

# JSON Validator Tool

## Test Cases Report

Test Cases Table

Sr. No.	Scenario	Input	Expected Output	Actual Output	Status
1.	JSON is invalid	Malformed JSON syntax (e.g., missing bracket)	Error indicating invalid JSON	Error indicating invalid JSON	Pass
2.	Show misspelled words	Key like "mgf" instead of "mfg"	Show misspelled key with correct suggestion	Misspelled key with suggestion shown	Pass
3.	Data types wrong	"multiplier": "1" (string instead of number)	Show error for incorrect data type	Data type error shown	Pass
4.	Timestamp 13 digit	"timestamp": 12345678901234 (14 digits)	Error for invalid timestamp format	Invalid timestamp format error shown	Pass
5.	Structure of deviceList	"deviceList" is not a list	Error about expected list structure	Structure error shown	Pass
6.	Structure of measurement	"measurements" is not a list of objects	Error about incorrect structure	Structure error shown	Pass
7.	Missing values of given key	"paramName": ""	Error: Value is empty	Empty value error shown	Pass
8.	Missing key attributes	"measurements" missing "value"	Error: Key attribute missing	Missing key error shown	Pass
9.	Line numbers for displaying errors	Errors in different parts of JSON	Each error includes relevant line number	Line numbers displayed with errors	Pass
10.	Map misspelled words to	"mgf" → "mfg", "devList" → "deviceList"	Show map of incorrect to suggested key names	Suggestions mapped correctly	Pass

	the suggestion				
11.	Errors shown all together	Multiple errors in one JSON	All errors listed at once	All errors displayed together	Pass
12	File handling	JSON file read from path	File successfully opened and read	File read successfully	Pass
13.	If file not, then error display	File path invalid or missing file	Error: File not found	File not found error shown	Pass
14	If "mgf" is given inside the deviceList	Mfg passed inside the deviceList array	Error: mfg should not be inside the deviceList	mfg should not be inside the deviceList, move it to root level	Pass

## Test Cases Screenshots

### 1. Error indicating invalid JSON

```

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json
2025-04-07 16:02:51,033 - ERROR - Unexpected error: Expecting ',', delimiter: line 5 column 23 (char 90)
Traceback (most recent call last):
  File "D:\Leap and scale\project_js\demo\JSON_validation_tool\tool.py", line 159, in main
    data = json.loads(json_str)
  File "C:\Users\tanay\AppData\Local\Programs\Python\Python313\Lib\json\_init_.py", line 346, in loads
    return _default_decoder.decode(s)
  File "C:\Users\tanay\AppData\Local\Programs\Python\Python313\Lib\json\decoder.py", line 345, in decode
    obj, end = self.raw_decode(s, idx=_w(s, 0).end())
  File "C:\Users\tanay\AppData\Local\Programs\Python\Python313\Lib\json\decoder.py", line 361, in raw_decode
    obj, end = self.scan_once(s, idx)
json.decoder.JSONDecodeError: Expecting ',', delimiter: line 5 column 23 (char 90)
Unexpected error: Expecting ',', delimiter: line 5 column 23 (char 90)

Exiting Sensoyo JSON Validator.

```

### 2. Misspelled key with suggestion shown

```

OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
line 2: mgf is spelled wrongly, change spelling to mfg
Schema Error: root - 'mgf' is a required property

Exiting Sensoyo JSON Validator.

```

### 3. Data type error shown

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
line 2: mfg is spelled wrongly, change spelling to mfg
Schema Error: deviceList[0]measurements[1]multiplier - 'one' is not of type 'number'
Schema Error: root - 'mfg' is a required property

Exiting Sensoyo JSON Validator.
```

### 4. Invalid timestamp format error shown

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
line 8: Invalid timestamp in device T_U1: Must be a 13-digit integer in milliseconds.

Exiting Sensoyo JSON Validator.
```

### 5. Structure error shown

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
Schema Error: deviceList - {'1': {'deviceId': 'T_U1', 'deviceType': 'TI0', 'mode': 'Auto', 'timestamp': 17427952260004, 'createdTime': 1742795226000, 'status': 'Okay', 'measurements': [{'paramName': 'Temperature', 'value': 56, 'multiplier': 1, 'unit': 'Celsius'}, {'paramName': 'Humidity', 'value': 56, 'multiplier': 1, 'unit': 'percentage'}]}} is not of type 'array'

