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## Brief write up on flow:

### Flow:

- is a representation of conversation between bot & user
- is represented in the form of dialogs
- each dialog is represented by a node
- will have collection of nodes
- will have a purpose, probably an intent to perform
- will look like a graph

### Attributes of a flow :

- **id:**  
an unique identifier, usually UUID, automatically generated by the author tool
- **name:**  
friendly name which signifies the purpose, given by author
- **nodes:**  
an array of individual node(s)

### Node:

- each node represents a dialog either from bot or user
- will have a purpose, either to show to user or take input from user or do some processing
- each node may have one or more paths leading to other nodes

### Attributes of a node :

- **id:**  
an unique identifier(with in the flow) to identify a node, automatically generated by author tool
- **name:**  
friendly name which signifies the purpose of this node, given by author
- **type:**  
purpose of this node (eg., root, message, choice, question, card, process and end), given by author
- **subtype:**  
will have more information regarding the type of the node, given by author
- **msg:**  
a message which need to be shown to user ( or an array of messages from which randomly a message need to be picked), given by author
- **fieldId:**  
an entity, the value for which user has to provide, which later will be used while performing the intent, given by author
- **formId:**  
an identifier which represents a form, on which logically related fields will serve a purpose, given by author
- **Connections:**  
possible paths that lead to other nodes after executing current node, given by author

### Connection:

- a single path that lead to another node in the flow after executing current node, given by author

### Attributes of a Connection :

- **default:**  
which indicates where to move next, given by author
- **If:**  
which indicates where to move next, provided a condition is satisfied, given by author
- **name:**  
human readable or understandable name given for the connection

- **isButton:**

which states whether this connection need to be shown to user in the form of a button, so that user can click it to proceed further in that path

## Attributes of a If :

- **pre:**

which indicates that there is a pre-condition that need to be evaluated first, if this condition is successful only then the "if" condition will be evaluated, given by author

- **op:**

an operator (for eg., logical or something completely new which represents an operation), given by author

- **value:**

a value(s) to which comparison need to happen, given by author

- **context:**

which signifies about what context this check need to be done, given by author. for eg., "sentimentAnalysis" is used to check the sentiment analysis value and take decision.

- **then:**

which indicates where to move next on satisfying the condition, given by author

## Attributes of a Pre :

- **varname:**

which signifies the variable name ie., a field id, given by author

- **op:**

an operator (for eg., logical or something completely new which represents an operation), given by author

- **value:**

a value(s) to which comparison need to happen, given by author

## eg., of default in json:

```
{
  "default": "ffb8"
}
```

## eg., of if in json:

```
{
  "context": "",
  "op": "eq",
  "value": [
    "green"
  ],
  "then": "8193"
}

{
  "context": "sentimentAnalysis",
  "op": "eq",
  "value": [
    "-4"
  ],
  "then": "7ebe"
}
```

## eg., of if with pre in json:

```
{
  "context": "userInput",
  "op": "pattern",
  "value": [
    "*"
  ],
  "pre": {
    "varName": "bookingId",
    "op": "eq",
    "value": "null"
  },
  "then": "e41c"
}
```

## eg., of connection in json:

```
{
  "if": {
    "context": "userInput",
    "op": "pattern",
    "value": [
      "*"
    ],
  },
  "pre": {
    "varName": "bookingId",
    "op": "eq",
    "value": "null"
  },
  "then": "e41c"
}
```

## Types of nodes:

- **root:**

purpose is to say from which node execution need to be started, automatically generated by author tool when a flow is created

- **message:**

purpose is to show user a message

- **choice:**

purpose is to ask user a question with possible choices to choose from

- **card:**

purpose is to show user some content, probably text or media (image, audio or video)

- **process:**

purpose is to do some processing in the background, for eg., lets assume the purpose of a flow is to ask few questions to user, take answers and send its findings via an ema:

- **flowId:**

purpose is to inform that its time to execute another flow

- **end:**

purpose is to say end of flow, but this node itself doesn't exist in the flow, hence will not have any attributes

### eg., of node - *root* in json:

```
{
  "id": "root-node",
  "name": "flow71",
  "type": "root",
  "connections": [
    {
      "default": "304e"
    }
  ]
}
```

