11791 HW3 Report
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1.NamedEntityMention Intergration with Scoring Component
Algorithm: Change the Ngram Scorer by adding the number of Question NamedEntityMentions appeared in each answer to each corresponding answer score.
CPE Setting(integrating Remote Snlp Service with initial CPE):

New Result:

```
Loading parser from serialized file edu/stanford/nlp/models/lexparser/engli
Adding annotator dcoref
Question: Booth shot Lincoln?
+ 1.4 Booth shot Lincoln.
- 0.9 Lincoln shot Booth.
+ 0.65 Lincoln was shot by Booth.
- 0.65 Booth was shot by Lincoln.
+ 0.6333333333333333 Booth assassinated Lincoln.
- 0.6333333333333333 Lincoln assassinated Booth.
+ 0.4666666666666667 Lincoln was assassinated by Booth.
- 0.4666666666666667 Booth was assassinated by Lincoln.
Precision at 4.0: 0.5

Question: John loves Mary?
+ 1.4 John loves Mary.
+ 0.7333333333333334 John loves Mary with all his heart.
- 0.6222222222222222 Mary doesn't love John.
- 0.6222222222222222 John doesn't love Mary.
+ 0.5333333333333333 Mary is dearly loved by John.
Precision at 3.0: 0.6666666666666666

2013-10-6 17:31:36 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousE
信息: Stopping Asynchronous Client.
2013-10-6 17:31:36 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousE
```

```
Processing completed successfully.
Documents Processed: 2
Total Time: 3.399 seconds
100% (3399ms) - Collection Processing Engine
  6.27% (213ms) - collectionReaderDescriptor (Process)
  30.89% (1050ms) - scnlp-qihuil-client.xml (Service Call)
  1.82% (62ms) - scnlp-qihuil-client.xml (End of Batch)
  60.96% (2072ms) - hw2-qihuil-aae (Analysis)
  0% (0ms) - hw2-qihuil-aae (End of Batch)
  0.06% (2ms) - casConsumerDescriptor (Analysis)
  0% (0ms) - casConsumerDescriptor (End of Batch)
```

2. Deploy Local UIMA AS Service

Start Broker:

```
INFO: Using java '/usr/lib/jvm/java-1.6.0-openjdk/bin/java'
Java Runtime: Sun Microsystems Inc. 1.6.0_27 /usr/lib/jvm/java-6-openjdk-i386/jr
e
  Heap sizes: current=29696k  free=29231k  max=466048k
    JVM args: -Dactivemq.classpath=amq/conf;/home/lenovo/apache-uima-as-2.4.0/ap
ache-activemq-5.4.1/conf; -Dactivemq.home=/home/lenovo/apache-uima-as-2.4.0/apac
he-activemq-5.4.1 -Dactivemq.base=amq
ACTIVEMQ_HOME: /home/lenovo/apache-uima-as-2.4.0/apache-activemq-5.4.1
ACTIVEMQ_BASE: amq
Loading message broker from: xbean:file:amq/conf/activemq-nojournal.xml
INFO  BrokerService                 - Using Persistence Adapter: MemoryPersiste
nceAdapter
INFO  BrokerService                 - ActiveMQ 5.4.1 JMS Message Broker (localh
ost) is starting
INFO  BrokerService                 - For help or more information please see:
http://activemq.apache.org/
INFO  ManagementContext             - JMX consoles can connect to service:jmx:r
mi:///jndi/rmi://localhost:1099/jmxrmi
INFO  TransportServerThreadSupport  - Listening for connections at: tcp://ubunt
u:61616
INFO  TransportConnector            - Connector openwire Started
INFO  BrokerService                 - ActiveMQ JMS Message Broker (localhost, I
D:ubuntu-56285-1381095349061-0:0) started
```

