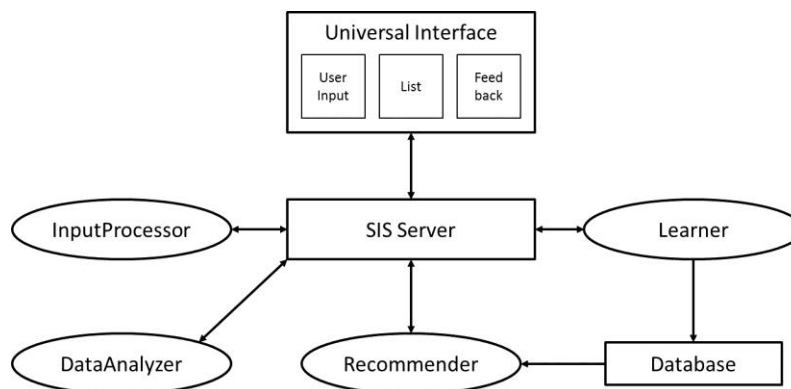


## Project Milestone #2

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### Data Mining Recommender System

- 1) Universal Interface: It is for testing the system. The user can enter an input (i.e., task, data, and restrictions) on the left panel, and observe an output message (i.e., lists of data mining algorithms) on the right panel. After that, the user can give feedback (i.e., checklists whether each recommended algorithm is satisfactory).
- 2) SIS Server: The SIS Server processes messages.
- 3) InputProcessor: It processes a user input. The input of this component is a user input and the output is a task, data, and restrictions.
- 4) DataAnalyzer: It analyzes data to extract meta-information, such as data type, possible features, and so on. The input is data and the output is meta-information.
- 5) Recommender: It recommends data mining algorithms. The input is a task, restrictions, and meta-information and the output is a list of recommended data mining algorithms with the predefined configuration parameters and results.
- 6) Learner: It learns the new experience with its corresponding solution. The input is a feedback.
- 7) Database: It saves all data mining algorithms with parameter information and experiences.



The screenshot shows a web-based application window titled 'Universal Interface'. At the top, there are input fields for 'Server's IP' (127.0.0.1) and 'Port Number' (7999), followed by a 'Connect' button. The main area is divided into two panels. The left panel, 'Sending Message', contains a text area with the path 'roject/project/xml/DataXML/MetaInfo.XML' and a 'Load' button. Below this is a table with two columns: 'Key' and 'Value'. The table contains the following data:

Key	Value
MsgID	1005
Description	MetaInfo
MetaInfo	value

Below the table are buttons for 'MetaInfo.XML', 'Save', and 'Send'. The right panel, 'Message Received', contains a table with two columns: 'Key' and 'Value'. The table contains the following data:

Key	Value
MsgID	1006
Description	List of Algorithms
Algorithm1	J48
Parameter1	-C 0.25 -M 2
Result1	Precision:0.75 Recall:0.80
Algorithm2	LibSVM
Parameter2	-K 0
Result2	Precision:0.70 Recall:0.85

Below the table are buttons for 'Refresh Rate (s/Msg)' (2.0), 'Apply Rate', and 'Save Message'.

## Current System Output

### 1) InputProcessor

The first screenshot shows the 'Sending Message' section with a table of keys and values, and the 'Message Received' section with a table of keys and values. The 'Refresh Rate (s/Msg)' is set to 2.0.

Key	Value
MsgID	20
Description	Create InputProcessor
Name	InputProcessor
InputMsgID1	1004
OutputMsgID1	1001
OutputMsgID2	1002
OutputMsgID3	1003

Key	Value
MsgID	23
Description	Connect to SISServer
Name	InputProcessor

The second screenshot shows the 'Sending Message' section with a table of keys and values, and the 'Message Received' section with a table of keys and values. The 'Refresh Rate (s/Msg)' is set to 2.0.

Key	Value
MsgID	1004
Description	UserInput
UserInput	value

Key	Value
MsgID	1003
Description	Restrictions
Restrictions	high precision

The third screenshot shows the 'Sending Message' section with a table of keys and values, and the 'Message Received' section with a table of keys and values. The 'Refresh Rate (s/Msg)' is set to 2.0.

Key	Value
MsgID	1004
Description	UserInput
UserInput	value

Key	Value
MsgID	1002
Description	Data
Data	Text

The fourth screenshot shows the 'Sending Message' section with a table of keys and values, and the 'Message Received' section with a table of keys and values. The 'Refresh Rate (s/Msg)' is set to 2.0.

Key	Value
MsgID	1004
Description	UserInput
UserInput	value

Key	Value
MsgID	1001
Description	Task
Task	Classifier

### 2) DataAnalyzer

The first screenshot shows the 'Sending Message' section with a table of keys and values, and the 'Message Received' section with a table of keys and values. The 'Refresh Rate (s/Msg)' is set to 2.0.

Key	Value
MsgID	20
Description	Create DataAnalyzer
Name	DataAnalyzer
InputMsgID1	1002
OutputMsgID1	1005

Key	Value
MsgID	23
Description	Connect to SISServer
Name	DataAnalyzer

The second screenshot shows the 'Sending Message' section with a table of keys and values, and the 'Message Received' section with a table of keys and values. The 'Refresh Rate (s/Msg)' is set to 2.0.

Key	Value
MsgID	1002
Description	Data
Data	value

Key	Value
MsgID	1005
Description	MetaInformation
Data Type	String
Average data length	1000
# of possible features	100

### 3) Recommender

Server's IP127.0.0.1Port Number7999Connect

Sending Message

ject/xml/InitXML/CreateRecommender.XMLLoad

Key	Value
MsgID	20
Description	Create Recommender
Name	Recommender
InputMsgID1	1001
InputMsgID2	1003
InputMsgID3	1005
OutputMsgID1	1006

Create... Save Send

Message Received

Key	Value
MsgID	23
Description	Connect to SISServer
Name	Recommender

Refresh Rate (s/Msg)2.0Apply Rate

Save Message

Server's IP127.0.0.1Port Number7999Connect

Sending Message

roject/project/xml/DataXML/MetaInfo.XMLLoad

Key	Value
MsgID	1005
Description	MetaInfo
MetaInfo	value

MetaInf... Save Send

Message Received

Key	Value
MsgID	1006
Description	List of Algorithms
Algorithm1	j48
Parameter1	-C 0.25 -M 2
Result1	Precision:0.75 Recall:0.80
Algorithm2	LibSVM
Parameter2	-k 0
Result2	Precision:0.70 Recall:0.85

Refresh Rate (s/Msg)2.0Apply Rate

Save Message

### 4) Learner

Server's IP127.0.0.1Port Number7999Connect

Sending Message

ct/project/xml/InitXML/CreateLearner.XMLLoad

Key	Value
MsgID	20
Description	Create Learner
Name	Learner
InputMsgID1	1008
OutputMsgID1	1007

Create... Save Send

Message Received

Key	Value
MsgID	23
Description	Connect to SISServer
Name	Learner

Refresh Rate (s/Msg)2.0Apply Rate

Save Message

Server's IP127.0.0.1Port Number7999Connect

Sending Message

oject/project/xml/DataXML/Feedback.XMLLoad

Key	Value
MsgID	1008
Description	Feedback
Feedback	value

Feedba... Save Send

Message Received

Key	Value
MsgID	1007
Description	Feedback
Message	Thanks!

Refresh Rate (s/Msg)2.0Apply Rate

Save Message