

Project Collection

All of the source codes can be provide for all projects

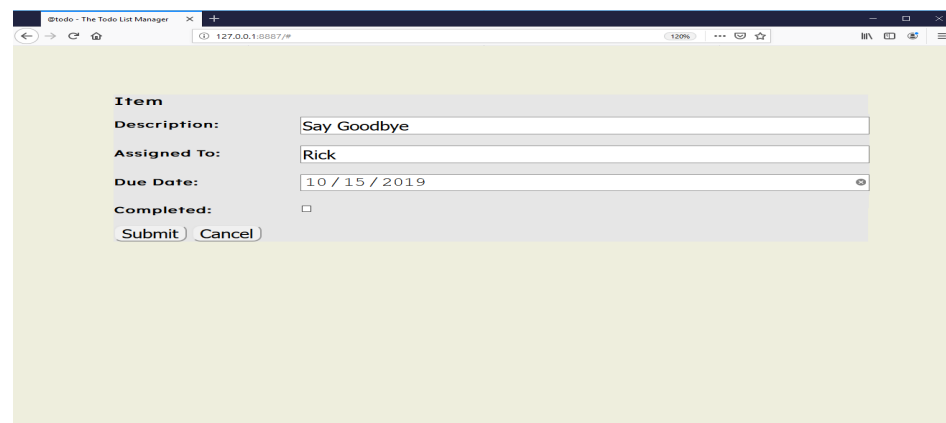
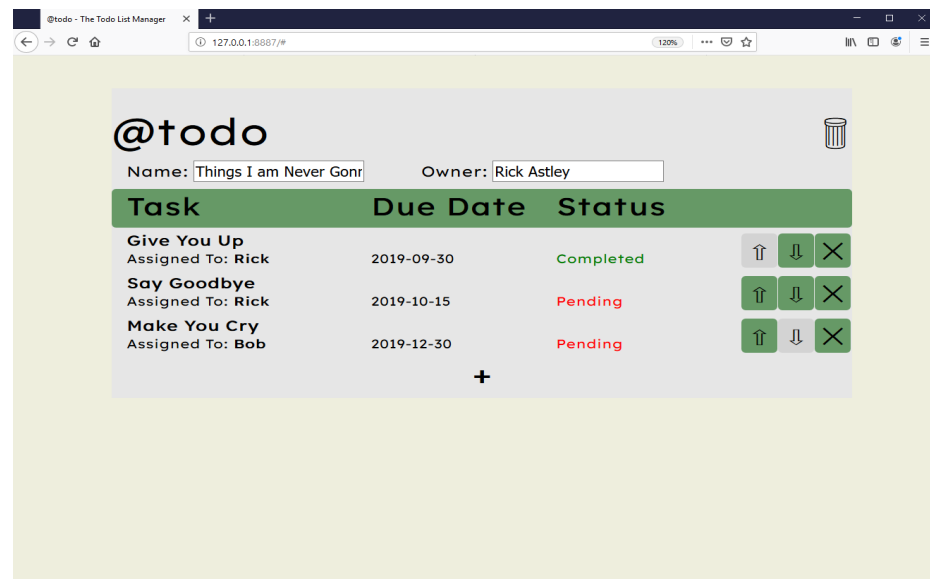
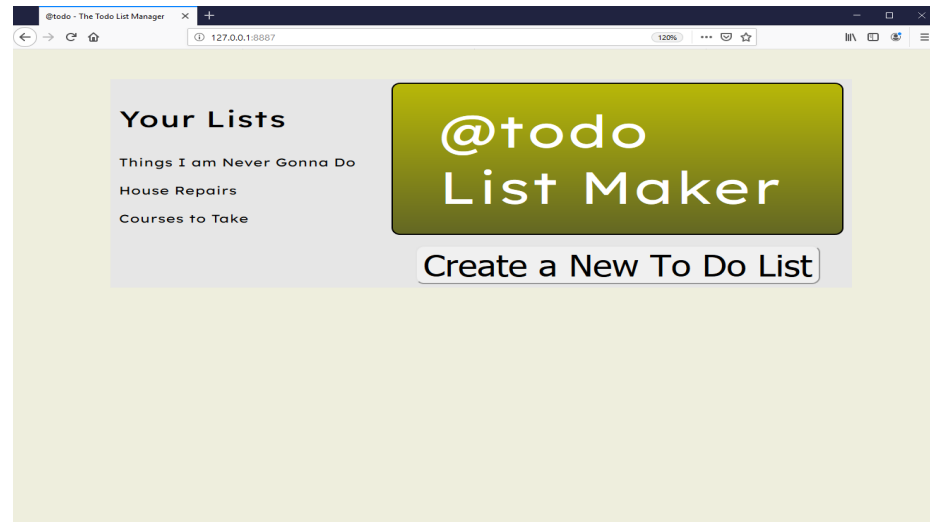
张子雍

