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| [Octobit8 Assighnment]  [2021] |  |
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| [5/23/2021]  [OCTOBIT8]  Authored by: [Rahul Kharatmol] |  |

# 1.Write a Python Program to compute the multiplication of two matrices and then print it.

# Matrics multiplication

# In python matrx multiplication we used for loops hence we can multiply with rows and column.

# Our matrix is 3 \* 3

# Each row is multiply by each column

# The logic behind is that

# 

# 

# Input

# 

# Output

# 

# 2. Write a Python program to find yesterday, today and tomorrow date.

# 

# Output

# 

# 3. Write a Python program to find Nth largest number in a list.

# In this program we used logic is that for loop and check the in the list which is maximum elements using the logic is greater than if the maximum element is greatest than that number is printed as last.

# Logic of this program

# 

# Input

# 

# Output

# 

# 4.Explain NLTK module in python and execute each step involved. Document the complete process.

Nltk

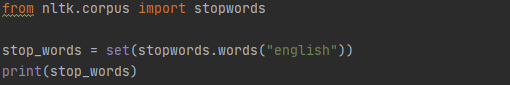
Nltk full form is Natural language toolkit. Nltk is python library which is used in python for text Analysis.

Nltk process

* Stop word Remove
* Tokenization
* Stemming
* Lemitization
* Pos tagging

Stop word Remove

A stop word is a commonly used word (such as {'mightn', 'over', 'isn', 'down', 'themselves', "haven't", 'into', 'shan', 'from', 'before', 'how', 'these', 'being', 'where', 'whom', 'needn', 'll', "hasn't", 'some', 'itself', 'wasn', 'if', 'here', 'through', 'what', 'but', 'does', 'myself', 'the', 'above', 'further', 'haven', 've', 't', 'few', 'off', 'i', 'd', 'a', 'an', 'its', 'yourself', 'who', 'more', 'theirs', 'yourselves', 'such', 'just', 'no', 'about', "hadn't", 'been', 'once', 'so', "needn't", 'am', 'we', 'had', 'those', 'any', 'yours', 'which', "doesn't", 'nor', 'under', "mightn't", 'all', 'this', "you're", 'o', 'shouldn', 'them', "isn't", 'will', 'can', "didn't", 'he', "you'd", 'mustn', 'won', 'aren', 'their', 'until', 'at', 'himself', 'below', 'hasn', 'why', 'there', 'do', 'did', 'when', 'most', 'than', 'by', 'weren', 'with', "shouldn't", "weren't", 'on', 'his', 'was', 'in', "wasn't", 'doing', 'herself', 'didn', 'or', 'ours', 'having', "wouldn't", 'of', "that'll", 'is', 'it', 'while', 'between', 'each', 'and', 'hers', 'don', 'wouldn', 'against', "it's", 'm', 'ain', "she's", 'couldn', 'out', 'ourselves', 'as', 'be', 'our', 'my', "don't", 'hadn', 'only', 'him', "couldn't", "you'll", 'her', 'have', 'not', 'are', 'she', 'after', 'then', 's', "mustn't", 'for', 'own', 're', 'same', 'ma', "should've", "shan't", 'during', 'y', 'up', 'your', 'doesn', 'were', 'they', 'both', 'should', 'that', 'you', 'me', 'very', "you've", 'has', 'to', 'because', 'other', 'now', "won't", 'again', "aren't", 'too'} that a search engine has been programmed to ignore, both when indexing entries for searching and when retrieving them as the result of a search query.



Using this stop words can remove the stop words which are present in sentence.



This is our sentence in that are and in are stop word that stop word removed by this import stopwords.



Tokenization

In tokenization that text are converted into small chunks. Hence we can get tokenized words for further text analysis. In this process each word get tokenized.

In our project there is small chunks are like

Stemming

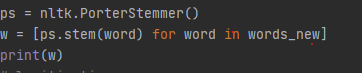
Stemming is nothing but removed the prefix and postfix word according that we will get the words.for example

Caring =car

This is remove ing but the meaning forthis word is totally change

In our project

Code



Output



In our project the people of e is removed they will get meaning less

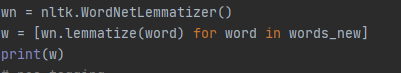
Also verry word is converted into verri

lemitization

in lemmatization it will get meaningful words hence we will get meaningful word this is verry useful for text analysis.

