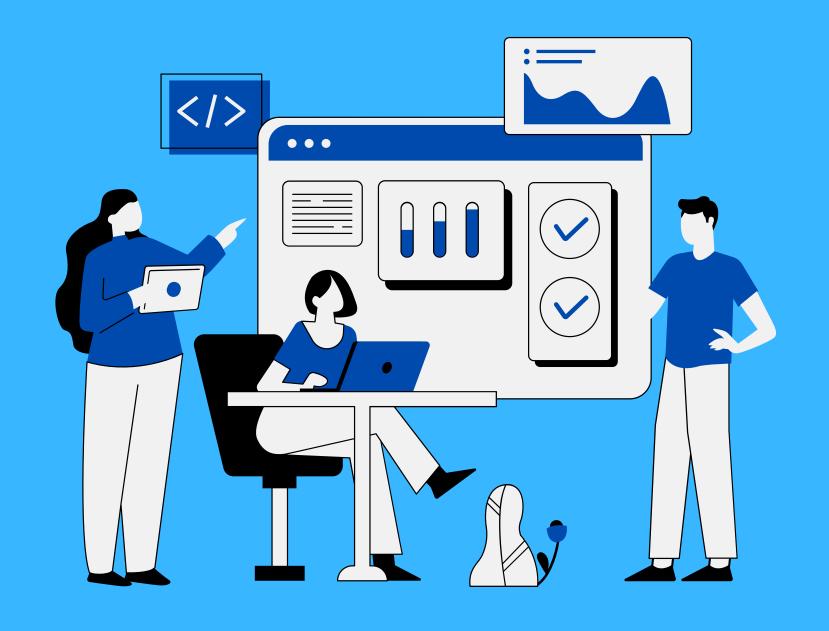
## Hotel Room Price Predictor for the Ministry Of Tourism

Prepared by
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The Fatma

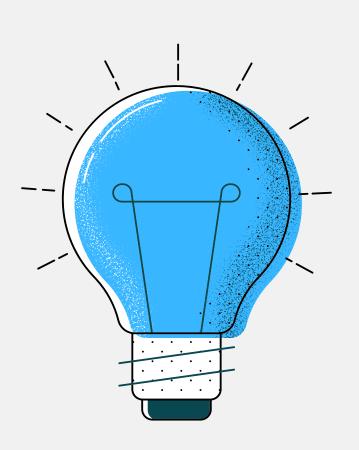


# Story Time





## Motivation!



The Ministry of Tourism needs to understand the fluctuation in hotel room prices on and off the tourist season in the kingdom

### Why?

To regulate prices and make it competitive with the top countries attracting tourists around the world

### Data

Using Booking.com the following features were scraped resulting in having 1075 observations:



2. Location

3. Room Type

4. Price

5. Price for

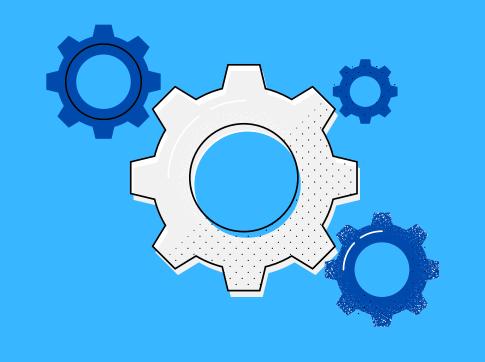


7. Hotel Rating

8. Rating Title

9. Number of Reviews

10. Room Size

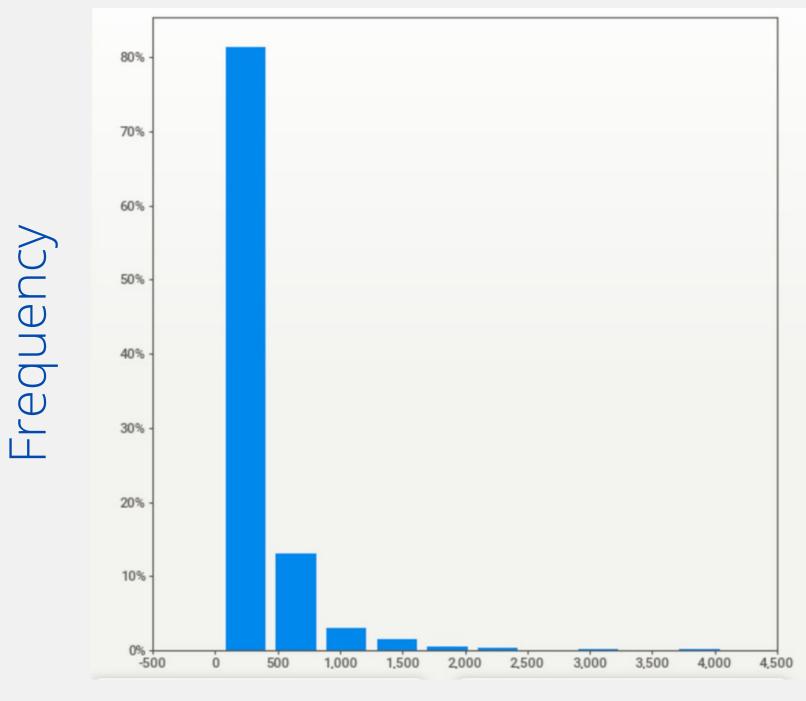


### Relationships between features

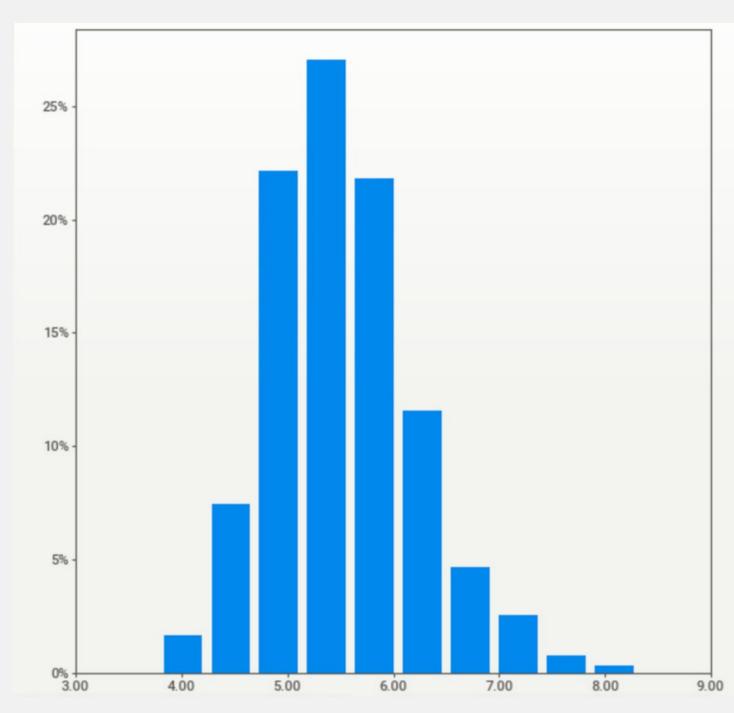


## Normalizing the Price Feature

-requency



Price in Riyals



Log Price in Riyals

## Methodology



#### **Explore Data**

Visualize data and apply descriptive statistics.

#### **Clean Data**

Handle nulls, zero and duplicate values.

### Preprocess Data

Feature
engineering by
applying
transformations,
scaling and
partitioning data
to train, validate
and test.

### **Build Models** and test

fit several regression modeling algorithms with different combos of independent features, validate and test all models to get the best fit.

### **Develop The Product**

develop a user interface to predict the price given relevant input.