网页应用 List Maker (Source code and detail explanation can be provided) :

设计 UI 和数据库连接，提供用户创建，登陆账号，建立私人任务列表与编辑功能。

功能：1.账号注册与登录 2.添加与删除列表 3.编辑列表名称与持有者 4.编辑任务细节
5.移动与删除任务 6.任务特定排序 7.及时保存 8.Fool Proof Design

设计语言：React Redux & Firebase



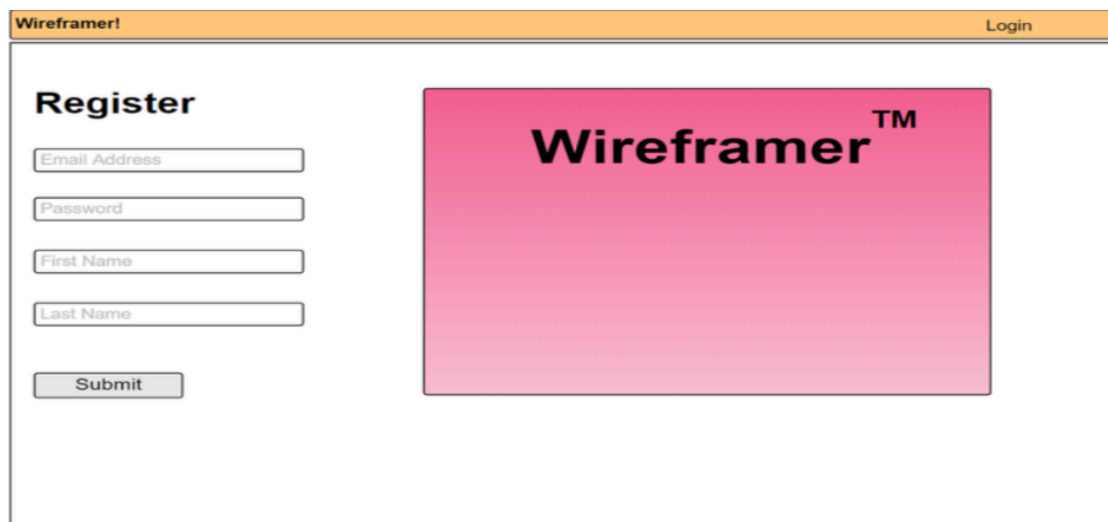
Project

网页应用 WireFramer (Source code and detail explanation can be provided) :