In our project

Code



Output

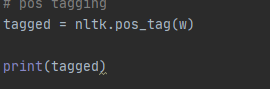


Pos tag

In pos tagging we will get noun, adverb and Adjective using for particular Text.

Pos tagging

Code



Output



# 5. What is Convolution Neural Network? Illustrate using python and document the process.

# What is cnn in neural network.

# Cnn is mostly used in image precession. For detecting the object . in cnn technique used feature extraction technique for that extracft features them the data and convolute them and using function get better output.

# In the feature map we used 3 \* 3 multiplication of two matrix.

# 

# With the convolution used the activation function like Relu .

# Relu Activation function is negative values are converted into positive values for linearity of matrix.

# In our code is handwritten recognition the recognized what are the handwritten words are present with using CNN algo.

# 

# In above code this is handwritten recognition dataset .load from the google.and the store into x\_train and Y\_train. After that will be stored as numeric. categorical data is converted into numeric.

# 

# Activation function is used for particular dataset is Relu.

# Accuracy

# 

# 6. Implement NLP analysis of a restaurant review in python.

# In Restaurant review analysis used the dataset is restaurant.tsv

# In that first install nlk library for preprocessing the dataset .

# That data converted into numbers after that into numeric values and that converted as process . algorithms are Random forest and xgboost.

# Dataset

# In restaurant dataset I collect from Kaggle that is restaurant.tsv

# Restaurent code

# Input

# 

# 

# Output

# 

# .

# 7. Create Line Graph, Bar chart, Histograms, Scatter plot, Pie Chart, 3D plots using matplotlib in python.

# Line graph

# Input

# 

# Output

# 

# Bar chart

# 

# 

# Histogram

# 

# 

# Scatter plot

# 

# 

# Piechart

# 

# 

# 3 d plot

# 

# 

# 8 .Implement a class in python and explain all the properties of a class using OOPs in python

In chatbot many frameworks like

Dialogflow

Chatfuel

Manychats

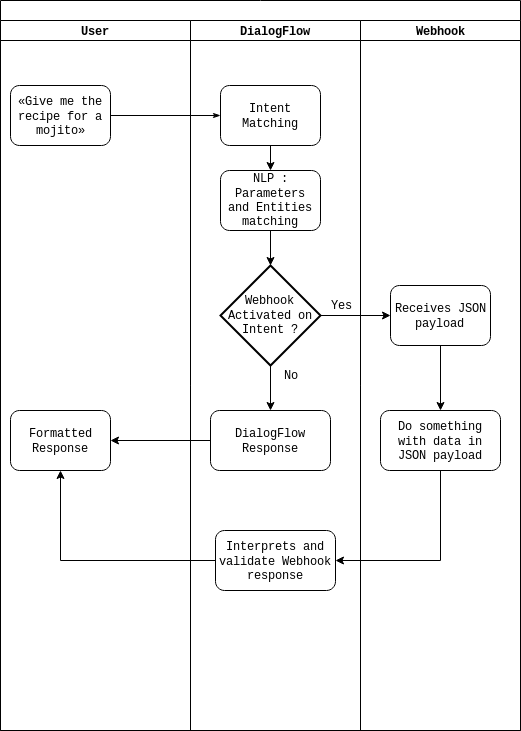
Rasa etc

I m used framework Dialogflow for creation of chatbot

Dialogflow

[DialogFlow](https://cloud.google.com/dialogflow)is a natural language understanding platform (based on Google’s AI) that makes it easy to design and integrate a conversational user interface into your mobile app, web application, device, bot, interactive voice response system, and so on. Using DialogFlow, you can provide new and engaging ways for users to interact with your product.

