ABALONE AGE PREDICTION USING IBM WATSON

1. INTRODUCTION

1.1 Overview

Abalone is a shellfish considered a delicacy in many parts of the world. An excellent source of iron and pantothenic acid, and a nutritious food resource and farming in Australia, America and East Asia. 100 grams of abalone yields more than 20% recommended daily intake of these nutrients. The economic value of abalone is positively correlated with its age. Therefore, to detect the age of abalone accurately is important for both farmers and customers to determine its price.

1.2 Purpose

However, the current technology to decide the age is quite costly and inefficient. Farmers usually cut the shells and count the rings through microscopes to estimate the abalone's age. Telling the age of abalone is therefore difficult mainly because their size depends not only on their age, but on the availability of food as well. Moreover, abalone sometimes form the so-called ‘stunted’ populations which have their growth characteristics very different from other abalone populations This complex method increases the cost and limits its popularity. Our goal is to find out the best indicators to forecast the rings, then the age of abalone.

2. LITERATURE SURVEY

2.1 Existing problem

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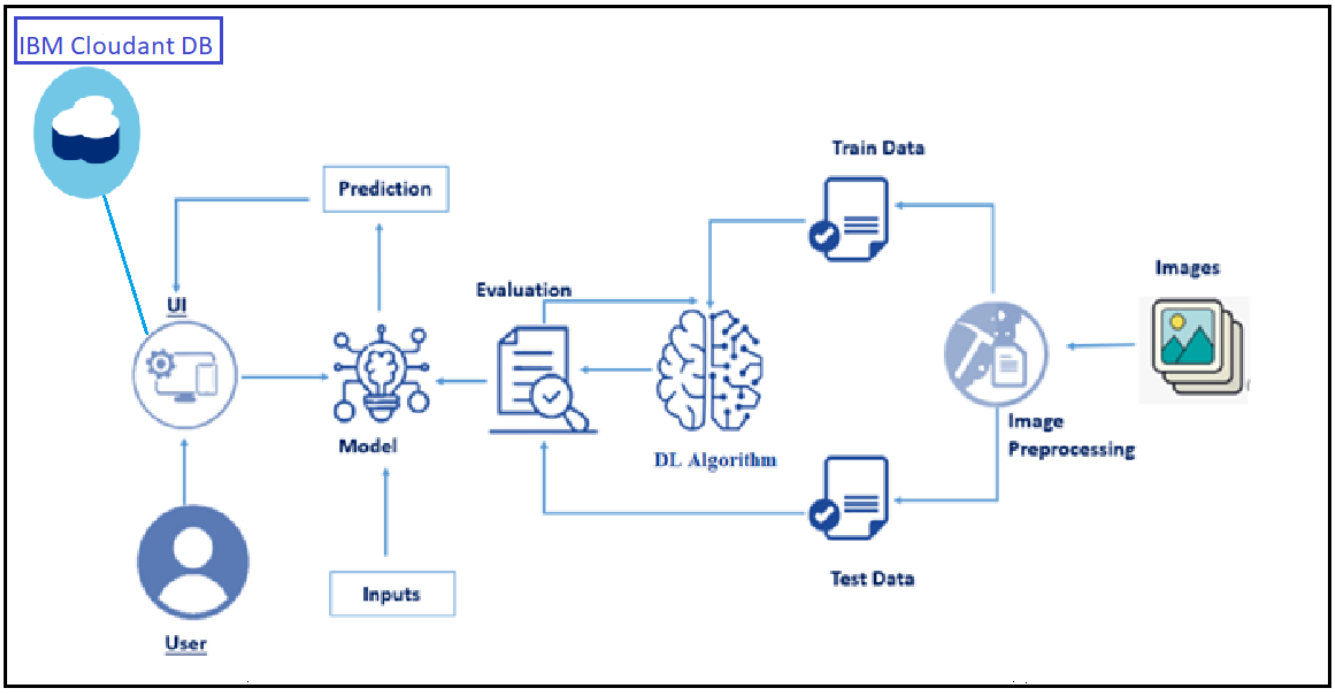
2.2 Proposed solution

Abalone is a common name for sea snails. Determining their age is a detailed process. Their shell is cut through the cone, stained and the rings are counted using a microscope .This is a time-consuming process that can be simplified by using neural networks to predict their age using the physical measurement of the abalone Here, we use measurements such as length, height, weight, and other features to predict their age.