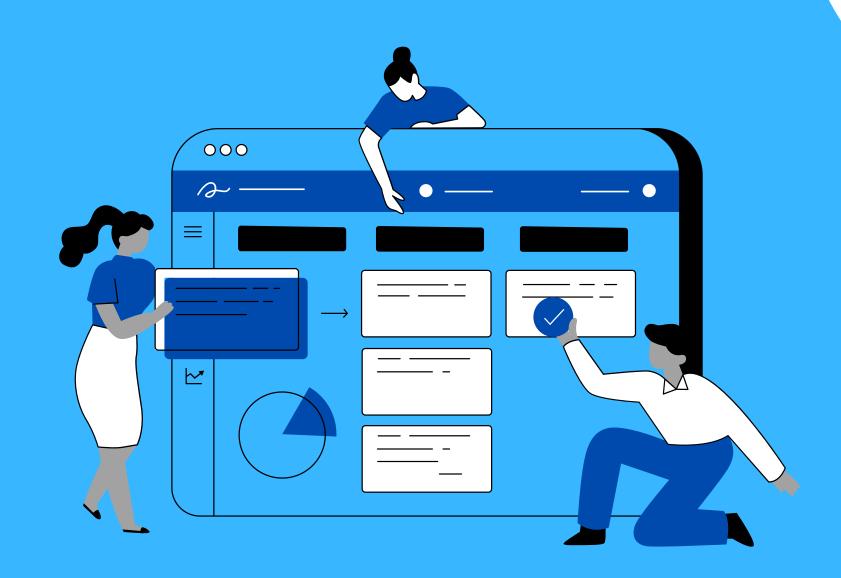
# Results of Models

Linear

91.61% Accurate

**Polynomial** 

93.40% Accurate



**Gradient Booster** 

92.75% Accurate

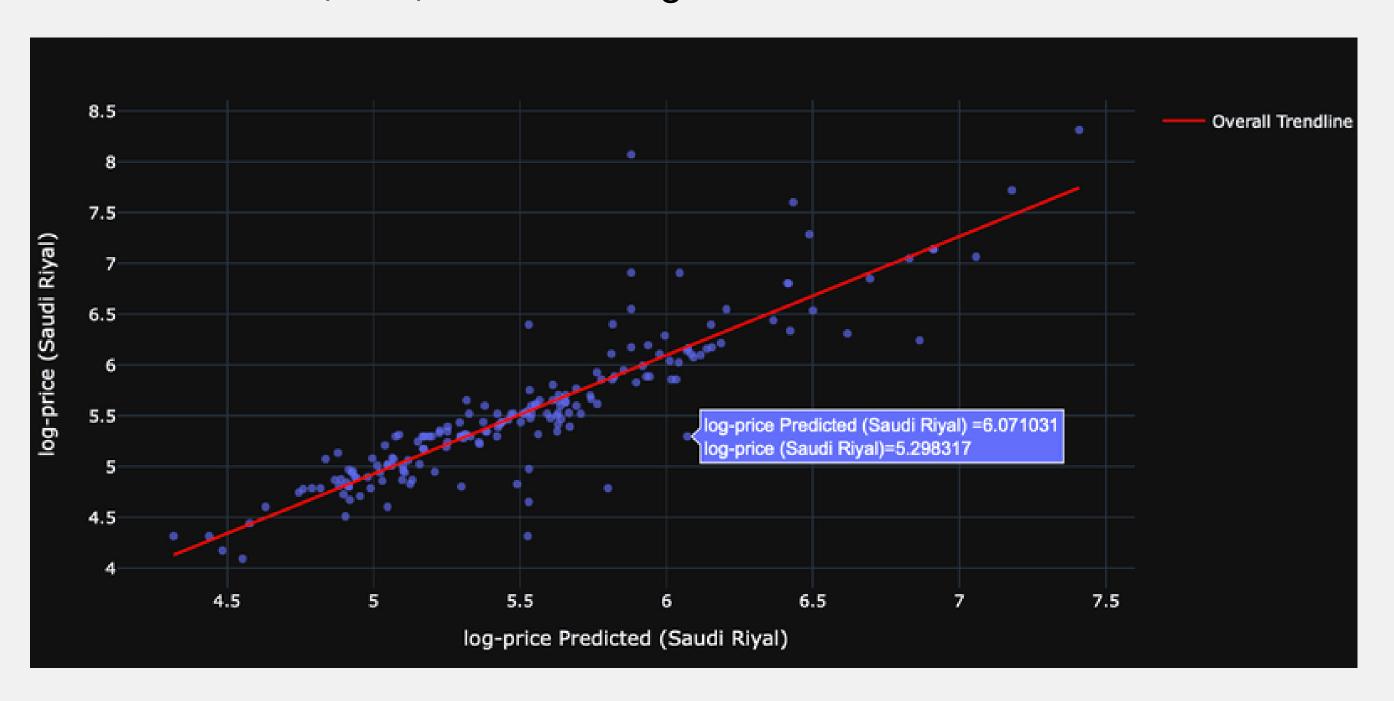
Random Forest

96% Accurate

### **Best Model**

#### **Random Forest Regressor:**

- Evaluate our model performance.
- Achieving 96% accuracy
- The mean absolute error (MAE) is 0.1974 degrees.