Activity Diagram of Dialogflow



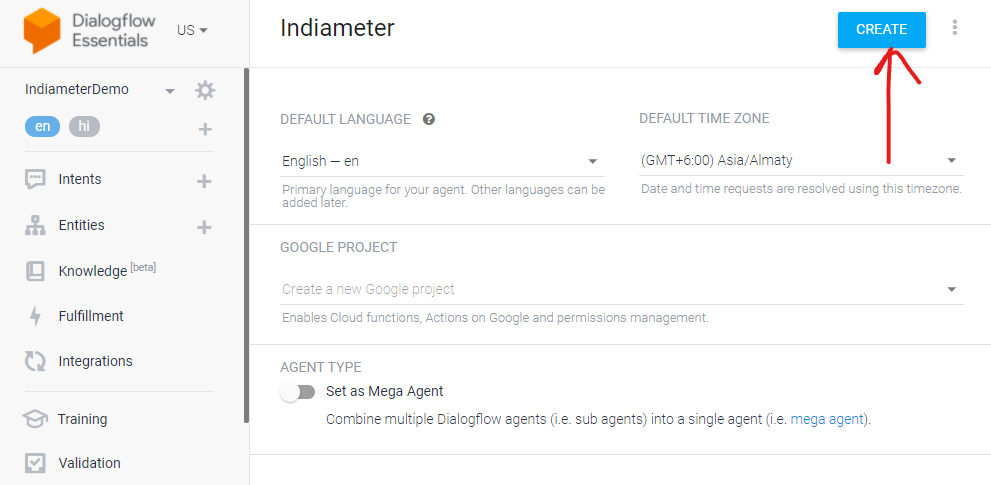
Enter user question

Lets explain one by one process in dialogflow

* create an agent
* create an intent
* training
* knowledge
* fulfillment
* Wehbook
* inline editor
* integration
* Training
* validation
* History
* Analytics

create an agent

For agent creation first login the dialog flow account after that click on create agent then enter agent name as what u want that is I m taking one example as India meter.



Intent is starting point of conversation Each intent contains following parameter like

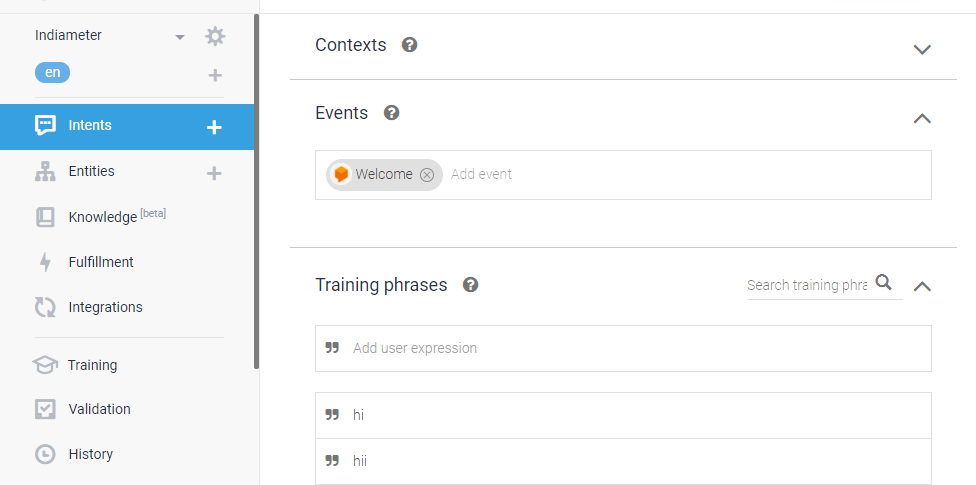
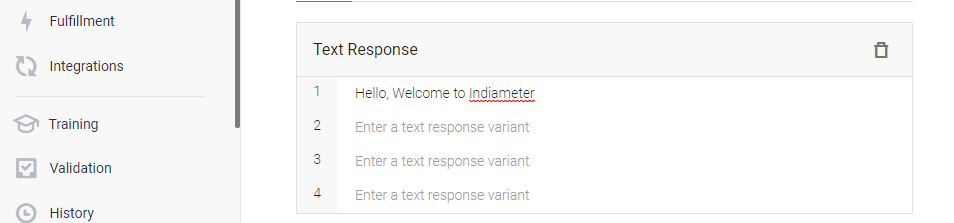
Training phrases

Default intent in default intent once enter the user response hi then response that phase according As a Welcome To India meter In training phrases check which kind of question asked that enters in the training phrases

