

**INSTITUTE OF ENGINEERING**  
**AND MANAGEMENT**



**PROGRAMMING FOR PROBLEM SOLVING**  
**LAB REPORT**

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**SECTION : J**

**ROLL NO. : 29**

**ENROLMENT NO. : 12022002004049**

**SUBJECT CODE : ESC103(PR)**

## **VARIABLE DESCRIPTION**

Variable Name	Data type	Purpose
*curl	CURL	Use it to call curl_easy_init() function everytime CURL library is used, that is, to make HTTP request
res	CURLcode	To receive HTTP requests
*root	Pointer to cJSON object	Extracts JSON data from parameter 'root' from the API
*weather	Pointer to cJSON object	Extracts JSON data from 'weather' parameter under 'root' parameter
*name	Pointer to cJSON object	Extracts JSON data from 'name' parameter under 'root' parameter
*description	Pointer to cJSON object	Extracts JSON data from 'description' parameter under 'root' parameter
*temp	Pointer to cJSON object	Extracts JSON data from 'temp' parameter under 'main' parameter
*temp_min	Pointer to cJSON object	Extracts JSON data from 'temp_min' parameter under 'main' parameter
*temp_max	Pointer to cJSON object	Extracts JSON data from 'temp_max' parameter under 'main' parameter
*pressure	Pointer to cJSON object	Extracts JSON data from 'pressure' parameter under 'main' parameter
*humidity	Pointer to cJSON object	Extracts JSON data from 'humidity' parameter under 'main' parameter

### **Function description:**

`convert()` –

Takes temperature in Kelvin as parameter and returns temperature in degree Celsius.

Return type – double

`write_callback()` –

Accepts the contents of the API and it's sizes. This function extracts the JSON data from API and prints them respectively.

Return type – `size_t`

`main()` –

This is the main function of the program where the curl variables are declared and respective functions are called.

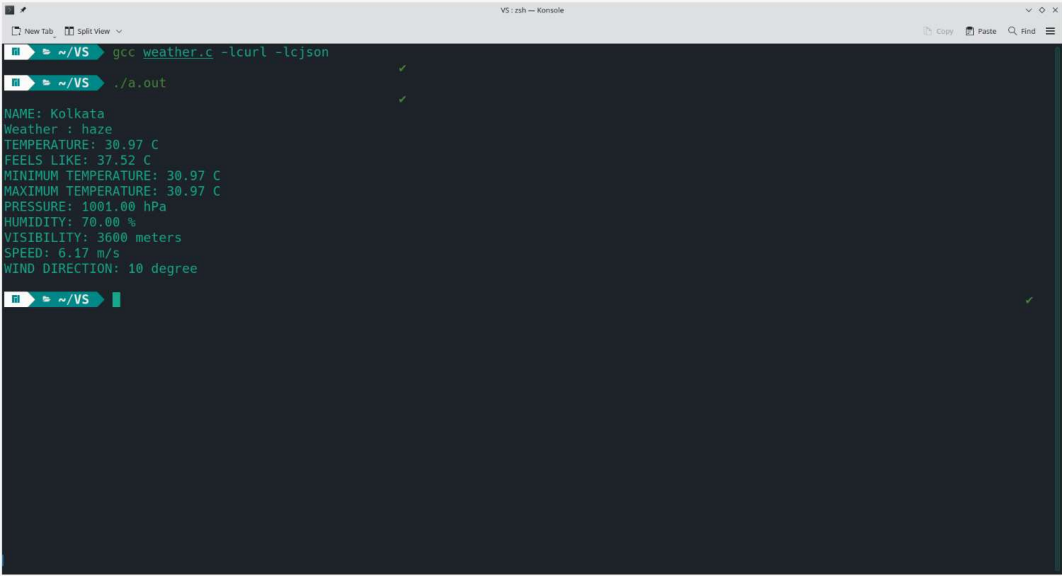
Return type – int

## Database Description:

The program uses OpenWeather api to retrieve the current weather data from the server using JSON and CURL libraries. The API responses data like, Location, current temperature, maximum and minimum temperature, pressure, humidity, wind speed and much more.

To retrieve such data, cJSON library is used. Each parameters are declared using object pointers and are called from the API.

## OUTPUT:



```
VS: zsh - Konsole
New Tab, Split View
~/VS gcc weather.c -lcurl -lcjson
~/VS ./a.out
NAME: Kolkata
Weather : haze
TEMPERATURE: 30.97 C
FEELS LIKE: 37.52 C
MINIMUM TEMPERATURE: 30.97 C
MAXIMUM TEMPERATURE: 30.97 C
PRESSURE: 1001.00 hPa
HUMIDITY: 70.00 %
VISIBILITY: 3600 meters
SPEED: 6.17 m/s
WIND DIRECTION: 10 degree
~/VS
```