Deploy:

```
Service:TestElementaeDescriptor Initialized. Ready To Process Messages From Queu
e:inQ_TestElementaeDescriptor_1.1
Service:TokenUniGramaeDescriptor Initialized. Ready To Process Messages From Que
ue:inQ_TokenUniGramaeDescriptor_1.3
Service:TokenAnnotatoraeDescriptor Initialized. Ready To Process Messages From Q
ueue:inQ_TokenAnnotatoraeDescriptor_1.2
Service:TokenTriGramaeDescriptor Initialized. Ready To Process Messages From Que
ue:inQ_TokenTriGramaeDescriptor_1.5
Service:NGramOverlapAnswerScoreraeDescriptor Initialized. Ready To Process Messa
ges From Queue:inQ_NGramOverlapAnswerScoreraeDescriptor_1.6
Service:TokenBiGramaeDescriptor Initialized. Ready To Process Messages From Queu
e:inQ_TokenBiGramaeDescriptor_1.4
Adding annotator tokenize
Adding annotator ssplit
Adding annotator pos
Reading POS tagger model from edu/stanford/nlp/models/pos-tagger/english-left3wo
rds/english-left3words-distsim.tagger ... done [1.2 sec].
Adding annotator lemma
Adding annotator ner
Loading classifier from edu/stanford/nlp/models/ner/english.all.3class.distsim.c
rf.ser.gz ... done [6.3 sec].
Loading classifier from edu/stanford/nlp/models/ner/english.muc.7class.distsim.c
rf.ser.gz ... done [3.9 sec].
Loading classifier from edu/stanford/nlp/models/ner/english.conll.4class.distsim
.crf.ser.gz ... done [4.8 sec].
Initializing JollyDayHoliday for sutime
Reading TokensRegex rules from edu/stanford/nlp/models/sutime/defs.sutime.txt
Reading TokensRegex rules from edu/stanford/nlp/models/sutime/english.sutime.txt
Reading TokensRegex rules from edu/stanford/nlp/models/sutime/english.holidays.s
utime.txt
Adding annotator parse
Loading parser from serialized file edu/stanford/nlp/models/lexparser/englishPCF
G.ser.gz ... done [1.8 sec].
Adding annotator dcoref
Service:StanfordNlpDescriptor Initialized. Ready To Process Messages From Queue:
inQ_StanfordNlpDescriptor_1.7
Service:hw2-qihuil-aae Initialized. Ready To Process Messages From Queue:hw3Queu
e
Press 'q'+'Enter' to quiesce and stop the service or 's'+'Enter' to stop it now.
Note: selected option is not echoed on the console.
```

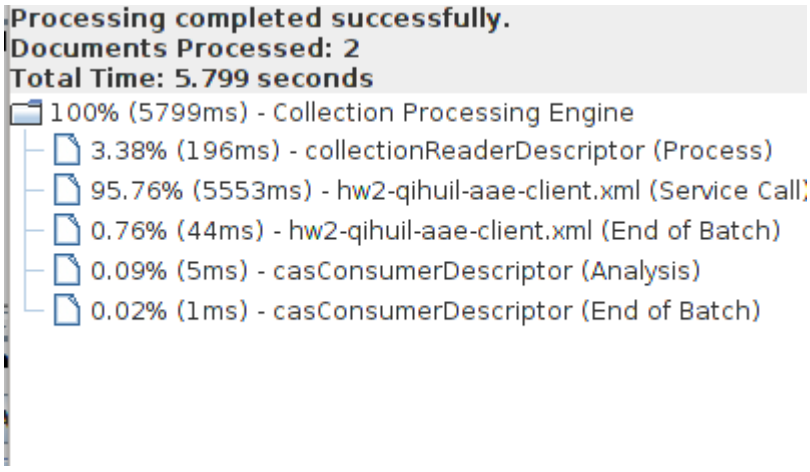
CPE Client Execution Result:

```
2013-10-6 18:10:51 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngine_impl <init>(128)
信息: UIMA Version 2.4.0 UIMA-AS Version 2.4.0
log4j:WARN No appenders could be found for logger (org.apache.activemq.transport.WireFormatNegotiator).
log4j:WARN No appenders could be found for logger (org.apache.activemq.transport.tcp.TcpTransport).
log4j:WARN Please initialize the log4j system properly.
log4j:WARN Please initialize the log4j system properly.
2013-10-6 18:10:51 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngine_impl setupConnection
信息: UIMA AS Client Created Shared Connection To Broker: tcp://ubuntu:61616
2013-10-6 18:10:51 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngine_impl initializeProducer
信息: Initializing JMS Message Producer. Broker: tcp://ubuntu:61616 Queue Name: hw3Queue
2013-10-6 18:10:51 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngine_impl initializeConsumer
信息: Initializing JMS Message Consumer. Broker: tcp://ubuntu:61616 Queue Name: ID:ubuntu-34909-1381097451707-0:
2013-10-6 18:10:52 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngine_impl initialize
信息: Asynchronous Client Has Been Initialized. Serialization Strategy: [xmi] Ready To Process.
Question: Booth shot Lincoln?
+ 1.1 Booth shot Lincoln.
- 0.6 Lincoln shot Booth.
+ 0.43333333333333335 Booth assassinated Lincoln.
- 0.43333333333333335 Lincoln assassinated Booth.
+ 0.35 Lincoln was shot by Booth.
- 0.35 Booth was shot by Lincoln.
+ 0.26666666666666666 Lincoln was assassinated by Booth.
- 0.26666666666666666 Booth was assassinated by Lincoln.
Precision at 4.0: 0.5

Question: John loves Mary?
```