Exiting Sensoyo JSON Validator.
```

### 6. Structure error shown

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
Schema Error: deviceList[0]measurements - {'1': {'paramName': 'Temperature', 'value': 56, 'multiplier': 1, 'unit': 'Celsius'}, '2': {'paramName': 'Humidity', 'value': 56, 'multiplier': 1, 'unit': 'percentage'}} is not of type 'array'

Exiting Sensoyo JSON Validator.
PS D:\Leap and scale\project_js\demo\JSON_validation_tool>
```

### 7. Empty value error shown

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
Schema Error: deviceList[0]measurements[0]paramName - '' should be non-empty

Exiting Sensoyo JSON Validator.
PS D:\Leap and scale\project_js\demo\JSON_validation_tool>
```

## 8. Missing key error shown

```
PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
Schema Error: deviceList[0]measurements[0] - 'value' is a required property

Exiting Sensoyo JSON Validator.
PS D:\Leap and scale\project_js\demo\JSON_validation_tool>
```

## 9. Line numbers displayed with errors

```
PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
line 5: dId is spelled wrongly, change spelling to deviceId
line 7: mod is spelled wrongly, change spelling to mode
Schema Error: deviceList[0] - 'mode' is a required property
Schema Error: deviceList[0] - 'deviceId' is a required property

Exiting Sensoyo JSON Validator.
```

## 10. Suggestions mapped correctly

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
line 2: mgf is spelled wrongly, change spelling to mfg
line 3: devlist is spelled wrongly, change spelling to deviceList
Schema Error: root - 'mfg' is a required property
Schema Error: root - 'deviceList' is a required property

Exiting Sensoyo JSON Validator.
```

## 11. All errors displayed together

```
PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
line 5: devId is spelled wrongly, change spelling to deviceId
line 6: deType is spelled wrongly, change spelling to deviceType
line 11: measure is spelled wrongly, change spelling to measurements
Schema Error: deviceList[0] - 'deviceType' is a required property
Schema Error: deviceList[0] - 'deviceId' is a required property
Schema Error: deviceList[0] - 'measurements' is a required property
line 8: Invalid timestamp in device Unknown: Must be a 13-digit integer in milliseconds.

Exiting Sensoyo JSON Validator.
```

## 12. File read successfully

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\demo\JSON_validation_tool\data.json

Validation Results:
=====
JSON is valid.

Exiting Sensoyo JSON Validator.
```

## 13. File not found error shown

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo\JSON_validation_tool> python tool.py
Enter the full path to the file ("bye" to exit): D:\Leap and scale\project_js\JSON_validation_tool\data.json

!!! File not found. Please check the path and try again.

Enter the full path to the file ("bye" to exit): json

!!! File not found. Please check the path and try again.

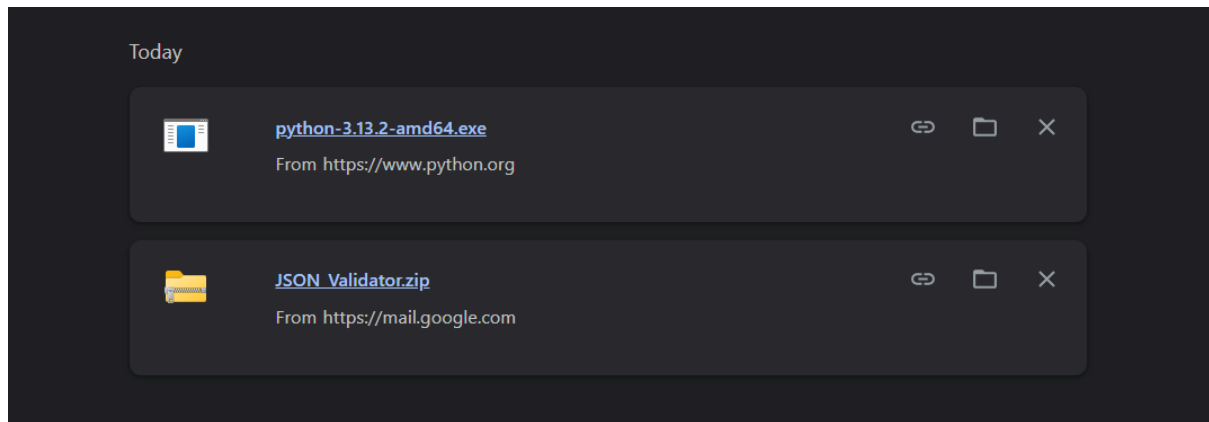
Enter the full path to the file ("bye" to exit): bye
PS D:\Leap and scale\project_js\demo\JSON_validation_tool>
```