3. THEORITICAL ANALYSIS

3.1 Block Diagram



3.2 Hardware / Software designing

Software Requirements:

- Anaconda Navigator
- Tensor flow
- Keras
- Flask

Hardware Requirements:

- Processor : Intel Core i3
- Hard Disk Space : Min 100 GB

- Ram : 4 GB
- Display : 14.1 “Color Monitor(LCD, CRT or LED)

  Clock Speed : 1.67 GHz

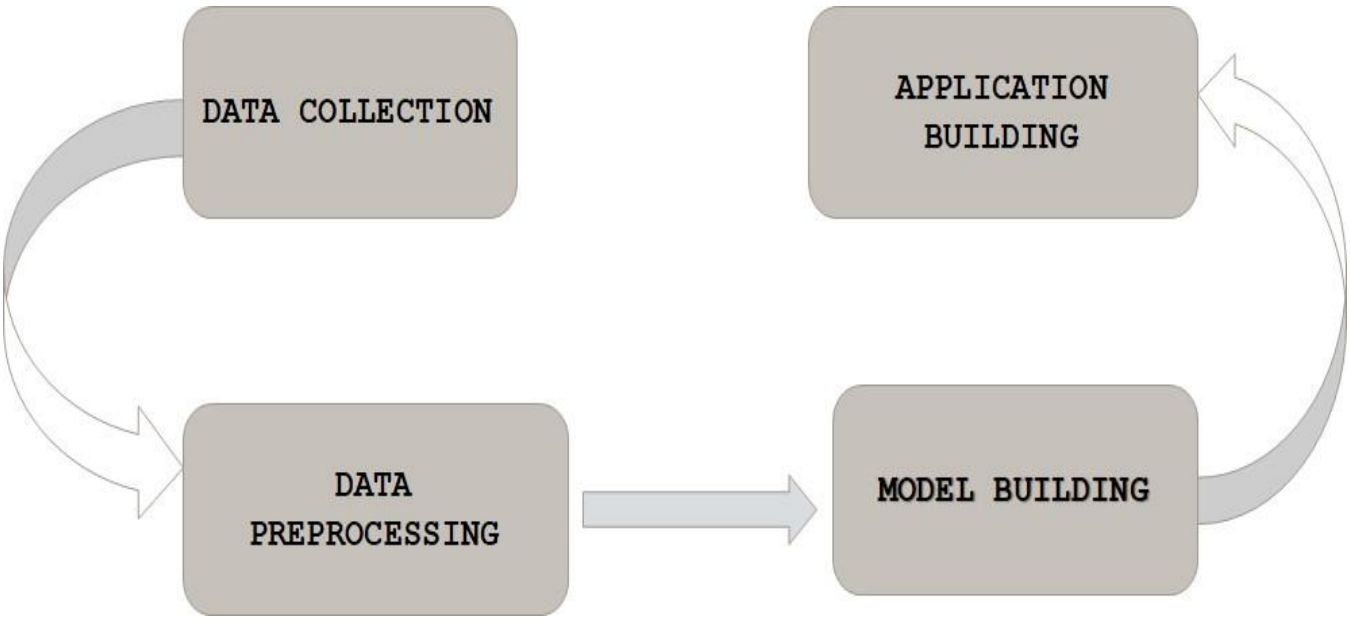
4. EXPERIMENTAL INVESTIGATIONS

User interacts with the UI (User Interface) to upload the input features.

