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.

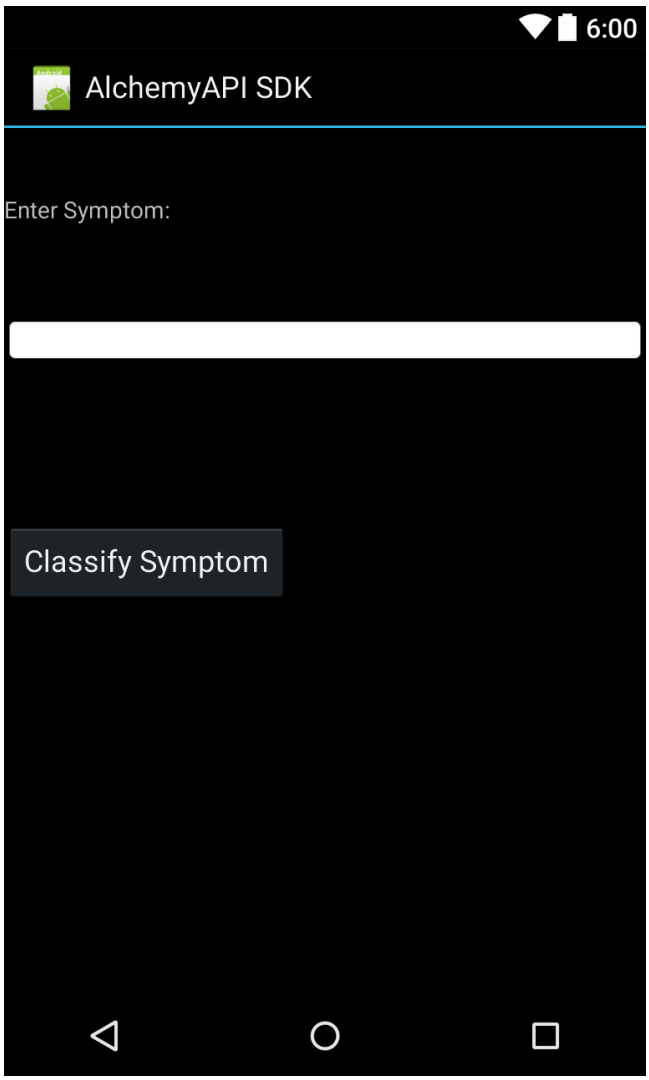

Figure 1.Screen Shot