JSON

- This a file format represneting data
- The data is represented in the form of name value pairs
- syntax

```
'<name>': <value>
```

- type of data
  - simple
    - text
    - number
    - boolean
  - complex
    - object/map/dictionary
    - list
- text: text is represented in quotes (single or double)

```
"model": "Dell Lattitude 7027"
```

- number: number is represented without quotes

```
"price": 190009.99
```

- boolean: this has only two values true or false

```
"fingerprint": true
```

- object: object denoted with a {}

```
"address" : {
    "flatno": "601-A",
    "building": "Nilgiri"
}
```

- list:

```
"colors": ["black", "white"]
```

- Birth Certifacte in json

```
{
    "DateOfBirth": "12/05/2024",
    "Sex": "Female",
    "Name": "",
    "FathersName": "xxxyx",
    "MothersName": "xxxxx",
    "PlaceOfBirth": {
        "locationType": "Hosptial",
        "Address": {
            "Doorno": "1234",
            "street": "1232",
            "state": "Telangana",
            "pincode": "500016"
        }
    },
    "NumberOfCopies": 2,
    "CourierDelivery": true,
    "MobileNumber": "99999999999"

}
```

- Same in YAML

```
---
DateOfBirth: "12/05/2024"
Sex: "Female"
Name: ""
FathersName: "xxxyx"
MothersName: "xxxxx"
PlaceOfBirth:
  locationType: "Hosptial"
  Address:
    Doorno: "1234"
    street: "1232"
    state: "Telangana"
    pincode: "500016"
NumberOfCopies: "2"
CourierDelivery: "true"
MobileNumber: "99999999999"
```

- Structure we will mention types (grammar|syntax...)

```
{
    "DateOfBirth": text,
    "Sex": text,
    "Name": text,
```

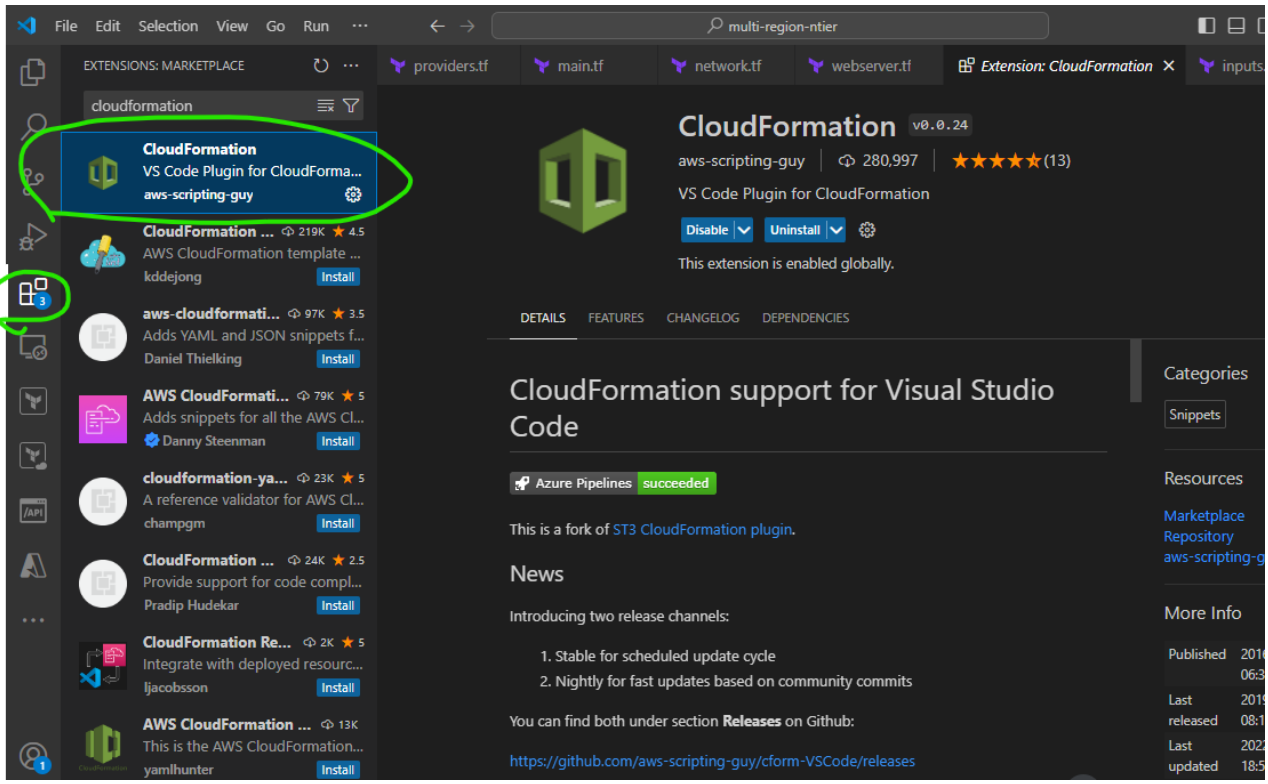
```
    "FathersName": text,
    "MothersName": text,
    "PlaceOfBirth": {
        "locationType": text,
        "Address": {
            "Doorno": text,
            "street": text,
            "state": text,
            "pincode": text
        }
    },
    "NumberOfCopies": number,
    "CourierDelivery": boolean,
    "MobileNumber": text

}
```

- Json files are generally creatd with extensions `.json` and yaml files with extension `.yaml` or `.yml`

Infrastructure as Code (IaC)

- This approach is about declaring infra as code i.e. we mention what we want
- the stuff which you have declared is called as `desired state` and what is actually present on the cloud is `actual state`
- The difference between desired state and actual state is called as `drift`
- IaC Tools will take desired state in the form of some file i.e. cloud formation takes the json or yaml file as input and ensures your desired state is maintained
- To express the desired state using cloudformation we would be using visual studio code



Cloudformation

- Cloudformation is an Iac Tool offered by AWS.
- Concepts:
    - Template: This is the desired state expressed by us in json or yaml format
    - Stack: when we want execute the template we create stack
- Cloudformation stack will execute the template to create the desired state. In case of any errors it will be reverted back to previous state.
- Cloudformation templates have a structure specified Refer Here
    - JSON Refer Here
    - YAML Refer Here
- In the Cloudformation Templates, Resources is the mandatory section as it describes the desired state.
- The minimal structure

```
{
    "Resources": {

    }
}
```

- To define a Resource Refer Here

```
{
    "Resources": {
        "<logical-id>": {
            "Type" : "Resource type",
            "Properties" : {

            }
        }

    }
}
```