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**University admission prediction**

**PROJECT REPORT**

**Submitted by**

**Code Warriors**

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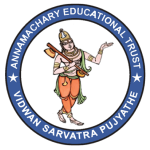
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***In partial fulfilment for the award of the Certificate***

**of**

**SUMMER INTERNSHIP PROGRAM**

**Department of Computer Science and Engineering**

**Annamacharya Institute of Technology and Sciences**

**Venkatapuram Village , Renigunta Mandal , Tirupati , Andhra Pradesh 517520**

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### BONAFIDE CERTIFICATE

This is to certify that the project entitled ” **University admission prediction**” submitted by **Team P. Rehitha, K.Prathyusha,** **J. Sai Sree Vidya** , **M.Reddy Rani , M.Reshma** in partial fulfilment for the requirements for the award of internship certification in technologies of Machine learning and Deep learning is an authentic work carried out by them under my supervision and guidance.

To the best of my knowledge, the matter embodied in the project report has not been submitted to any other University/Institute for the award of any Degree or Diploma.

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UNIVERSITY ADMISSION PREDICTION

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# INTRODUCTION:

## PYTHON:

### What can Python do?

* Python can be used on a server to create web applications.
* Python can be used alongside software to create workflows.
* Python can connect to database systems. It can also read and modify files.
* Python can be used to handle big data and perform complex mathematics.
* Python can be used for rapid prototyping, or for production-ready software development.

### Why Python?

* Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc).
* Python has a simple syntax similar to the English language.
* Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
* Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.
* Python can be treated in a procedural way, an object-orientated way or a functional way.

### Good to know

* The most recent major version of Python is Python 3, which we shall be using in this tutorial. However, Python 2, although not being updated with anything other than security updates, is still quite popular.
* In this tutorial Python will be written in a text editor. It is possible to write Python in an Integrated Development Environment, such as Thonny, Pycharm, Netbeans or Eclipse which are particularly useful when managing larger collections of Python files.

### Python Syntax compared to other programming languages

* Python was designed for readability, and has some similarities to the English language with influence from mathematics.
* Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.
* Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curly-brackets for this purpose.

# PYTHON LIBRARIES

* [Tensor Flow](https://www.edureka.co/blog/python-libraries/#z1)
* [Scikit-Learn](https://www.edureka.co/blog/python-libraries/#z2)
* [Numpy](https://www.edureka.co/blog/python-libraries/#z3)
* [Keras](https://www.edureka.co/blog/python-libraries/#z4)
* [PyTorch](https://www.edureka.co/blog/python-libraries/#z5)
* [LightGBM](https://www.edureka.co/blog/python-libraries/#z6)
* [Eli5](https://www.edureka.co/blog/python-libraries/#z7)
* [SciPy](https://www.edureka.co/blog/python-libraries/#z8)
* [Theano](https://www.edureka.co/blog/python-libraries/#z9)
* [Pandas](https://www.edureka.co/blog/python-libraries/#z10)

**Machine Learning:**

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. **Machine learning focuses on the development of computer programs** that can access data and use it learn for themselves.

The process of learning begins with observations or data, such as examples, direct experience, or instruction, in order to look for patterns in data and make better decisions in the future based on the examples that we provide. **The primary aim is to allow the computers learn automatically** without human intervention or assistance and adjust actions accordingly.

**Some machine learning methods**

Machine learning algorithms are often categorized as supervised or unsupervised.

**Supervised machine learning algorithms**can apply what has been learned in the past to new data using labeled examples to predict future events. Starting from the analysis of a known training dataset, the learning algorithm produces an inferred function to make predictions about the output values. The system is able to provide targets for any new input after sufficient training. The learning algorithm can also compare its output with the correct, intended output and find errors in order to modify the model accordingly.

In contrast, **unsupervised machine learning algorithms**are used when the information used to train is neither classified nor labeled. Unsupervised learning studies how systems can infer a function to describe a hidden structure from unlabeled data. The system doesn’t figure out the right output, but it explores the data and can draw inferences from datasets to describe hidden structures from unlabeled data.

**Semi-supervised machine learning algorithms** fall somewhere in between supervised and unsupervised learning, since they use both labeled and unlabeled data for training – typically a small amount of labeled data and a large amount of unlabeled data. The systems that use this method are able to considerably improve learning accuracy. Usually, semi-supervised learning is chosen when the acquired labeled data requires skilled and relevant resources in order to train it / learn from it. Otherwise, acquiringunlabeled data generally doesn’t require additional resources.

