

Bank Direct Marketing Using Data Mining Classification

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Introduction

- Selected bank's dataset - new data can be added from user
- Performed predictive analysis using classification on the dataset
- Built decision tree using R and Rattle
- Developed application to demonstrate the decision tree model

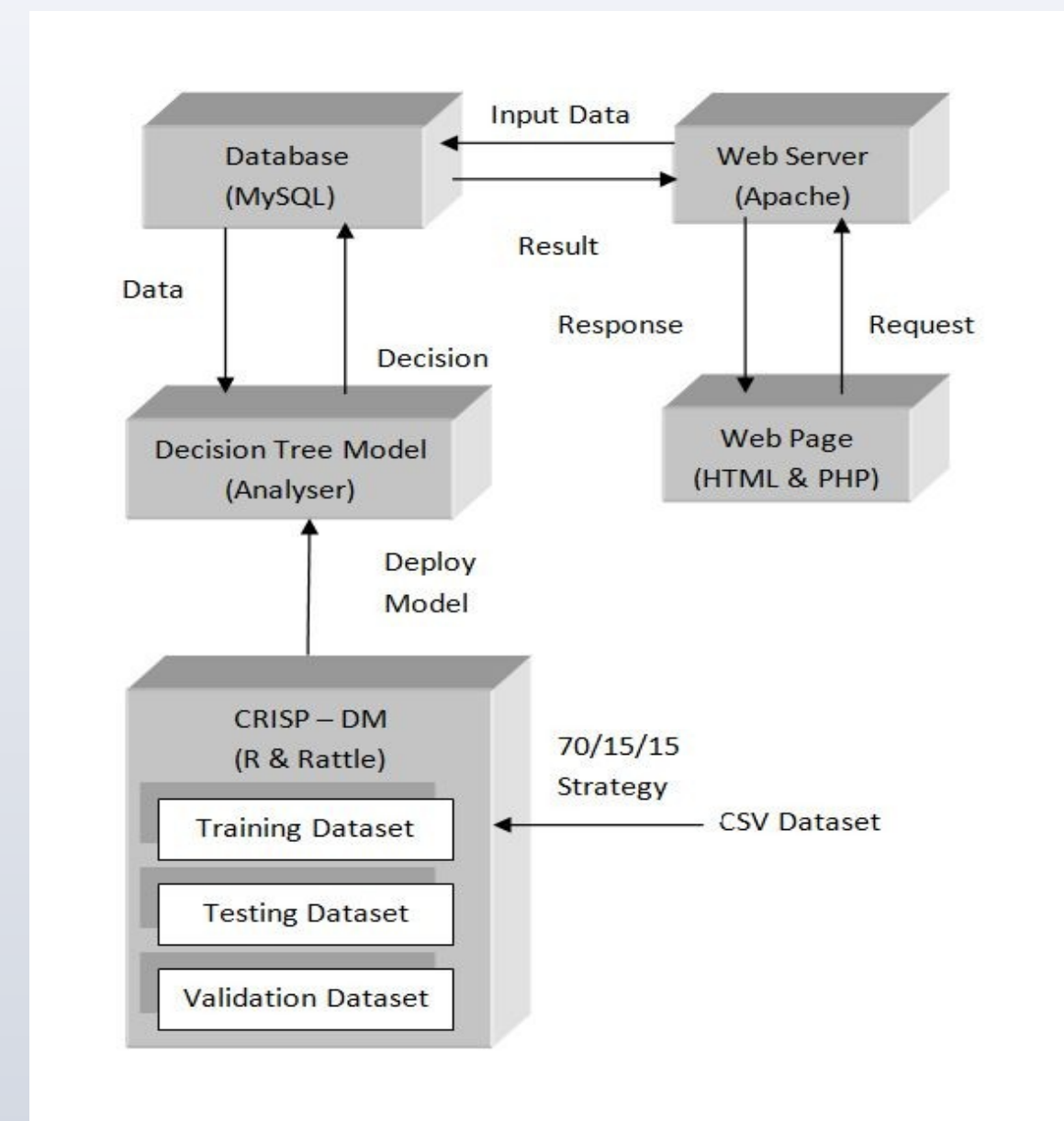
Architecture

- Used CRISP methodology for determining classification
- 70/15/15 strategy used to build decision tree
- Implemented Web based architecture

