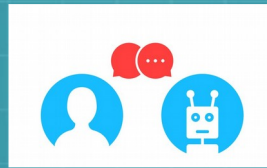


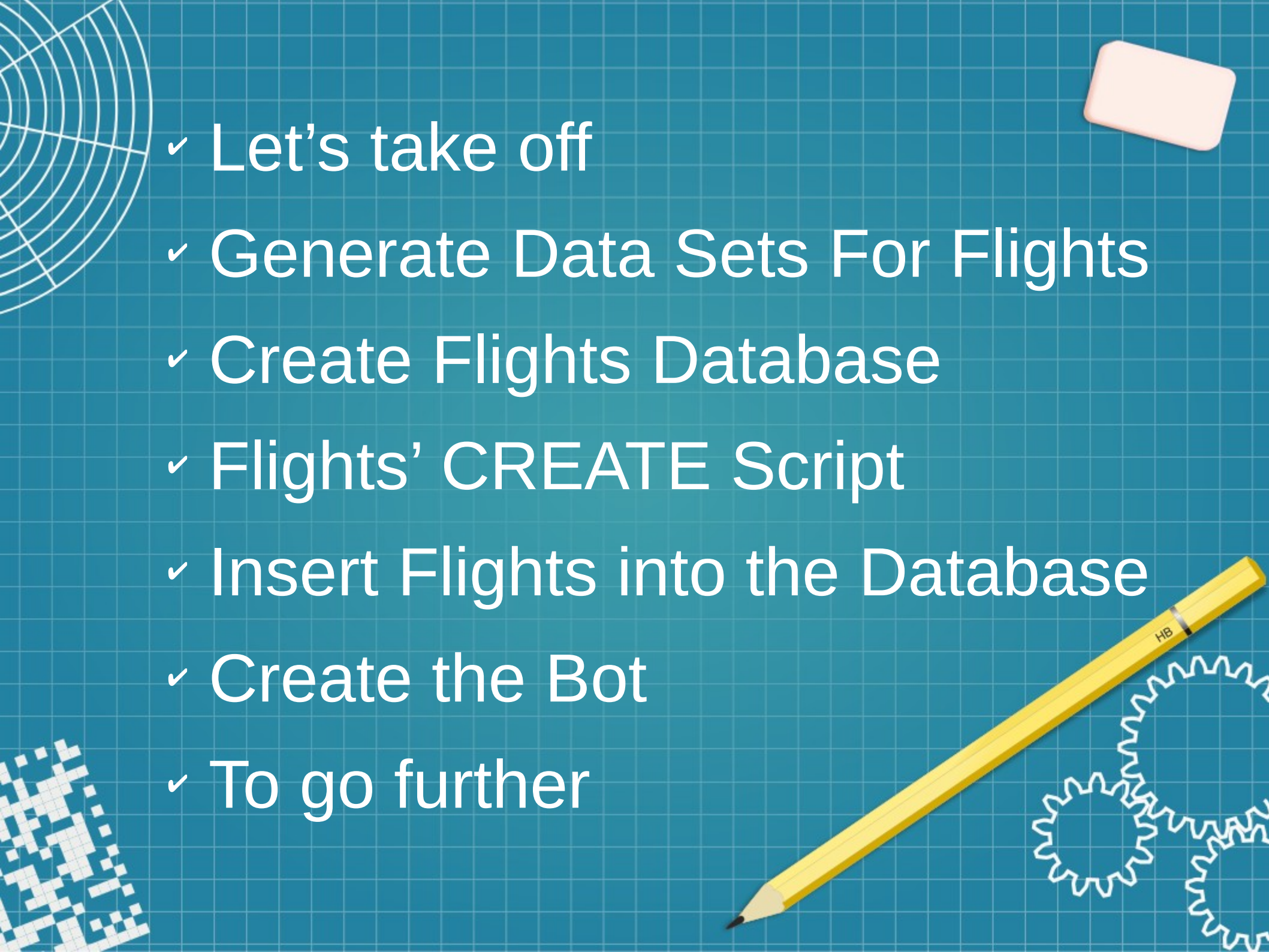
Build a Chatbot with Rasa (Natural Language Processing)