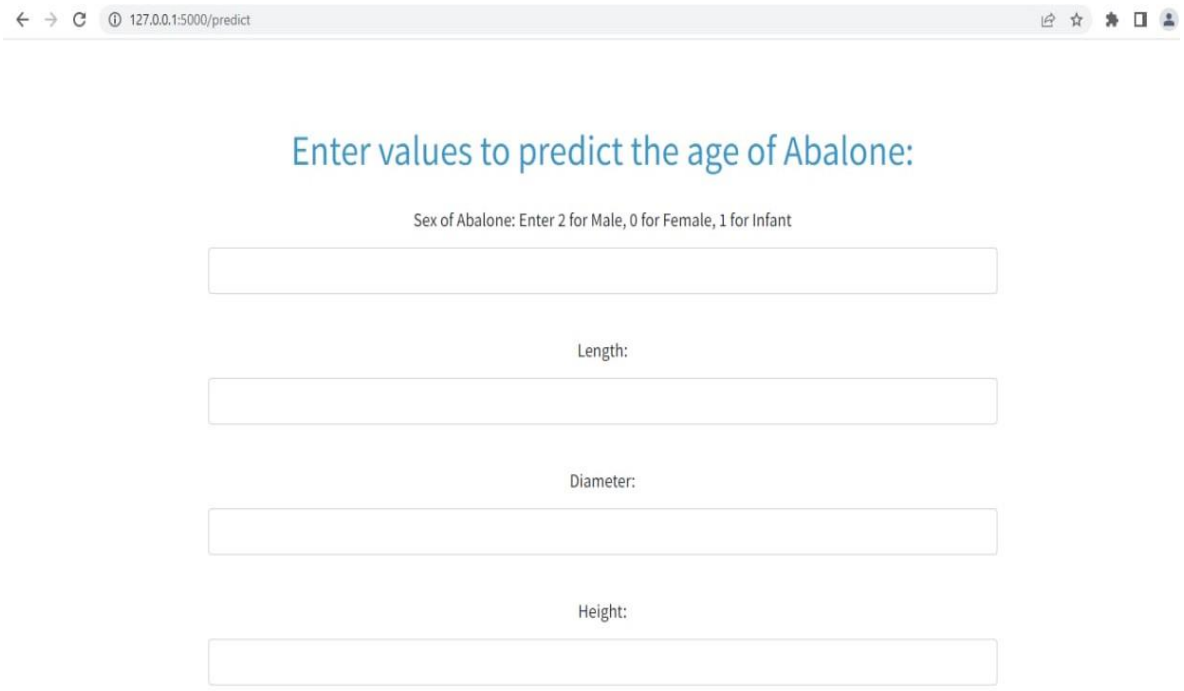
Uploaded features/input is analyzed by the model which is integrated.

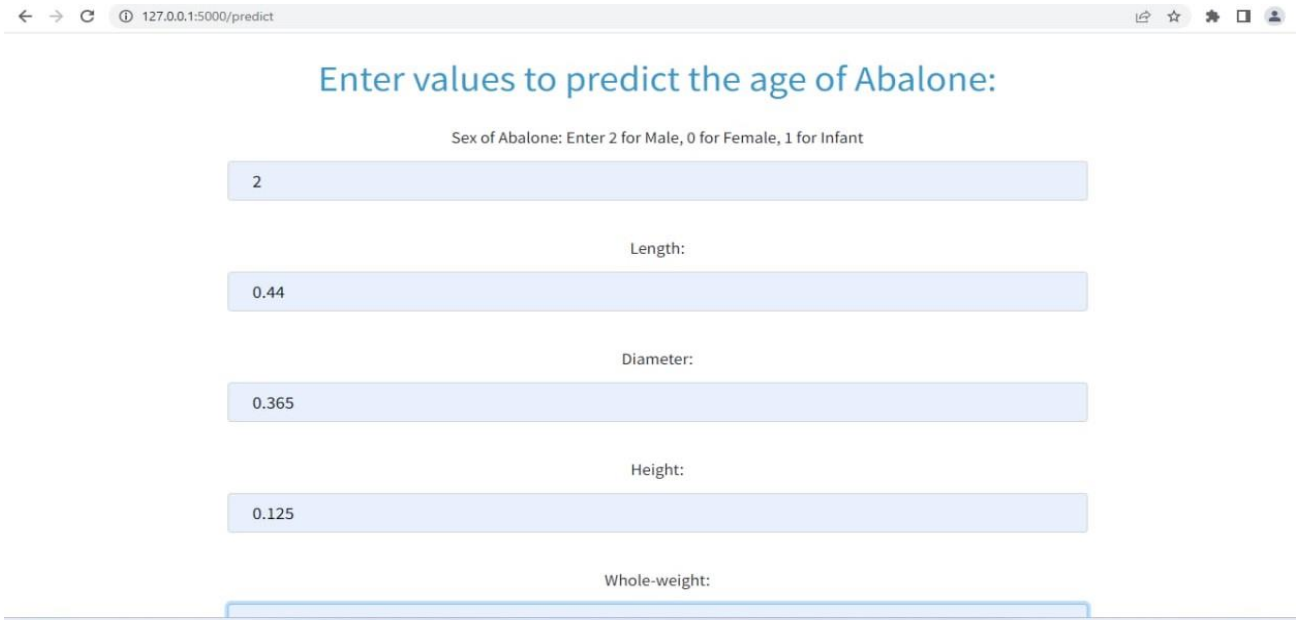
Once a model analyses the uploaded inputs, the prediction is showcased on the UI.