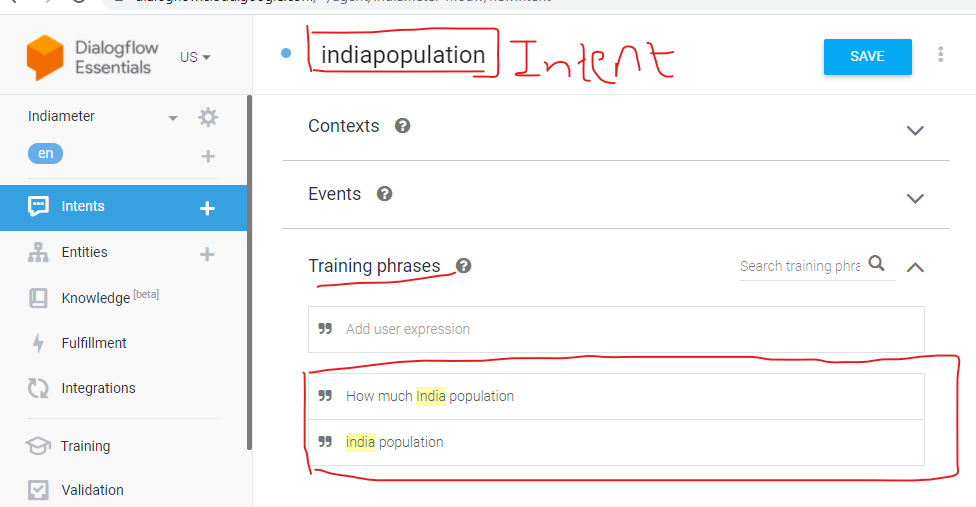
Lets take India meter example I’m created one entity like India population

In this India meter project indiapopulation is an intents and how much India population and India population are training phrases.

Default intent

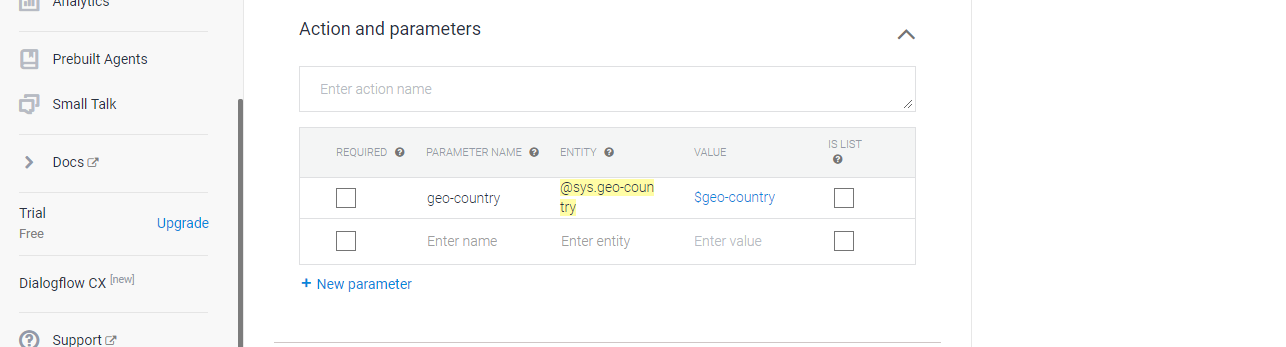


Create one intent



Parameter

In parameter section there is four option like REQUIRED ,PARAMETER ,NAME,VALUE ,IS LIST and PROMPT .in that parameter consist entity that user based or system based entity.



Response

After inserting some user search there is one response through the bot is. In India meter response is

India 2020 population is estimated at 1,380,004,385 people at mid year according to UN data.



Create an Entity

Entity are three types of entity

System entity

Developer Entity

Session Entity

System entity

System entity is nothing but system defend that which already predefined by dialogflow that entity are In indiameter there is Count

|  |  |
| --- | --- |
| Name | Enitity |
| Date and Time | @sys.date-time |
| Date and Time | @sys.date-period |
| Numbers | @sys.number |
| Amounts with Units | @sys.unit-information |
| Unit Names | @sys.currency-name |
| Geography | @sys.geo-country-code |
| Contacts | @sys.email |
| Names | @sys.last-name |
| Other | @sys.color |

Developer Entity

Developer entity is nothing but user defined entity which if u want enter some details like if u want like I just want some here details like what kind of minerals are found that is entity is called user defined entity

Session entity

A session represents a conversation between a Dialogflow agent and an end-user. You can create special entities, called session entities, or user entities, during a session. Session entities can extend or replace custom entity types and only exist during the session that they were created for. All session data, including session entities, is stored by Dialogflow for 20 minutes.

