

## MACHINE LEARNING PROJECT

PROJECT NAME : LAND PRICE PREDICTION

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## Content Table

Serial No.	Title	Page No
1	Cover page	1
2	Content table	2
3	List of figures	2
4	Abstract of project	3
5	Project summary	3
6	Objectives of Project	4
7	System Requirements used	5
8	Details of project developed	5
9	Data Flow Diagram	6
10	Input/output datasets	7
11	Text code/program	90
12	References	11

## List of Figures

### 1. Data Flow Diagram:

Caption : Data Flow Diagram

Page No : 6

Figure No:1

## Abstract of Project

Project Title : LAND PRICE PREDICTION

1. The development of a machine learning model which can predict land prices can help a land seller, buyer or real estate agent to make better, informed decisions based on current price valuation
2. Land prices are increasing rapidly, yet the various online websites where land is less likely to be updated on a regular basis; this leads buyers or sellers to not get the best value for their money or land.
3. we aim at developing a machine learning model that takes into consideration the various factors in the real estate market in real time
4. To predict the property prices, we ensemble two ML architectures, based on Linear Regression(LR).

## Project Summary

Project Title : LAND PRICE PREDICTION

1. Land price prediction is a model that help to give data of the current price of land Based on real state time and environmental condition
2. The model will predict the future price of the land based on current and older Data

## Objectives Of Project

1. The real estate land data is used in this and it is taken from the machine learning repository and the data is spread across many rows and attributes. The description of the data set is given below
  1. Area : it is a float value given by user which give the information of the area of the land in acre
  2. Near city : it is a variable, represent if the land is near to city are or not
  3. Soil fertility : it is a variable represent if the soil of the land is fertile
  4. Water Source :it is a variable represent if the land have any water source around it
  5. Weather condition : it is a variable represent the average weather condition of the area
  6. Year : it use to compare the trend
  7. Price : it a variable determine the cost of land based on the above parameter
2. Linear regression models assume that the relationship between a dependent continuous variable Y and one or more explanatory or independent variables X (Area, Near city, Soil fertility, Water source, Weather condition, Year) is linear. It's used to predict continuous range values(Price)
3. We use the multilinear Regression of the model to obtain better result of the output

