CSCI B 565: Assignment #4

Due on Saturday, April 9, 2016

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Contents

Problem 1

Listing 1 shows a Perl script.

Listing 1: Sample Perl Script With Highlighting

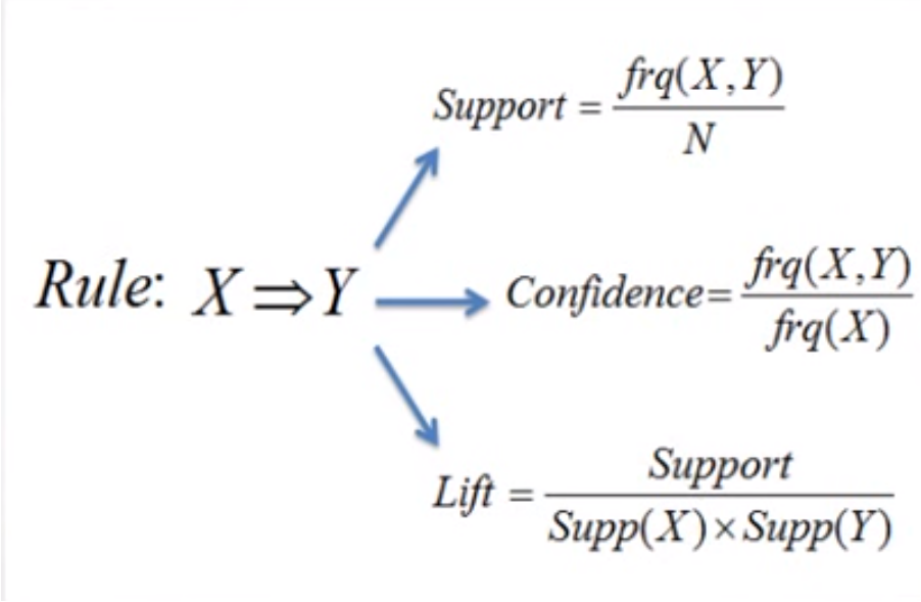
```
#!/usr/bin/perl

use strict;
use warnings;

for (1..99) { print $_." Luftballons\n"; }

# This is a commented line

my $string = "Hello World!";

print $string."\n\n";

$string =~ s/Hello/Goodbye/;

print $string."\n\n";

test();

exit;

sub test { print "All good.\n"; }
```

Problem 2

Problem 3

What are **Association Rules**?

- The idea of Association Rules is that it can be defined as a pattern stating the occurrence of one event, by which another event occurs with a certain probability.
- In other words, they are simple If/Else statements which help us discover patterns between unrelated data.
- The interesting part of Association Rules is that they help us learn relationships of objects which are frequently collectively used.
- The goal is to find all sets (only important ones) having $support > minsup$ (minimum support).
- Followed by checking which rules cross a certain level of confidence. It means that not all rules generated are important, instead simply pick those rules which have $confidence > minconf$.
- The two most basic and important things to look out while mining Association Rules are **Support** & **Confidence**. Also **Lift** is another alternative, due to the shortcomings of the prior.



- Some places where this is used is:
  - Market Basket Analysis.
  - Medical Diagnosis
  - Protein Sequences
  - Census Data

References

- https://www.researchgate.net/publication/238525379_Association_rule_mining-_Applications_in_various_areas
- https://www.youtube.com/watch?v=RHkvnRemaLE&index=3&list=PLVOXKA8fjRuvTVJt_n1rkRl6n3sGcyY6a
- http://aimotion.blogspot.com/2013/01/machine-learning-and-data-mining.html