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 apowerful 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