

Report for Lab Assignment 4

1. Hadoop MapReduce Algorithm

Implement MapReduce algorithm for finding Facebook common friends problem and run the MapReduce job on Apache Hadoop. Write a report including your algorithm and result screenshots .

Solution:

Algorithm:-function map(input)

split input to obtain friend1, friend2 and numberOfCommonFriends

output <[friend1, numberOfCommonFriends], friend2>

output <[friend2, numberOfCommonFriends], friend1>

end

function equals(key1, key2)

if (key1[1] == key2[1])

return true;

end

return false;

end

function compare(key1, key2)

return (key1[2] < key2[2]);

end

function reduce(key, values)

suggestions = []

for (i = 1:min(10,size(values)))

suggestions.push(values[i]);

end

output <key[1], suggestions>

end

Input:

A -> B C D

B -> A C D E

C -> A B D E

D -> A B C E

E -> B C D

Output:

(A B) -> (C D)

(A C) -> (B D)

(A D) -> (B C)

(B C) -> (A D E)

(B D) -> (A C E)

(B E) -> (C D)

(C D) -> (A B E)

(C E) -> (B D)

(D E) -> (B C)

2. Smartphone/Watch Application

Implement a smartwatch/smartphone application using existing speech services/image services

(e.g., IBM Alchemyapi, Face++) related to your project.

Solution:

The application makes use of the IBMAlchemyapi to store the data collected via the smart phone and make use of its deep learning technology.

Screenshots:



