SIT314/SIT729 – Week 5 Group Activity  
Designing JSON for IoT Applications

short line

# Overview

# In the technical task we will use JSON. We are going to be using Javascript Object Notation (JSON) to create sensor readings from our mock sensor. If you are not familiar with JSON, go through the tutorials <https://www.w3schools.com/js/js_json_intro.asp>).

# Tasks

Design a JSON string for each of the following:

1. A room temperature sensor for the room you are in.

{

"sensor\_id": "room101\_temp",

"type": "temperature",

"value": 22.5,

"unit": "Celsius",

"timestamp": "2025-08-27T09:30:00Z",

"location": "Room 101"

}

1. The status of a self-driving car.

{

"car\_id": "autocar\_7",

"status": "active",

"speed\_kph": 45,

"location": {

"latitude": -37.8136,

"longitude": 144.9631

},

"battery\_level": 82,

"destination": "Melbourne Central",

"timestamp": "2025-08-27T09:32:00Z"

}

1. The location of a person.

{

"person\_id": "user\_123",

"name": "Alex Tan",

"location": {

"latitude": -37.876,

"longitude": 145.045

},

"timestamp": "2025-08-27T09:34:00Z"

}

1. A weather update for a location.

{

"city": "Geelong",

"temperature": 18.2,

"humidity": 76,

"condition": "Cloudy",

"wind\_speed\_kph": 20,

"timestamp": "2025-08-27T09:35:00Z"

}

1. The status of a smart vacuum cleaner.

{

"device\_id": "vacuum\_002",

"status": "cleaning",

"battery\_level": 60,

"location": "Living Room",

"mode": "auto",

"timestamp": "2025-08-27T09:36:00Z"

}

1. A TV program change request for a TV.

{

"tv\_id": "tv\_lounge",

"request": "change\_channel",

"channel": 9,

"program": "National News",

"user\_id": "parent\_01",

"timestamp": "2025-08-27T09:37:00Z"

}

1. The request message to set an air-conditioning setting.

{

"device\_id": "ac\_unit\_1",

"command": "set\_temperature",

"target\_temp": 24,

"mode": "cool",

"fan\_speed": "medium",

"timestamp": "2025-08-27T09:38:00Z"

}