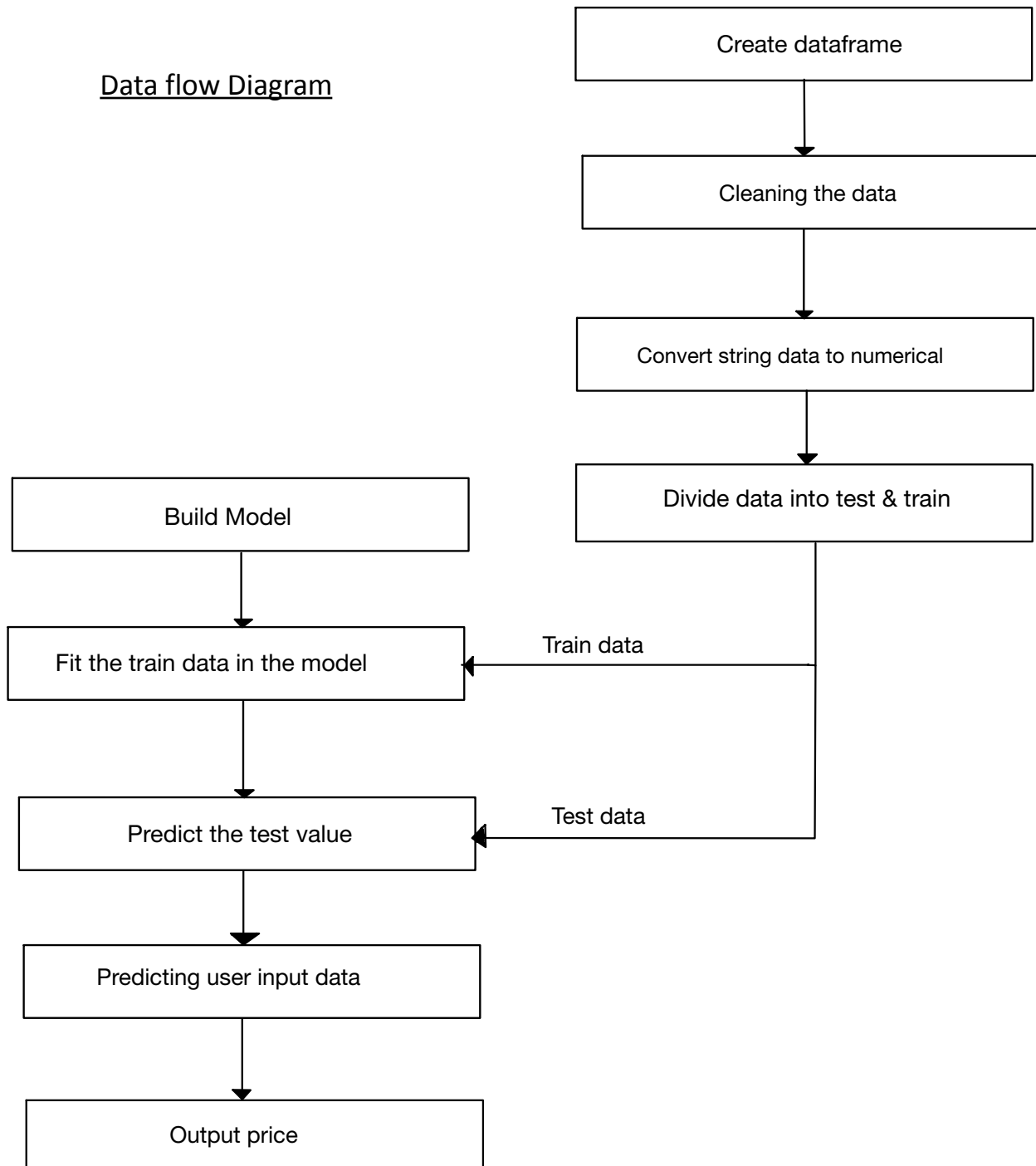
### System Requirement Used

1. Windows 10
2. Jupyter Notebook

### Details of project developed

1. Import the required package
2. Creating the data set/data frame of the land price
3. Cleaning the data by removing the null values present in the data set
4. Converting the string data type to numerical data type from the cleaned data set
5. Creating the model, we use the multilinear regression model
6. Splitting the cleaned data into test data set and train data set
7. Fit the train data into the model
8. Predicting the price from the test case to check the accuracy
9. Calculating the score
10. Take the input from the user and predict the price

## Data flow Diagram



## Input/Output screenshots

```
In [*]: a=float(input("are of the land in acre : "))
c=int(input("land is near to city then 1 or 0 : "))
s=int(input("land has fertili soil then 0 or 1 :"))
w=int(input("land has water source then 1 or 0 : "))
r=int(input("land has good weather then 1 or 0 : "))
n=int(input("enter the year : "))
```

are of the land in acre :

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w=int(input("land has water source then 1 or 0 : "))
r=int(input("land has good weather then 1 or 0 : "))
n=int(input("enter the year : "))
```

are of the land in acre : 8.8

land is near to city then 1 or 0 :

```
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w=int(input("land has water source then 1 or 0 : "))
r=int(input("land has good weather then 1 or 0 : "))
n=int(input("enter the year : "))
```

are of the land in acre : 8.8

land is near to city then 1 or 0 : 1

land has fertili soil then 0 or 1 :

```
In [*]: a=float(input("are of the land in acre : "))
c=int(input("land is near to city then 1 or 0 : "))
s=int(input("land has fertili soil then 0 or 1 :"))
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w=int(input("land has water source then 1 or 0 : "))
r=int(input("land has good weather then 1 or 0 : "))
n=int(input("enter the year : "))
```

```
are of the land in acre : 8.8
land is near to city then 1 or 0 : 1
land has fertili soil then 0 or 1 :0
land has water source then 1 or 0 : 1
land has good weather then 1 or 0 : 1
```

```
enter the year : 2021
```

```
In [104]: model.predict([[a,c,s,w,r,n]])
```

```
Out[104]: array([103.01872531])
```

```
In [17]: a=float(input("are of the land in acre : "))
c=int(input("land is near to city then 1 or 0 : "))
s=int(input("land has fertili soil then 0 or 1 :"))
w=int(input("land has water source then 1 or 0 : "))
r=int(input("land has good weather then 1 or 0 : "))
n=int(input("enter the year : "))
```

```
are of the land in acre : 8.8
land is near to city then 1 or 0 : 1
land has fertili soil then 0 or 1 :0
land has water source then 1 or 0 : 1
land has good weather then 1 or 0 : 1
enter the year : 2021
```

```
In [18]: model.predict([[a,c,s,w,r,n]])
```

```
Out[18]: array([162.37249788])
```



## Code

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.preprocessing import LabelEncoder
import matplotlib.pyplot as plt
model=LinearRegression()

df=pd.read_csv("data.csv")

df.isnull().sum()

city=LabelEncoder()
soil=LabelEncoder()
water=LabelEncoder()
weather=LabelEncoder()
c1=city.fit_transform(df["Near city"])
s1=soil.fit_transform(df["Soil fertility"])
w1=water.fit_transform(df["Water Source"])
w2=weather.fit_transform(df["Weather condtion"])

dfnew=df
dfnew["Near city"]=c1
dfnew["Soil fertility"]=s1
dfnew["Water Source"]=w1
dfnew["Weather condtion"]=w2

x=df[["Area","Near city","Soil fertility","Water Source","Weather condtion","Year"]]
y=df.Price

trainx,testx,trainy,testy=train_test_split(x,y,test_size=10)

model.fit(trainx,trainy)
```

```
model.score(trainx,trainy)
```

```
model.predict(testx)
```

```
testy
```

```
a=float(input("are of the land in acre: "))
```

```
c=int(input("land is near to city then 1 or 0 : "))
```

```
s=int(input("land has fertile soil then 0 or 1 :"))
```

```
w=int(input("land has water source then 1 or 0 : "))
```

```
r=int(input("land has good weather then 1 or 0 : "))
```

```
n=int(input("enter the year : "))
```

```
model.predict([[a,c,s,w,r,n]])
```

## References :

1.  data