### eg., of node - *message* in json:

```
{
  "id": "dd9b",
  "type": "message",
  "subType": "text",
  "name": "",
  "msg": [
    "do you want to see a video, form or buttons?"
  ],
  "connections": [
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "button"
        ],
        "then": "0e1f"
      }
    },
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "form"
        ],
        "then": "d060"
      }
    },
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "video"
        ],
        "then": "7392"
      }
    },
    {
      "default": "end"
    }
  ]
}
```

### eg., of node - *choice* in json:

```
{
  "id": "304e",
  "type": "choice",
  "subType": "text",
  "name": "",
  "msg": [
    "Please choose one"
  ],
  "data": [
    "black",
    "green",
    "white"
  ],
  "connections": [
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "green"
        ],
        "then": "8193"
      }
    }
  ]
}
```

```

    },
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "white"
        ],
        "then": "011e"
      }
    },
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "black"
        ],
        "then": "287e"
      }
    },
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "no"
        ],
        "then": "599e"
      }
    },
    {
      "default": "end"
    }
  ]
}

```

**eg., of node - *card* in json:**

```

{
  "id": "7392",
  "type": "card",
  "subType": "video",
  "name": "",
  "msg": [
    "here is the video"
  ],
  "info": {
    "type": "video",
    "title": "video title",
    "subtitle": "video subtitle",
    "info": {
      "image_uri": "https://example.com/cdkydjg.jpg",
      "media_uri": "http://example.com/demos/sample-videos/small.mp4",
      "profile": "hd",
      "aspect": "4:3",
      "autostart": true,
      "autoloop": true,
      "mute": false,
      "controls": true,
      "alt_text": ""
    }
  },
  "connections": [
    {
      "default": "end"
    }
  ]
}

```

**eg., of node - *process* in json:**

```

{
  "id": "e342",
  "type": "process",
  "subType": "sendEmail",
  "name": "",
  "msg": [
    "Thanks!"
  ],
  "info": {
    "recipient": "kiran@example.io,johnm@example.io,nicolas@example.io",
    "subject": "email subject",
    "body": "This is the form:",
    "formId": "form1"
  },
  "connections": [
    {
      "default": "end"
    }
  ]
}

```

**eg., of node - *flowId* in json:**

```

{
  "id": "0elf",
  "type": "flowId",
  "name": "",
  "msg": [],
  "flowId": 71,
  "connections": [
    {
      "default": "end"
    }
  ]
}

```

**eg., of *flow* in json:**

```

{
  "id": 69,
  "name": "flow69",
  "nodes": [
    {
      "id": "root-node",
      "name": "flow69",
      "type": "root",

```

```

"connections": [
  {
    "default": "dd9b"
  }
],
{
  "type": "message",
  "subType": "text",
  "name": "",
  "msg": [
    "do you want to see a video, form or buttons?"
  ],
  "id": "dd9b",
  "connections": [
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "button"
        ],
        "then": "0e1f"
      }
    },
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "form"
        ],
        "then": "d060"
      }
    },
    {
      "if": {
        "context": "",
        "op": "eq",
        "value": [
          "video"
        ],
        "then": "7392"
      }
    }
  ],
  {
    "default": "end"
  }
],
{
  "type": "card",
  "subType": "video",
  "name": "",
  "msg": [
    "here is the video"
  ],
  "info": {
    "type": "video",
    "title": "video title",
    "subtitle": "video subtitle",
    "info": {
      "image_uri": "https://example.com/cdkydjg.jpg",
      "media_uri": "http://example.com/demos/sample-videos/small.mp4",
      "profile": "hd",
      "aspect": "4:3",
      "autostart": true,
      "autoloop": true,
      "mute": false,
      "controls": true,
      "alt_text": ""
    }
  },
  "id": "7392",
  "connections": [
    {
      "default": "end"
    }
  ],
  {
    "type": "flowId",
    "name": "",
    "msg": [],
    "flowId": 70,
    "id": "d060",
    "connections": [
      {
        "default": "end"
      }
    ]
  },
  {
    "type": "flowId",
    "name": "",
    "msg": [],
    "flowId": 71,
    "id": "0e1f",
    "connections": [
      {
        "default": "end"
      }
    ]
  }
]
}

```