Presentation by Mr Namgyal BRISSON

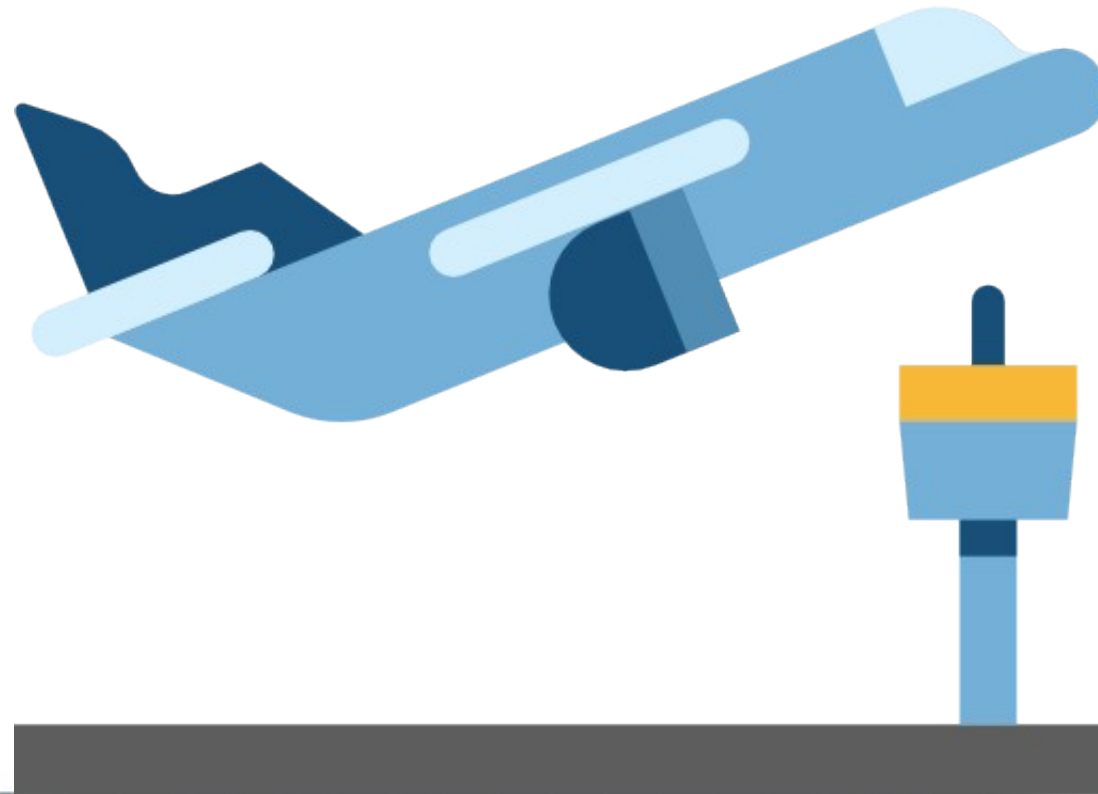
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It makes use of the works of Mateus Machado Luna.*



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- ✓ Let's take off
 - ✓ Generate Data Sets For Flights
 - ✓ Create Flights Database
 - ✓ Flights' CREATE Script
 - ✓ Insert Flights into the Database
 - ✓ Create the Bot
 - ✓ To go further

Let's take off

- [RASA Documentation](#)
- [Chatito](#): Training & Testing Data Generation
- Let's dig in with an Example on [Github](#)



Generate Data Sets For Flights

```
1 import ./common.chatito
2
3 # Ways to request a restaurant within a location (using probability operator)
4 # NOTE: 60% of the examples should come from the first sentence, and 40% from the second
5
6 %[findFlight]('training': '100', 'testing': '100')
7     *[60%] ~[hi?] ~[please?] ~[find?] ~[flight] ~[from] @[departure] ~[departure?] ~[to] @[destination] ~[destination?] ~[thanks?]
8     *[40%] ~[flights] ~[destination to] @[destination] ~[destination?]
9
10 @[departure]
11     ~[new york]
12     ~[san francisco]
13     ~[atlanta]
14     ~[port louis]
15     ~[paris]
16     ~[thaiwan]
17     ~[india]
18
19 @[destination]
20     ~[new york]
21     ~[san francisco]
22     ~[atlanta]
23     ~[port louis]
24     ~[paris]
25     ~[thaiwan]
26     ~[india]
27
28 ~[find]
29     find
30     look for
31     search for
32     help me find
33
34 ~[destination to]
35     destination to
36     in the area of
37     near by
38     go to
39     land to
40
41 ~[flights]
42     flight
43     plane
```

Create Flights Database



PK	DESTINATION	PRICE (€)	COMPANY
1	taiwan	500	air taiwan
2	thailand	700	air asia
3	california	600	air america
4	paris	1200	air france
5	paris	990	air italia
6	paris	1080	lufthansa
7	mauritius	1190	air france
8	mauritius	1280	air mauritius
9	india	599	air india
10	india	629	air mauritius

Flights' CREATE Script



```
create table if not exists flights
(
    pk INTEGER not null
        constraint flights_pk
        primary key
autoincrement,
    destination TEXT not null,
    price INTEGER not null,
    company TEXT not null
);
```

```
create unique index if not exists
flights_pk_uindex on flights (pk);
```

Insert Flights into the Database



```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (1, 'taiwan', 500, 'air taiwan');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (2, 'thailand', 700, 'air asia');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (3, 'california', 600, 'air america');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (4, 'paris', 1200, 'air france');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (5, 'paris', 990, 'air italia');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (6, 'paris', 1080, 'lufthansa');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (7, 'mauritius', 1190, 'air france');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (8, 'mauritius', 1280, 'air mauritius');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (9, 'india', 599, 'air india');
```

```
INSERT OR IGNORE INTO flights (pk, destination, price, company)
VALUES (10, 'india', 629, 'air mauritius');
```

Create the Bot



- Create database using SQLite (sqlite3)
 - Insert flights rows from fixture
- Training NLP parser with Chatito training data set (JSON)
- Reply with database records matching NLP parser entities
- Testing with samples

To go further



- Create a multi-domain bot
 - Create a training dataset for each domain you want to process (flight, restaurant, hotels, events, ...)
 - Aggregate them all into a Chatbot
 - Parallelize User's question to each bot by implementing a multi-processes application
 - Eventually, reply to the User for each domain from which you get replies

Time to Land...

Thanks for attending :)