**Reinforcement machine learning algorithms**is a learning method that interacts with its environment by producing actions and discovers errors or rewards. Trial and error search and delayed reward are the most relevant characteristics of reinforcement learning. This method allows machines and software agents to automatically determine the ideal behavior within a specific context in order to maximize its performance. Simple reward feedback is required for the agent to learn which action is best; this is known as the reinforcement signal.

Machine learning enables analysis of massive quantities of data. While it generally delivers faster, more accurate results in order to identify profitable opportunities or dangerous risks, it may also require additional time and resources to train it properly. Combining machine learning with AI and cognitive technologies can make it even more effective in processing large volumes of information.

# **PROJECT DESCRIPTION:**

University admission prediction is used for predicting whether a person is going to get seat in a particular university or not .It is a web based application system in which students can register their marks along with their personal information. This helps to predict their admissions in colleges. Administrator can add the college details and the batch details. Using this application, the entrance seat allotment becomes easier and efficient. The main advantage of the project is the computerization of the entrance seat allotment process. The total time for the entrance allotment becomes lower and the allotment process becomes faster. It makes students to take the right decision for choosing their college.

# LITERATURE REVIEW:

The main profile of our project is to predict whether a student gets admission in a particular university or not to the marks that he has scored .This is a web based application system in which students can register their marks along with their personal information. This project helps us to predict their admissions in colleges.Here we have taken decision tree regressor as our requirement for the project .We have taken the dataset from kaggle.com for our project.

# SYSTEM REQUIREMENTS:

# Anaconda software

# Integrated Developing Environment

# Basic python language

**DATA COLLECTION:**

## ATTRIBUTES:

* GRE score
* TOEFL score
* University rating
* SOP
* LOR
* CGPA
* Research
* Chance of admit

**METHODOLOGY:**

|  |  |  |
| --- | --- | --- |
| Here for this project we implement the decision tree regressor algorithm. Decision tree builds regression or classification models in the form of a tree structure. It breaks down a dataset into smaller and smaller subsets while at the same time an associated decision tree is incrementally developed. The final result is a tree with **decision nodes** and **leaf nodes**. A decision node (e.g., Outlook) has two or more branches (e.g., Sunny, Overcast and Rainy), each representing values for the attribute tested. Leaf node (e.g., Hours Played) represents a decision on the numerical target. The topmost decision node in a tree which corresponds to the best predictor called **root node**. Decision trees can handle both categorical and numerical data. |  |  |

Decision Tree is one of the most popular and powerful algorithm. Decision Tree algorithm falls under the category of supervised learning algorithms. It works for both continuous as well as categorical output variables. Here we are going to implement continuous output variables.

## //IMPORTING THE LIBRARIES

Import numpy as np

Import matplotlib.pyplot as plt

Import pandas as pd

## //IMPORTING PACKAGES

Import types

import pandas as pd

from botocore.client import Config

Import ibm\_boto3

def \_\_iter\_\_(self): return 0

## // DATA ANALYSIS

x=dataset.iloc [:1,:-1].values

x

y=dataset.iloc [:,-1:].values

y

## //FITTING DECISIONTREEREGRESSOR TO THE DATASET

from sklearn.tree import DecisionTreeRegressor

regressor=DecisionTreeRegressor(random\_state=0)

regressor.fit(x,y)

## //PREDICTING A NEW RESULT

y\_pred=regressor.predict ([[337,116, 4, 4.5, 4.5, 9.65, 1]])

y\_pred

## //DEPLOYMENT

from watson\_machine\_learning\_client import WatsonMachineLearningAPIClient

wml\_credentials={

"access\_key":"3gYViu1\_IhJRiUqD-eQK\_k80ZL53NpFX4ho3tieoatmg",

"instance\_id": "c95adf1e-b800-41e2-acfd-fd36b972f751",

"password": "80775362-88aa-4774-a387-f3ca9b6c4834",

"url": "https://eu-gb.ml.cloud.ibm.com",

"username": "685fadee-ff58-4f71-afad-ee166baeb569"

}

client=WatsonMachineLearningAPIClient(wml\_credentials)

model\_props= {

client.repository.ModelMetaNames.AUTHOR\_NAME:"ibm",

client.repository.ModelMetaNames.AUTHOR\_EMAIL:"ibm@ibm.com",

client.repository.ModelMetaNames.NAME:"linearregresssion"