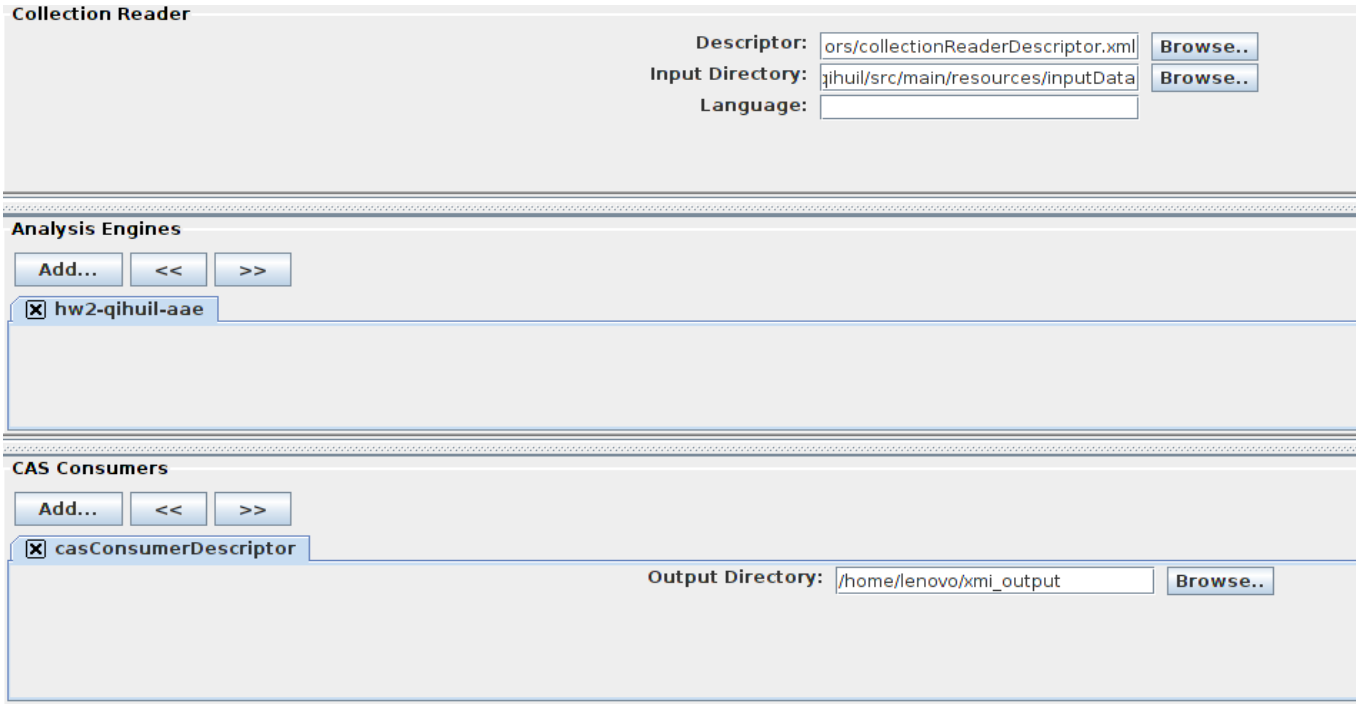
```
Question: John loves Mary?
+ 1.2 John loves Mary.
+ 0.5333333333333333 John loves Mary with all his heart.
- 0.4222222222222222 Mary doesn't love John.
- 0.4222222222222222 John doesn't love Mary.
+ 0.33333333333333337 Mary is dearly loved by John.
Precision at 3.0: 0.6666666666666666

2013-10-6 18:10:58 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngineCommon_impl stop
信息: Stopping Asynchronous Client.
2013-10-6 18:10:58 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngineCommon_impl stop
信息: Asynchronous Client Has Stopped.
2013-10-6 18:10:58 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngineCommon_impl$SharedConnection de
信息: UIMA AS Client Shared Connection Has Been Closed
2013-10-6 18:10:58 org.apache.uima.adapter.jms.client.BaseUIMAAsynchronousEngine_impl stop
信息: UIMA AS Client Undeployed All Containers
Average Precision: 0.5833333333333333
```



Bonus: run a Stanford CoreNLP annotator locally (Creating StandNlpDescriptor.xml and integrated it in the CPE pipeline)

CPE setting:

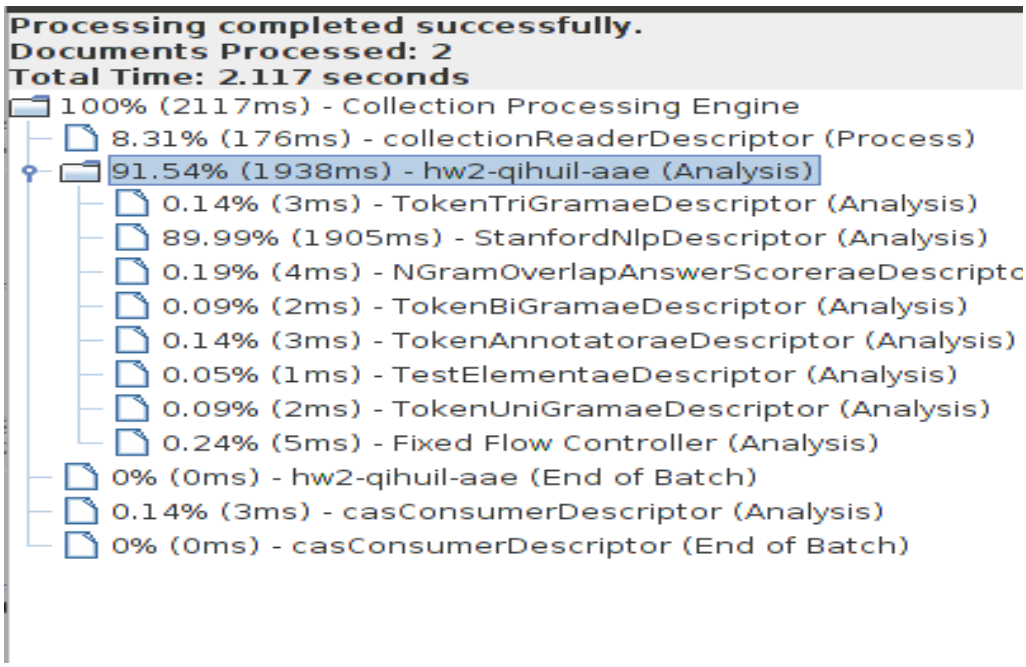


Result:

```
log4j:WARN No appenders could be found for logger (org.springframework.validation.DataBinder).
log4j:WARN Please initialize the log4j system properly.
Adding annotator tokenize
Adding annotator ssplit
Adding annotator pos
Reading POS tagger model from edu/stanford/nlp/models/pos-tagger/english-left3words/english-left3words-distsim.
Adding annotator lemma
Adding annotator ner
Loading classifier from edu/stanford/nlp/models/ner/english.all.3class.distsim.crf.ser.gz ... done [9.0 sec].
Loading classifier from edu/stanford/nlp/models/ner/english.muc.7class.distsim.crf.ser.gz ... done [6.0 sec].
Loading classifier from edu/stanford/nlp/models/ner/english.conll.4class.distsim.crf.ser.gz ... done [7.3 sec].
Initializing JollyDayHoliday for sutime
Reading TokensRegex rules from edu/stanford/nlp/models/sutime/defs.sutime.txt
Reading TokensRegex rules from edu/stanford/nlp/models/sutime/english.sutime.txt
2013-10-6 18:23:38 edu.stanford.nlp.ling.tokensregex.CoreMapExpressionExtractor appendRules
信息: Ignoring inactive rule: temporal-composite-8:ranges
Reading TokensRegex rules from edu/stanford/nlp/models/sutime/english.holidays.sutime.txt
Adding annotator parse
Loading parser from serialized file edu/stanford/nlp/models/lexparser/englishPCFG.ser.gz ... done [2.2 sec].
Adding annotator dcoref
Question: Booth shot Lincoln?
+ 1.1 Booth shot Lincoln.
- 0.6 Lincoln shot Booth.
+ 0.43333333333333335 Booth assassinated Lincoln.
- 0.43333333333333335 Lincoln assassinated Booth.
+ 0.35 Lincoln was shot by Booth.
Question: Booth shot Lincoln?
+ 1.1 Booth shot Lincoln.
- 0.6 Lincoln shot Booth.
+ 0.43333333333333335 Booth assassinated Lincoln.
- 0.43333333333333335 Lincoln assassinated Booth.
+ 0.35 Lincoln was shot by Booth.
- 0.35 Booth was shot by Lincoln.
+ 0.26666666666666666 Lincoln was assassinated by Booth.
- 0.26666666666666666 Booth was assassinated by Lincoln.
Precision at 4.0: 0.5

Question: John loves Mary?
+ 1.2 John loves Mary.
+ 0.5333333333333333 John loves Mary with all his heart.
- 0.42222222222222222 Mary doesn't love John.
- 0.42222222222222222 John doesn't love Mary.
+ 0.33333333333333337 Mary is dearly loved by John.
Precision at 3.0: 0.6666666666666666

Average Precision: 0.5833333333333333
```



Compare Speed with the remote one:
remote: 3.399s total
local: 2.117s total