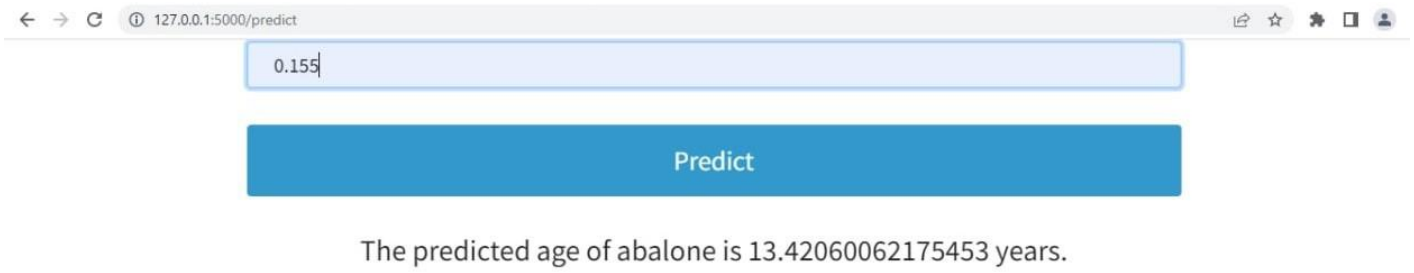
5. FLOWCHART



6. RESULT


127.0.0.1:5000/predict
Enter values to predict the age of Abalone:
Sex of Abalone: Enter 2 for Male, 0 for Female, 1 for Infant
Length:
Diameter:
Height:


127.0.0.1:5000/predict
Enter values to predict the age of Abalone:
Sex of Abalone: Enter 2 for Male, 0 for Female, 1 for Infant
2
Length:
0.44
Diameter:
0.365
Height:
0.125
Whole-weight:



7. ADVANTAGES

It is salient to predict abalone age as it helps farmers and sellers to determine the market price of abalones. The economic value of abalone is positively correlated with their respective ages.

8. APPLICATIONS

This project is to detect the age of abalone accurately

9. CONCLUSION

In this project, we have established the application to predict the age of abalone. Uploaded features/input is analyzed by the model which is integrated. Once a model analyses the uploaded inputs, the prediction is showcased on the UI.

10. FUTURE SCOPE

The project can be further enhanced by deploying the deep learning model obtained using a web application and larger dataset cloud be used for prediction to give higher accuracy and produce better result.

11.BIBLIOGRAPHY

- https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwic2YOW5uL6AhVsTmwGHTIKAbgQFnoECAsQAQ&url=https%3A%2F%2Fwww.researchgate.net%2Fpublication%2F3346276_Machine_Learning_Project_-_Predict_the_Age_of_Abalone&usg=AOvVaw3-uIrfDiSrGOXtgrt5ZZR_
- https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwic2YOW5uL6AhVsTmwGHTIKAbgQFnoECAoQAQ&url=https%3A%2F%2Fwww.researchgate.net%2Fpublication%2F359927109_Abalone_Age_Prediction_Using_Machine_Learning&usg=AOvVaw3NuUdbmL8R6Ebk04XIzYCL