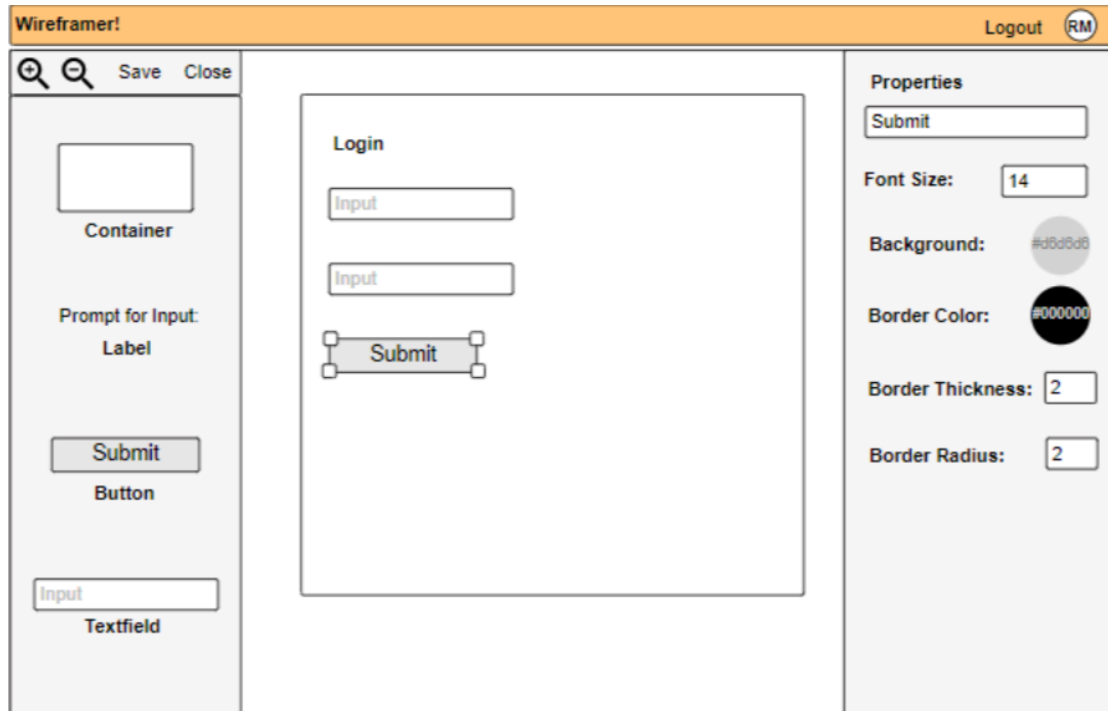
设计 UI 和数据库连接，提供用户创建，登陆账号，用户主页 UI 设计服务。

功能：1.账号注册与登录 2.添加与删除主页设计 3.添加与删除 UI 图标 4.移动图标位置 5.图标缩放 6.图标文本编辑 7.图标字号大小编辑 8.图标颜色编辑 9.图标字体粗细编辑 10.图标背景颜色编辑 11.选择性保存设计 13.管理员登陆选项 13.Fool Proof Design

设计语言：React Redux & Firebase



The image shows a web application window titled "Wireframer!". In the top right corner, there is a "Login" link. The main content area is divided into two sections. On the left, under the heading "Register", there is a form with four input fields: "Email Address", "Password", "First Name", and "Last Name". Below these fields is a "Submit" button. On the right, there is a large pink rectangular box containing the text "Wireframer™" in a bold, black, sans-serif font.

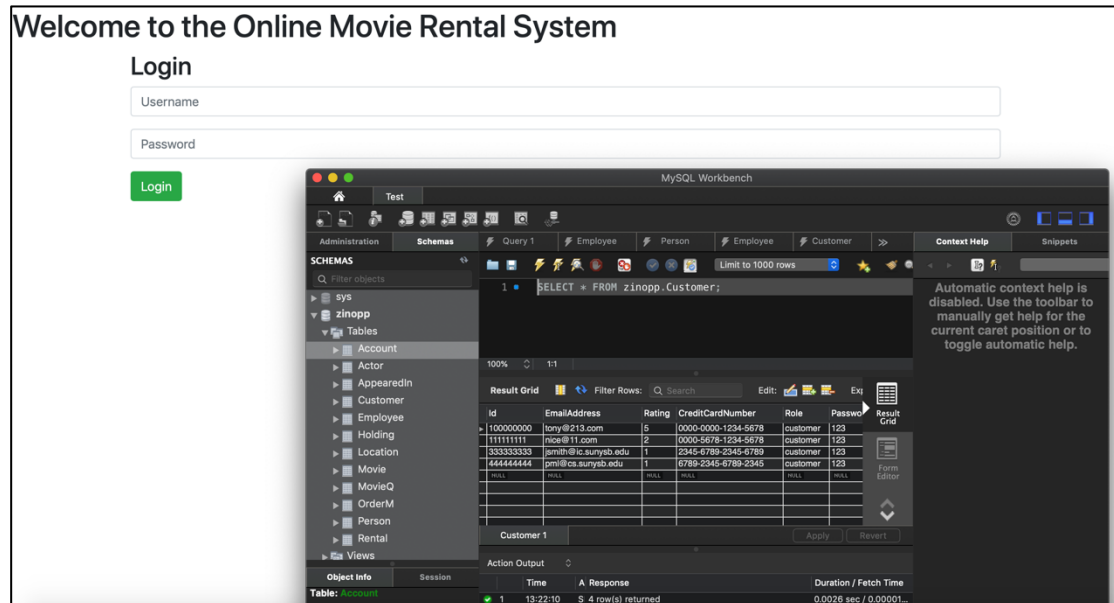


The image shows a web application window titled "Wireframer!". In the top right corner, there is a "Logout" link and a circular icon with the letters "RM". The main content area is divided into three sections. On the left, there is a sidebar with a search icon, a "Save" button, and a "Close" button. Below these are four design tool options: "Container" (represented by a rectangle), "Prompt for Input: Label" (represented by a text input field), "Submit Button" (represented by a button), and "Textfield" (represented by a text input field). In the center, there is a "Login" form with two input fields labeled "Input" and a "Submit" button. On the right, there is a "Properties" panel with a "Submit" button and several settings: "Font Size" (set to 14), "Background" (set to #d8d8d8), "Border Color" (set to #000000), "Border Thickness" (set to 2), and "Border Radius" (set to 2).

