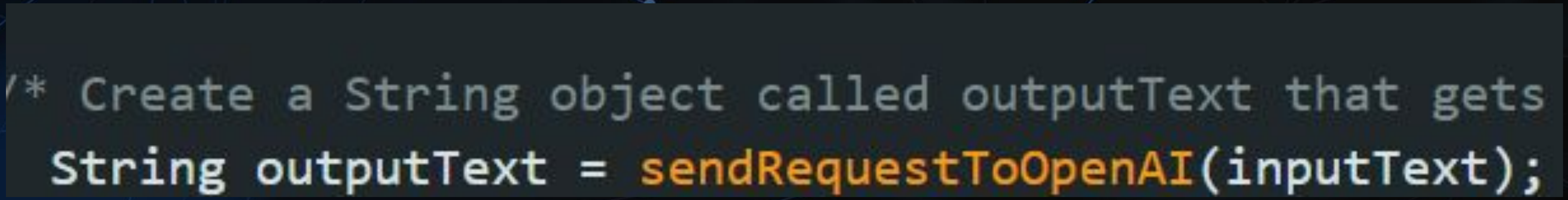
"handleWebSocketMessage()" is like asking a question and storing it, waiting to be answered. Once answered, it outputs the response to the websocket.

"On Event()" looks for 3 events:

A connection

A disconnection

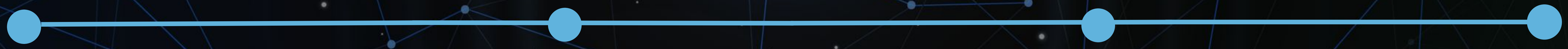
And button press



```
/* Create a String object called outputText that gets
  String outputText = sendRequestToOpenAI(inputText);
```

"sendRequestToOpenAI()" is just basically sending the question we received to OpenAI and retrieving an answer

Process



Research

Researched how AI functions, as well as Libraries and APIs.

Code

.Our mentor Sebastian went through the process of implementing OpenAI’s API, but we utilized our newly found C++ skills to properly implement the functions we discussed.

Building Websocket

We utilized HTML and CSS to design the websocket, and utilized Javascript to implement functionality.

Finished product.

After a lot of trial and error, we our finished product.

Demonstration