}

model\_artifact=client.repository.store\_model(regressor,meta\_props=model\_props)

published\_model\_uid=client.repository.get\_model\_uid(model\_artifact)

created\_deployment=client.deployments.create(published\_model\_uid,name="linearregression")

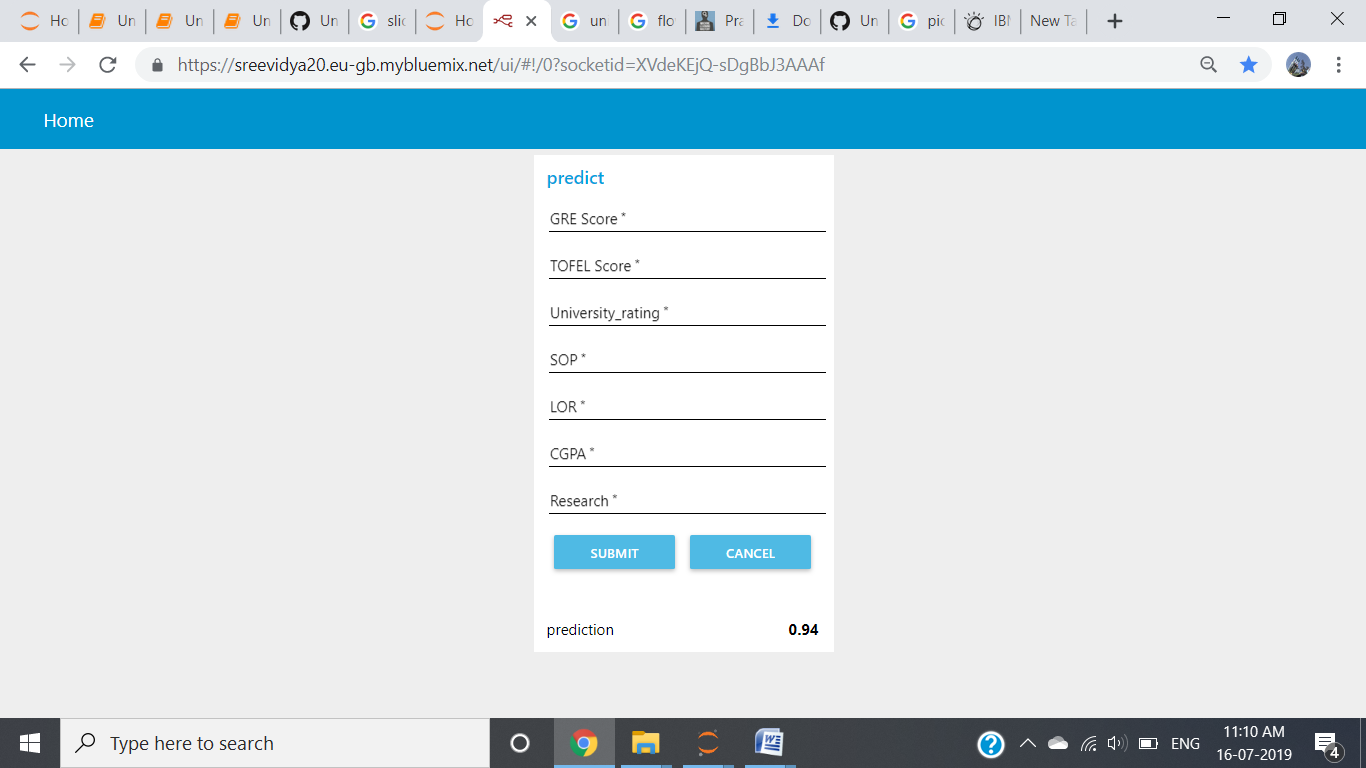
scoring\_endpoint=client.deployments.get\_scoring\_url(created\_deployment)

scoring\_endpoint

# FINDINGS AND SUGGESTIONS:

Here we find the prediction by using the inputs in the dataset. In this project we have used decision tree regressor algorithm which is very popular and efficient. We find the accuracy by using the algorithm. We can use different algorithms based on our dataset and our requirement. Doing this process without using machine learning algorithms leads to waste of time and money. Use of machine learning will not lead to waste of time and money.

**PREDICTION:**



# CONCLUSION:

We here by conclude that using machine learning will help us for prediction of the future.It will take more time when we don’t use machine learning.In this project we predict whether a person is able to avail a seat in a particular university or not by using machine learning which reduces time and cost.Algorithms will help us to getting good accuracy.They are different algorithms in machine learning.Here we have used decision tree regression algorithm based on our requirement.

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