网页应用 Online Movie Rental System (Source code and detail explanation can be provided) :

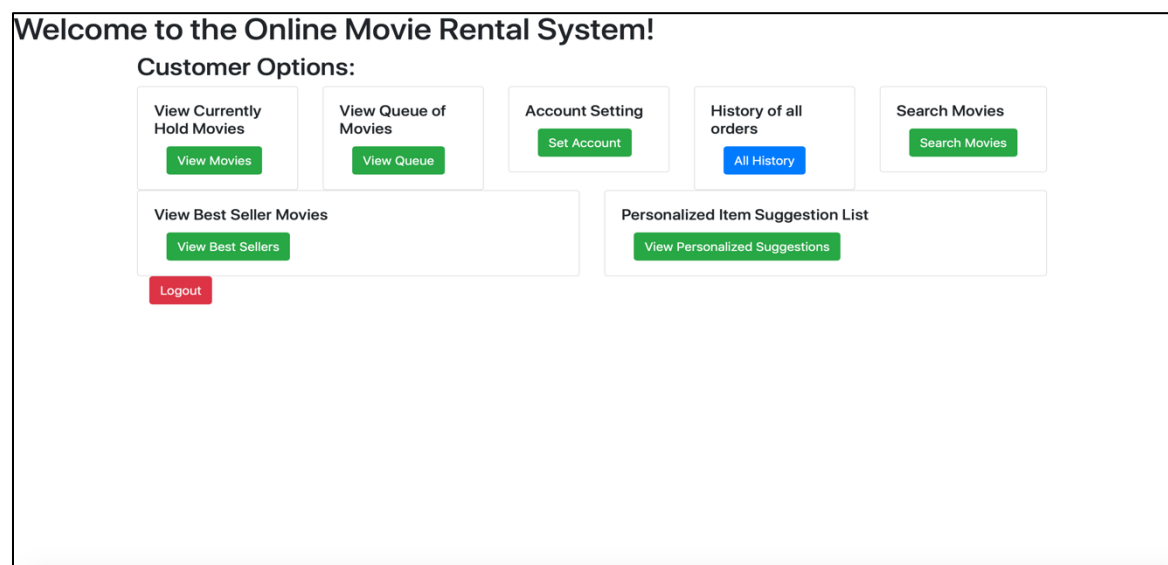
这是一款基于 relational-database 的在线电影租赁系统，它提供类似于 Netflix 和 Amazon Video 相似的电影租赁服务并提供实时后台数据库更新，系统功能也由三种账户类型划分并提供相应操作主页。

设计语言：HTML & JAVA & JDBC & MySQL



- **用户：**

用户享有功能 1.查看当前持有电影 2.电影愿望清单 3.会员类型设置 4.历史订单查询 5.特定电影类型查找 6.电影关键词查找 7.演员关键词查找 8.电影排行查看 9.个人电影推荐 10.电影评分



会员类型更改 (功能页面展示):

Set Account

Account Options:

Select Account Type:

Unlimited-2

Set

Home

- 经理 :

经理拥有功能 1.管理员工【添加/查看/编辑/删除员工】2. 管理电影【添加/查看/编辑/删除电影】3.销售报告 4.查找电影 5. 电影租赁搜索 6.收入查找 7.电影排行

Welcome to the Online Movie Rental System!

Manager Options:

Manage Employee

Add Employee

View / Edit / Delete Employee

Manage Movie

Add Employee

View / Edit / Delete Movie

Sales Report

Sales Report

View Movies

View Movies

Search Movies Rental

Search Rentals

View Highest Revenue Generators

Customer Representative

Customer

View Bestseller Movies

View Bestsellers

Logout

员工列表 (功能页面展示):

The Employee Details are:

Employee ID	First Name	Last Name	Address	City	State	Zip Code	Telephone	Email	Start Date	Hourly Rate			
123456789	David	Smith	123 College road	234	2143	11790	516-215-2345	david@gmail.com	2005-11-01	60.0	00:00:00	Edit	Delete
789123456	David	Warren	456 Sunken Street	Stony Brook	NY	11794	631-632-9987	1235@gmail.com	2006-02-02	50.0	00:00:00	Edit	Delete
888888888	Zhi	Du	1044 Austin Dr	234	2143	11790	531-237-0987	LOVE@pornhub.com	1000-11-01	100.0	00:00:00	Edit	Delete

Home

● 客服 :

客服拥有功能 1.记录订单 2.管理用户【添加/查看/编辑/删除用户】 3.查看用户地址 4.查看用户电影推荐

Welcome to the Online Movie Rental System!