Class

Class is s nothing but blueprint of object.

Like one example if object is xyz then class also xyz.

Class xyz

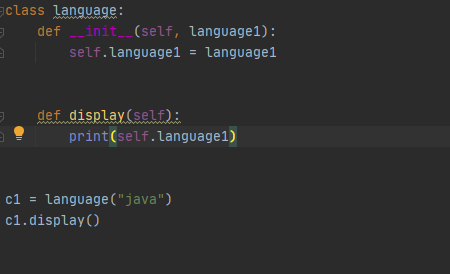
Xyz

Object

Object is nothing but instance of class

Obj = xyz()

### Creating Class and Object in Python



In above example object is language and class is also language .

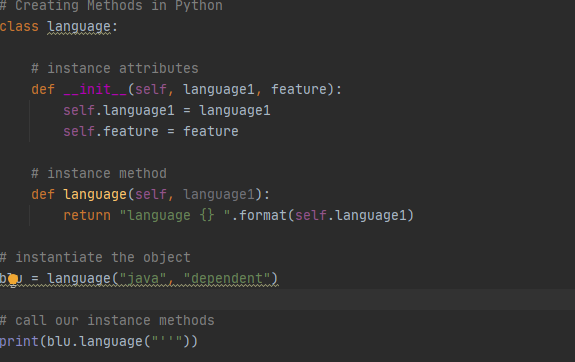
\_\_init\_\_ is initialiazer method to used initialization of class.

create instances of the language class. Here java are locations (value) to our new objects.

Output



### Creating Methods in Python

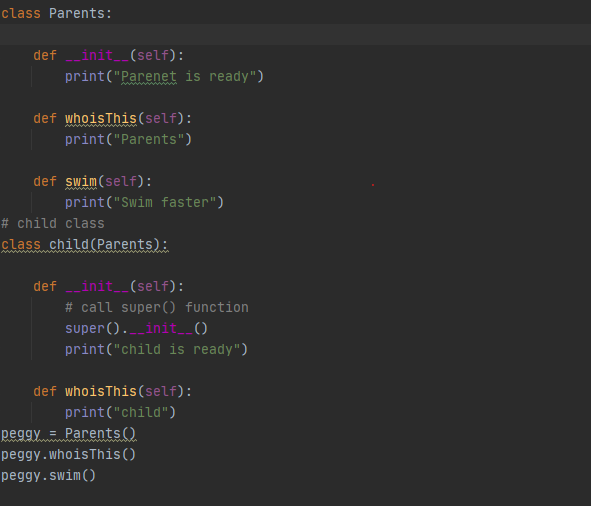


In that one methods are called that’s is languages .

Output



Inheritance

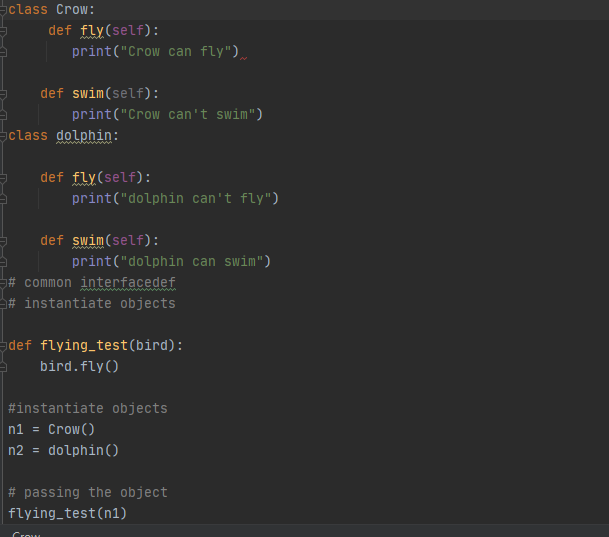


In this inheritance one is parent calss and one is child class.in inheritance in the child class can call parent class but in parent class we cant call child class.



In above example parent class and child class also called.

Polymorphism



In polymorphism method are same but function are different in above example methos is fly but function of particular crow and dolphin are different.

Output



Encapsulation

In encapsulation the prevents the direct modification in python.