## 14. Mfg passed inside deviceList

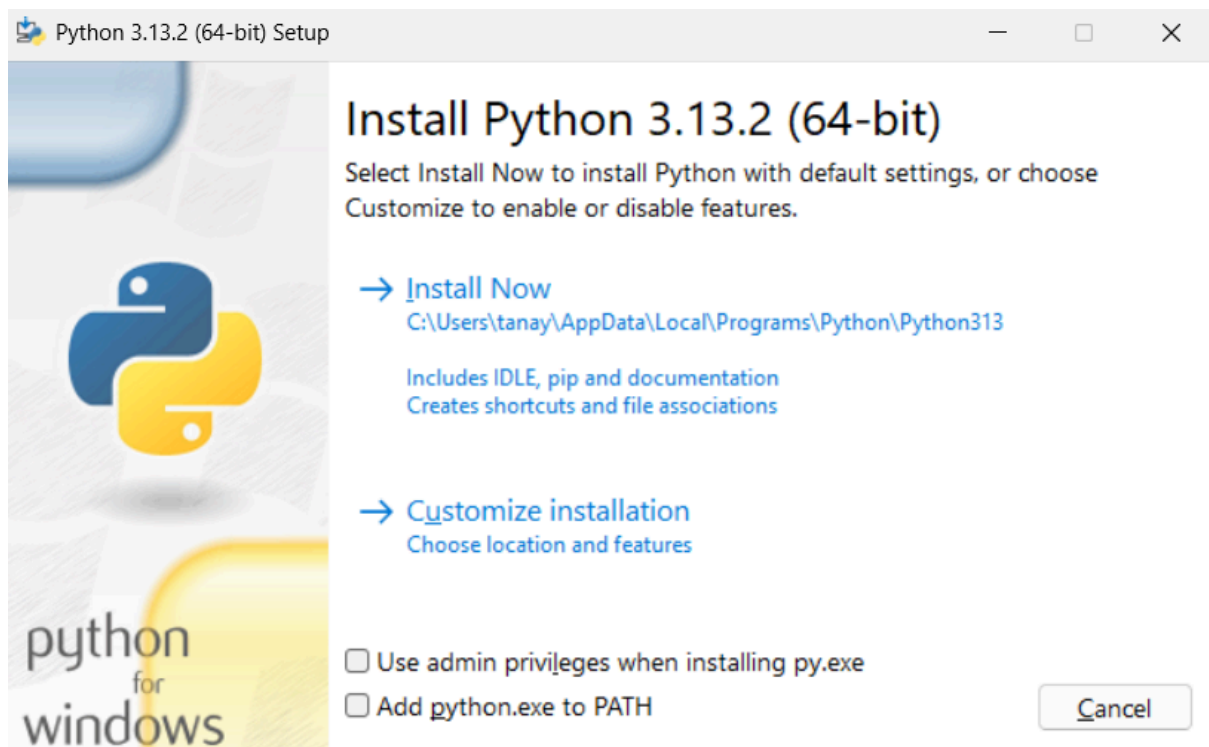
```
C:\Users\SONAM\Desktop\Internship\Sensoyo> python tool_main.py
Schema Error: root - 'mfg' is a required property
line 6: 'mfg' should not be inside deviceList[0]. Move it to the root level.
PS C:\Users\SONAM\Desktop\Internship\Sensoyo>
```

# Installation Setup

Download the setup:



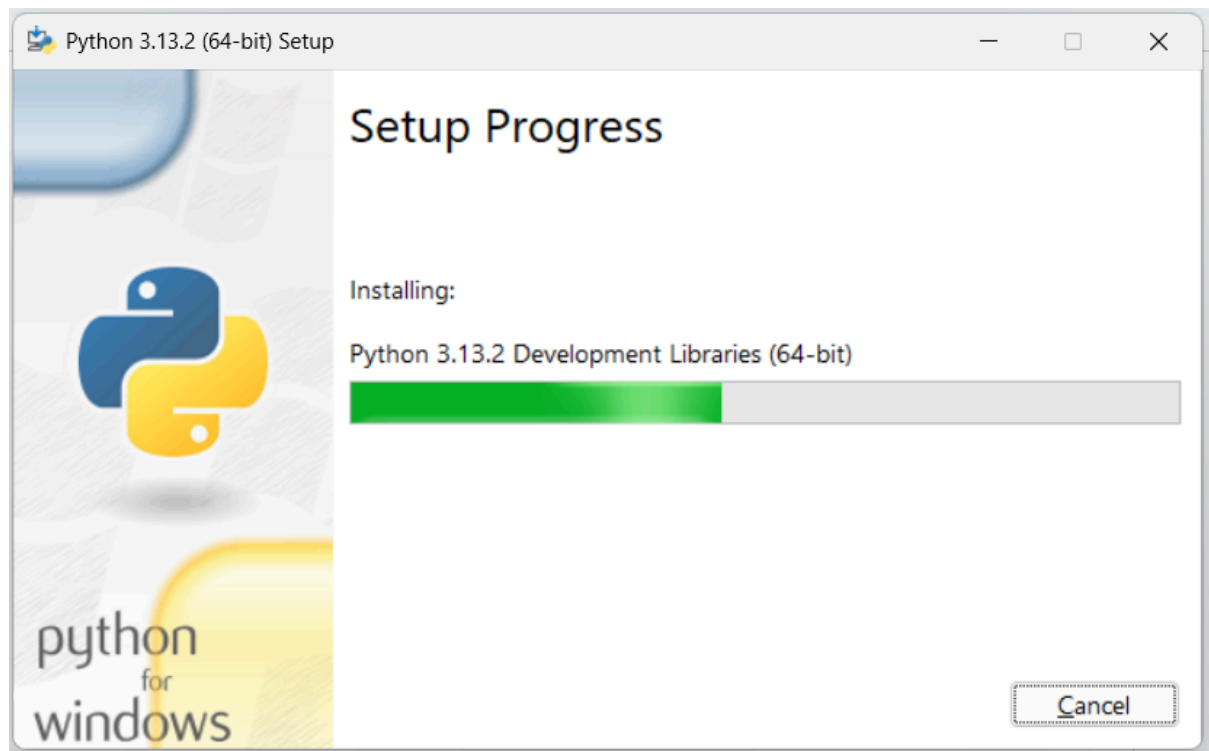
Open the downloaded file:



Check the box "Add Python to PATH"



Click on install to start the installation



Verify Installation: Open Command Prompt and enter the command

```
Command Prompt
Microsoft Windows [Version 10.0.26100.3624]
(c) Microsoft Corporation. All rights reserved.

C:\Users\tanay>python --version
Python 3.13.2
```

Install the **jsonschema** dependency

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

● PS D:\Leap and scale\project_js\demo> python --version
Python 3.13.2
● PS D:\Leap and scale\project_js\demo> pip install jsonschema
Collecting jsonschema
  Downloading jsonschema-4.23.0-py3-none-any.whl.metadata (7.9 kB)
Collecting attrs>=22.2.0 (from jsonschema)
  Downloading attrs-25.3.0-py3-none-any.whl.metadata (10 kB)
```

Verify the jsonschema dependency

```
OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  POSTMAN CONSOLE

PS D:\Leap and scale\project_js\demo> jsonschema --version
C:\Users\tanay\AppData\Local\Programs\Python\Python313\Scripts\jsonschema.exe\__main__.py
e check-jsonschema instead, which can be installed from https://pypi.org/project/check-js
4.23.0
● PS D:\Leap and scale\project_js\demo> 
```