

Advanced Intern Assessment: Searchable JSON Parser

Objective:

This advanced task challenges you to go beyond simple parsing. You will first build regex-based JSON parser and then encapsulate the parsed data within a class that provides a powerful search functionality. This will test your skills in parsing, object-oriented design, recursion, and implementing data query logic.

Input data:

```
json_data = """
{
  "store": "Main Street Books",
  "inventory": [
    { "type": "book", "title": "The Great Gatsby", "price": 12.50, "in_stock": true },
    { "type": "book", "title": "Moby Dick", "price": 15.00, "in_stock": false },
    { "type": "magazine", "title": "Tech Today", "price": 5.99, "in_stock": true }
  ],
  "location": {
    "city": "New York",
    "postcode": "10001"
  }
}
"""

searchable_json = parse_json(json_data)
...
```

Test case:

- `searchable_json.search("store")`
- `searchable_json.search("inventory[0].title")`
- `searchable_json.search("inventory[?in_stock==true]")`
- `searchable_json.search("inventory[?price<15.0].title")`
- `searchable_json.search("location.country")`

Output:

parse not fail

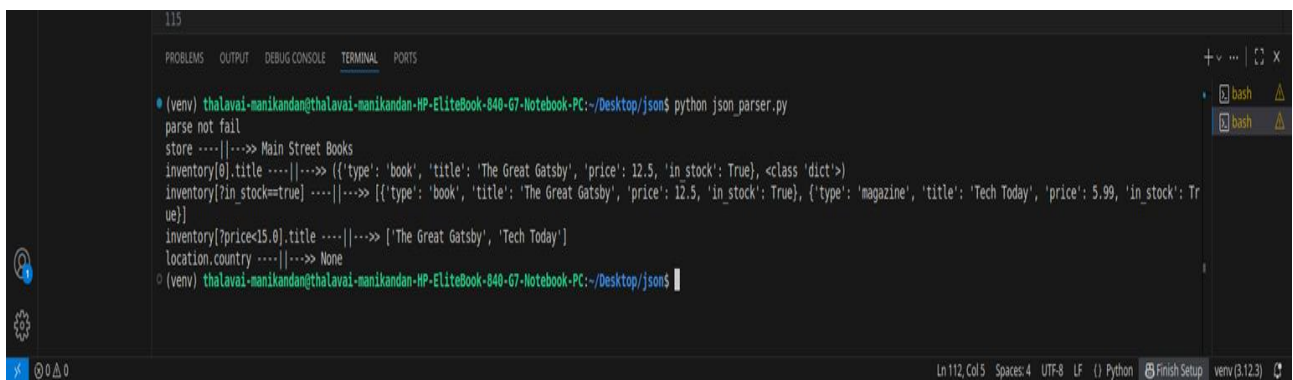
store ----||--->> Main Street Books

inventory[0].title ----||--->> ({'type': 'book', 'title': 'The Great Gatsby', 'price': 12.5, 'in_stock': True}, <class 'dict'>)

inventory[?in_stock==true] ----||--->> [{'type': 'book', 'title': 'The Great Gatsby', 'price': 12.5, 'in_stock': True}, {'type': 'magazine', 'title': 'Tech Today', 'price': 5.99, 'in_stock': True}]

inventory[?price<15.0].title ----||--->> ['The Great Gatsby', 'Tech Today']

location.country ----||--->> None



```
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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
(venv) thalavai-manikandan@thalavai-manikandan-HP-EliteBook-840-G7-Notebook-PC:~/Desktop/json$ python json_parser.py
parse not fail
store ----||--->> Main Street Books
inventory[0].title ----||--->> ({'type': 'book', 'title': 'The Great Gatsby', 'price': 12.5, 'in_stock': True}, <class 'dict'>)
inventory[?in_stock==true] ----||--->> [{'type': 'book', 'title': 'The Great Gatsby', 'price': 12.5, 'in_stock': True}, {'type': 'magazine', 'title': 'Tech Today', 'price': 5.99, 'in_stock': True}]
inventory[?price<15.0].title ----||--->> ['The Great Gatsby', 'Tech Today']
location.country ----||--->> None
(venv) thalavai-manikandan@thalavai-manikandan-HP-EliteBook-840-G7-Notebook-PC:~/Desktop/json$
```