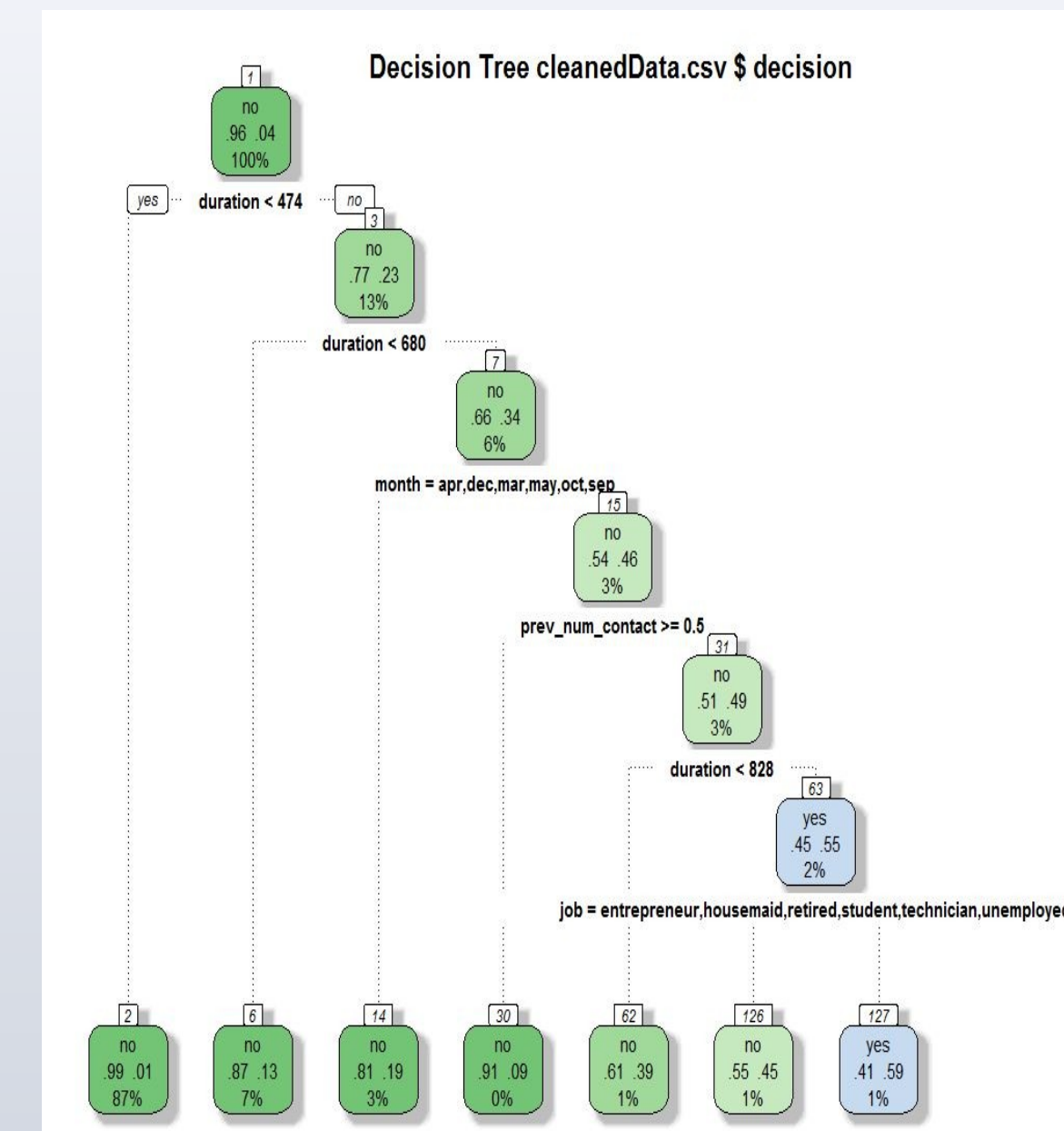
Implementation

- Phase 1 - implemented Initial CRISP steps - Data analysis and data cleaning, Created Database schema
- Phase 2 - Created decision tree model, designed front end using PHP, CSS and HTML
- Phase 3 - Integration of Apache web server, MySql and PHP using WAMP
- Testing : Correctness of decision for new data, Regression testing, validation testing

Architecture and Flow



Decision Tree using rPart()



Front End – PHP, HTML and CSS Output Decisions for user input

CUSTOMER INFORMATION

* required field.

Personal Information

age *

job *

marital status *

education *

Contact Method * ☒ Telephone ☐ Cellular

Bank Information

has credit in default ? ☒ Yes ☐ No *

has house loan ? ☒ Yes ☐ No *

has other loan ? ☒ Yes ☐ No *

Campaign Information

Month *

Day *

Last contact Duration *

Number of contacts done in campaign *

Number of days passed after last contacted *

Number of contacts done before this campaign *

Previous Marketing Outcome *

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The page at localhost says:

decision for this customer is : yes

The page at localhost says:

decision for this customer is : no

Lessons Learned

- Used SQL queries for data correction as R and Rattle are complicated to use
- Removed unknown attributes which were not affecting the decision to maintain BCNF form
- Learned R and Rattle as it is the finest tool for data analysis

Future Scope

- Use new attributes to make the prediction more accurate
- Evaluation of target customers by companies which sell products and services
- Mobile phone compatibility
- Integration of the proposed application with any existing web application

Conclusion

- Successfully deployed decision tree to predict customer decision
- Accuracy of decision tree depends upon size of dataset
- Data mining classification is the best way for direct marketing