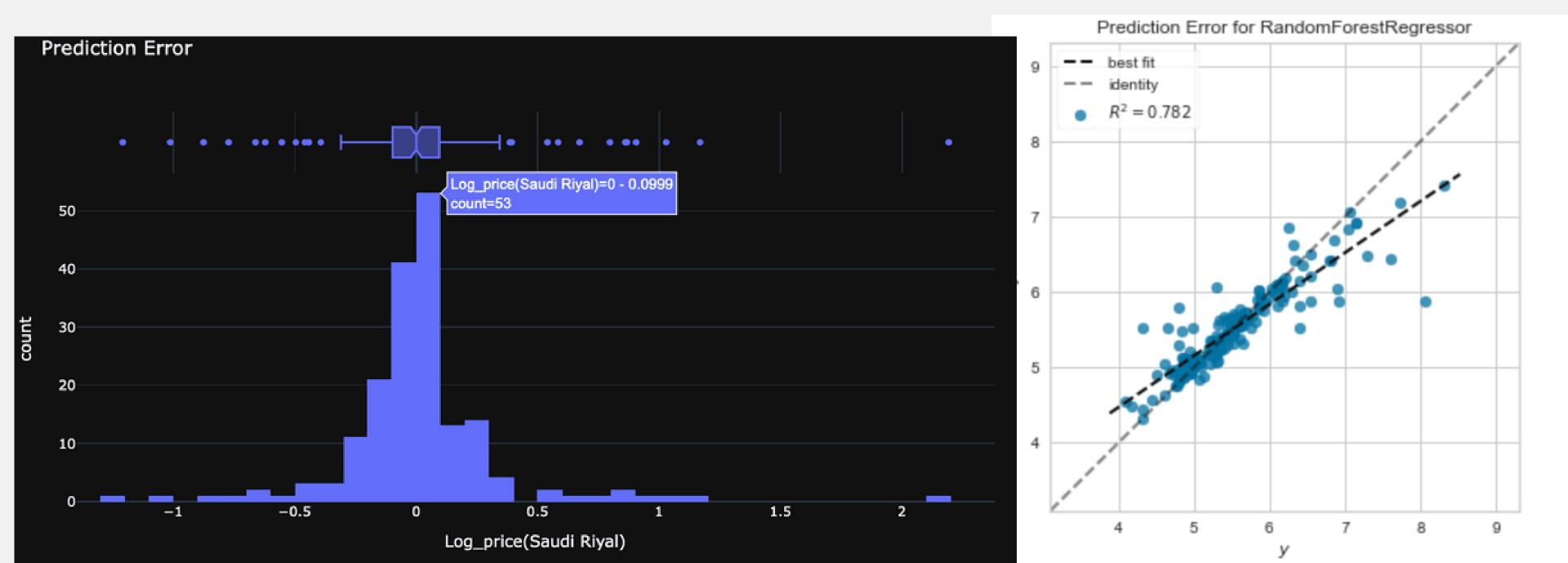




### **Best Model**

### **Random Forest Regressor Residuals:**

- Prediction of errors.
- Explore the residuals to make sure everything was fine with our data.
- RF should have gotten a very good model with a good fit.