Customer Representative Options:

Record a Order

Record Order

Manage Customer

Add Customer

View / Edit / Delete Customer

View Customer Mailing List

Customer Mailing List

View Suggestions for Customers

View Suggestions

Logout

记录订单 (功能页面展示):

The Open Orders are:

Order ID	Date Time	Return Date	
1	2009-11-11 10:00:00	2009-11-14 00:00:00	Record the Order
2	2009-11-11 18:15:00		Record the Order
3	2009-11-12 09:30:00		Record the Order
4	2009-11-21 22:22:00		Record the Order
5	2009-11-21 22:22:00		Record the Order

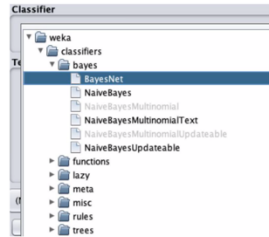
Home



6. EX.1 REPTree Summary

Classifier 3: BayesNet (Non-Descriptive)

We can find it from following path:



We can get the tree view:



7.EX.1 BayesNet Tree View

Summary:

[illegible]

8. EX.1 BayesNet Summary

Page 6 of 21

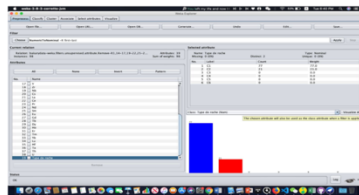
Result

Result:
We compare the correctness of these three classifiers:
REPTree(93.879%) > J-48(81.632%) > BayesNet (67.347%)

It is clear to see that REPTree has the most correct result and we also see that the descriptive classifier is better than Non-descriptive.

Experiment 2

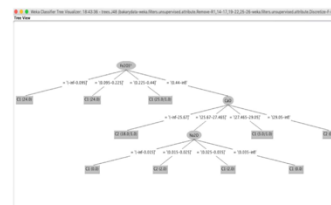
use all records to perform the contrast classification (contrast learning), i.e. contrasting class C1 with a class notC1 that contains other classes.



9. New Window For EX.2

We separate the records into 77 C1 and 21 C2

Classifier 1: J-48 (Descriptive)



10. EX.2 J-48 Tree View

We get 10 ruels:

```
==== Classifier model (full training set) ====
```

348 pruned tree

```
Fe203= ['-inf-0.095']: C1 (24.0)
Fe203= ['(0.095-0.225)]: C1 (24.0)
Fe203= ['(0.225-0.44)]: C1 (25.0/1.0)
Fe203= ['(0.44-inf)]: C1 (0.0)

CaO = ['-inf-25.67]: C2 (18.0/1.0)
CaO = ['(25.67-27.465)]: C2 (0.0)

Na2O = ['-inf-0.015]: C1 (0.0)
Na2O = ['(0.015-0.025)]: C2 (2.0)
Na2O = ['(0.025-0.035)]: C1 (2.0)
Na2O = ['(0.035-inf)]: C1 (0.0)

CaO = ['(27.465-29.05)]: C1 (3.0/1.0)
CaO = ['(29.05-inf)]: C2 (0.0)
```

Number of Leaves : 1

11. EX.2 J-48 Rules

Summary:

```

=== Summary ===
Correctly Classified Instances      95      96.9388 %
Incorrectly Classified Instances    3       3.0612 %
Kappa statistic                    0.9075
Mean absolute error                 0.0175
Root mean squared error             0.0935
Relative absolute error             14.3687 %
Root relative squared error         39.3781 %
Total Number of Instances          98

```

12. EX.2 J-48 Summary

We get 17 rules:

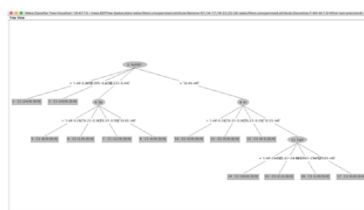
REPTree

```
Fe203m = '(-inf,-0.095]': C1 (24/0) [0/0]
Fe203m = '(0.095,-0.225]': C1 (24/0) [0/0]
Fe203m = '(0.225,-0.44]':
|
| Dy = '(-inf,-0.25]': C1 (8/0) [0/0]
| Dy = '(0.25,-0.35]': C2 (1/0) [0/0]
| Dy = '(0.35,-0.95]': C1 (12/0) [0/0]
| Dy = '(0.95,-inf)': C1 (4/0) [0/0]
Fe203m = '(0.44,-inf)':
|
| Er = '(-15,-25]': C2 (3/0) [0/0]
| Er = '(0.15,-25]': C2 (5/0) [0/0]
| Er = '(25,-55]': C1 (4/1) [0/0]
| Er = '(0.55,-inf)':
|
| CaO = '(-inf,-25.67]': C2 (10/0) [0/0]
| CaO = '(25.67,-27.465]': C1 (2/1) [0/0]
| CaO = '(27.465,-29.275]': C1 (1/0) [0/0]
| CaO = '(-29.05,-inf)': C2 (0/0) [0/0]
```

Size of the tree : 17

14. EX.2 REPTree Rules

Classifier 2: REPTree (Descriptive)



13. EX.2 REPTree Tree View

Summary:

Summary

Correctly Classified Instances	96	97.9592 %
Incorrectly Classified Instances	2	2.0408 %
Kappa statistic	0.9372	
Mean absolute error	0.0085	
Root mean squared error	0.0652	
Relative absolute error	6.9817 %	
Root relative squared error	27.4568 %	
Total Number of Instances	98	

15. EX.2 REPTree Summary

Classifier 3: BayesNet (Non-Descriptive)



16. EX.2 BayesNet Same Tree as EX.1

Summary:

==== Summary =====

Correctly Classified Instances	81	82.6531 %
Incorrectly Classified Instances	17	17.3469 %
Kappa statistic	0.7185	
Mean absolute error	0.0621	
Root mean squared error	0.2337	
Relative absolute error	58.9854 %	
Root relative squared error	98.4897 %	
Total Number of Instances	98	

17. EX2. BayesNet Summary

Result:

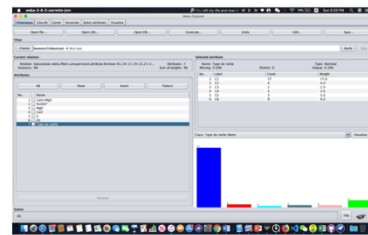
After separating records into C1 and C2, we compare them
 REPTree(97.9592%) > J-48(96.9388%) > BayesNet (82.6531%)

It is clear to see that REPTree is still higher than other classifiers. We conclude that REPTree is best for our experiment 2.

Experiment 3

repeat Experiments 1, 2 for all records with the most important attributes as defined by the expert into: S, Zn, CaO+MgO, CaO, MgO, Fe2O3.

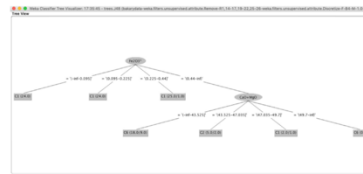
Then, we have 6 classes in our UI:



18. EX.3 View

Classifier 1: J-48(Descriptive)

We retrieve Tree from WEKA:



19. EX.3 J-48 Tree View

We generate 7 rules:

==== Classifier model (full training set) =====

J48 pruned tree

```

Fe2O3* = '(-inf-0.895)': C1 (24/8)
Fe2O3* = '(0.895-0.225)': C1 (24/8)
Fe2O3* = '(0.225-0.441)': C1 (25/8/1/0)
Fe2O3* = '(0.441-inf)':
| CaO*MgO = '(-inf-43.525)': C6 (18/8/9/8)
| CaO*MgO = '(43.525-47.835)': C2 (5/8/2/0)
| CaO*MgO = '(47.835-49.71)': C1 (2/8/1/0)
| CaO*MgO = '(49.71-inf)': C6 (8/8)
  
```

Number of Leaves : 7

Size of the tree : 9

20. EX.3 J-48 Rules

Summary:

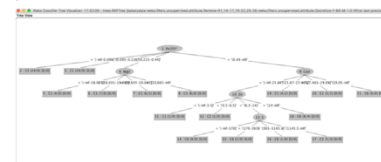
==== Summary =====

Correctly Classified Instances	85	86.7347 %
Incorrectly Classified Instances	13	13.2653 %
Kappa statistic	0.9207	
Mean absolute error	0.0608	
Root mean squared error	0.1744	
Relative absolute error	45.948 %	
Root relative squared error	78.0422 %	
Total Number of Instances	98	

21. EX.3 J48 Summary

Classifier 2: REPTree (Descriptive)

We get REPTree tree view from WEKA:



22. EX.3 REPTree Tree view

We generate 16 rules:

REPTree

=====

```

Fe2O3* = '(-inf-0.895)': C1 (24/8) [0/0]
Fe2O3* = '(0.895-0.225)': C1 (24/8) [0/0]
Fe2O3* = '(0.225-0.441)':
| MgO = '(-inf-18.035)': C1 (4/8) [0/0]
| MgO = '(18.035-19.645)': C1 (17/8) [0/0]
| MgO = '(19.645-20.665)': C1 (6/1) [0/0]
| MgO = '(20.665-inf)': C1 (8/8) [0/0]
Fe2O3* = '(0.441-inf)':
| CaO = '(-inf-25.67)':
| | Zn = '(-inf-3.5)': C1 (1/8) [0/0]
| | Zn = '(3.5-6.31)': C2 (1/8) [0/0]
| | Zn = '(6.31-24)':
| | | S = '(-inf-170)': C6 (8/8) [0/0]
| | | S = '(170-365)': C6 (2/8) [0/0]
| | | S = '(365-1145.5)': C6 (1/8) [0/0]
| | | S = '(1145.5-inf)': C3 (5/3) [0/0]
| | | Zn = '(24-inf)': C6 (8/4) [0/0]
| | CaO = '(25.67-27.465)': C1 (14/2) [0/0]
| | CaO = '(27.465-29.85)': C1 (3/1) [0/0]
| | CaO = '(29.85-inf)': C6 (8/8) [0/0]
  
```

Size of the tree : 21

23. EX.3 REPTree Rules

Summary:

==== Summary =====

Correctly Classified Instances	87	88.7755 %
Incorrectly Classified Instances	11	11.2245 %
Kappa statistic	0.9087	
Mean absolute error	0.0649	
Root mean squared error	0.1498	
Relative absolute error	33.9298 %	
Root relative squared error	68.189 %	
Total Number of Instances	98	

24. EX.3 REPTree Summary

Summary:

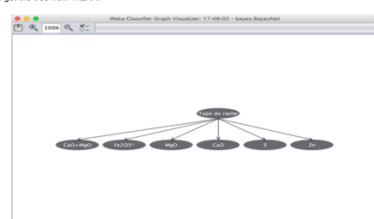
==== Summary =====

Correctly Classified Instances	84	85.7143 %
Incorrectly Classified Instances	14	14.2857 %
Kappa statistic	0.6449	
Mean absolute error	0.0624	
Root mean squared error	0.1945	
Relative absolute error	47.1377 %	
Root relative squared error	78.1535 %	
Total Number of Instances	98	

26. EX.3 BayesNet Summary

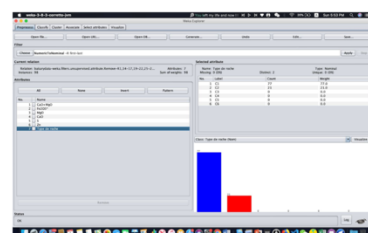
Classifier 3: BayesNet(Non-Descriptive)

We get the tree from WEKA:



25. EX.3 BayesNet Tree View

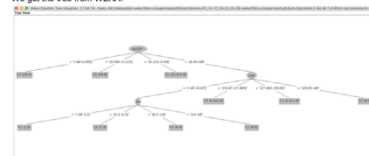
C1 and others combined into C2:



27. EX.3 Combining Others into C2

We get the tree from WEKA

We get the tree from WEKA



28. EX.3 P2 j-48 Tree View

We generate 10 rules

```
== Classifier model (full training set) ==
348 unpruned tree
```

```
Fe203* = '(-inf,-0.095]': C1 (24.0)
Fe203* = '(0.095,-0.225]': C1 (24.0)
Fe203* = '(0.225,-0.441)': C1 (25.0/1.0)
Fe203* = '(0.44,-inf)':
| CaO = '(-inf,-25.67]':
| | Zn = '(-inf,-3.5]': C1 (1.0)
| | Zn = '[3.5,-6.5]': C2 (1.0)
| | Zn = '[6.5,-24]': C2 (8.0)
| | Zn = '[24,-inf)': C2 (8.0)
| CaO = '[25.67,-27.465]': C1 (4.0/2.0)
| CaO = '[27.465,-29.05]': C1 (3.0/1.0)
| CaO = '[29.05,-inf)': C2 (8.0)
```

29. EX.3 P2 j-48 Rules

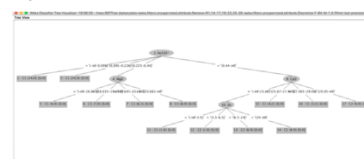
Summary:

Summary

Correctly Classified Instances	94	95.9184 %
Incorrectly Classified Instances	4	4.0816 %
Kappa statistic	0.8698	
Mean absolute error	0.0179	
Root mean squared error	0.0945	
Relative absolute error	14.671 %	
Root relative squared error	39.8013 %	
Total Number of Instances	98	

We get the tree from WEKA

We get the tree from WEKA:



31. EX.3 P2 REPTree Tree View

we generate 13 rules:

```

RePTree
Fe203+ = ['-inf,-0.2951'] : C1 (24/0) [0/0]
Fe203+ = ['-0.095,-0.225'] : C1 (24/0) [0/0]
Fe203+ = ['-0.225,-0.44'] : C1 (24/0) [0/0]
MgO = ['10.33,-19.645'] : C1 (7/0) [0/0]
MgO = ['-19.645,-26.665'] : C1 (6/1) [0/0]
MgO = ['-26.665,-inf'] : C1 (0/0) [0/0]
Fe203+ = ['-44,-inf'] : C1 (0/0) [0/0]
Zn = ['-inf,-25.67'] : C2 (1/0) [0/0]
Zn = ['-25.67,-3.5'] : C1 (1/0) [0/0]
Zn = ['-3.5,-6.5'] : C2 (1/0) [0/0]
Zn = ['-6.5,-16.2'] : C2 (0/0) [0/0]
Zn = ['-16.2,-24'] : C2 (0/0) [0/0]
Zn = ['-24,-inf'] : C2 (0/0) [0/0]
CaO = ['-25.67,-27.465'] : C1 (14/2) [0/0]
CaO = ['-27.465,-29.05'] : C1 (3/1) [0/0]
CaO = ['-29.05,-inf'] : C2 (0/0) [0/0]

Size of the tree is 17

```

32. EX.3 P2 REPTree Rules

Summary:

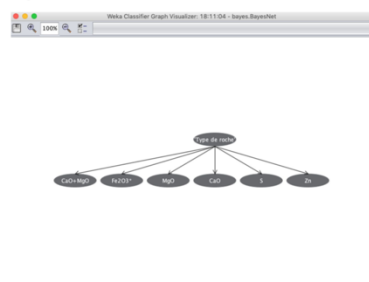
Summary

Correctly Classified Instances	94	95.9184 %
Incorrectly Classified Instances	4	4.0816 %
Kappa statistic	0.8698	
Mean absolute error	0.017	
Root mean squared error	0.0922	
Relative absolute error	13.9635 %	
Root relative squared error	38.8298 %	
Total Number of Instances	98	

33. EX.3 P2 REPTree Summary

We get the tree from WEKA:

We get the tree from WEKA:



34. EX.3 P2 BayesNet Tree View

Summary:

Summary		
Correctly Classified Instances	92	93.8776 %
Incorrectly Classified Instances	6	6.1224 %
Kappa statistic	0.83	
Mean absolute error	0.0284	
Root mean squared error	0.1381	
Relative absolute error	23.3572 %	
Root relative squared error	58.1412 %	
Total Number of Instances	98	

35. EX.3 P2 BayesNet Summary

Result:

Comparing Part 1 and Part 2 in experiment 3:

Classifier 1: Part 1 has accuracy 86.7347%, part 2 has accuracy 95.9184%

Classifier 2: Part 1 has accuracy 87.7755%, part 2 has accuracy 95.9184%

Classifier 3: Part 1 has accuracy 85.7143%, part 2 has accuracy 93.8776%

We can see when we combine others class into C2, the correctness has more accuracy than others. However, we see that by using classifier 3 bayesNet method, part 1 and part 2 has the lowest differences. We conclude that BayesNet is best for experiment 3.

Conclusion:

According to our experiments and results, we can see that how important the data preparation is. The more irrelevant data, the less accuracy. After we remove all those high value missing data and irrelevant data, we noticed that both descriptive and non-descriptive classifier can retrieve more accuracy and correctness.

In experiment 3, we divide it into 2 parts. From the result, we found that non-descriptive classifier has better performance when we only test the most important data. The reason behind that is descriptive classifiers would generate specific rules which non-descriptive classifier would not have. Meanwhile, non-descriptive classifier has higher tolerance to accept incomplete data.

In conclusion, appropriate classifiers can produce the best data result. Before we analyzing our data, we must consider what kind of data we need and what should be removed and use the best classifiers.