### Welcome To T5 🌟

### **Dynamic Price Prediction**

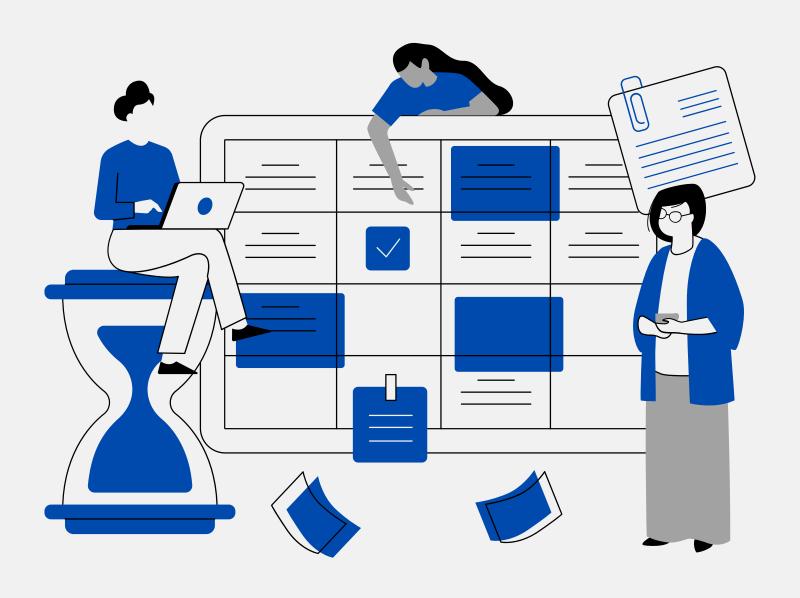
This app predicts the Booking.com Prices!

### Predicted Price (Saudi Riyal)

0 0 481.4000

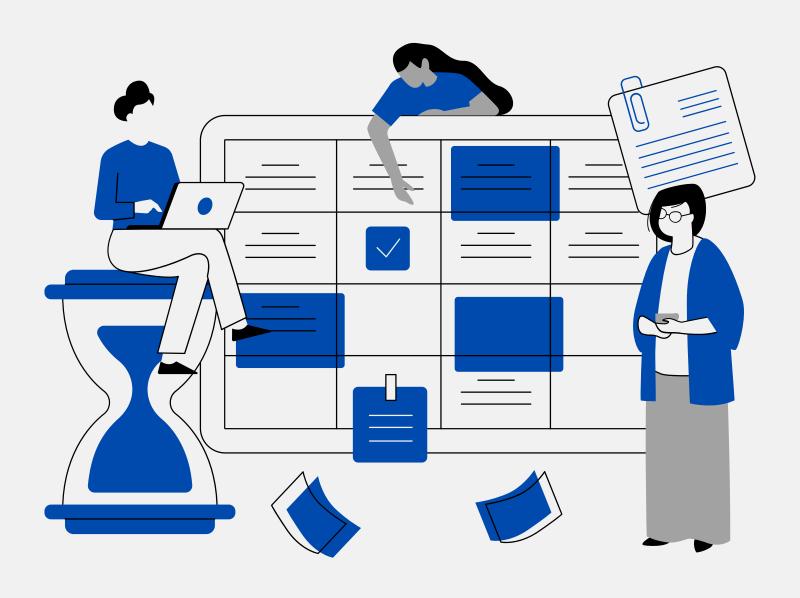
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### Conclusion



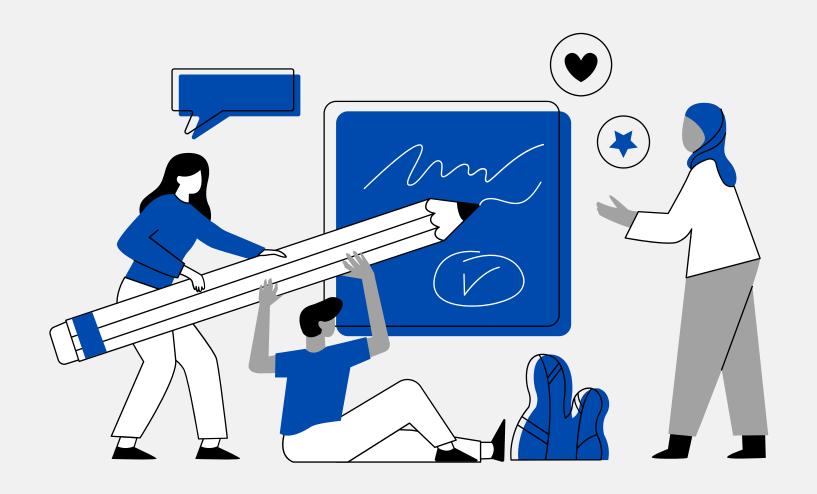
- Model building is iterative over time, to increase the accuracy its a must
- The ministry should handle false information about the rooms on online travel agencies platforms

### Future Work



- Increase the accuracy of the model by adding more relevant variables
- Develop a better user experience
- Factor in seasonality
- Adding more data from other online travel agencies platforms

# Thank You For Listening.



# Do you have any questions?