

## Quiz 3 - 8B - MapReduce

Provide code for Map and Reduce functions for performing the following task:

Input: A directed graph represented using adjacency list.

Output: The graph duplicated by adding a reversed link against each original link

# Solution

map(key, value):

// key: node; value: adjacency list of that node

for each node n in value:

emit(node, n)

emit(n, node)

reduce(key, values):

// key: node; value: an iterator over adjacent nodes

adjacency\_list = []

for each n in values:

adjacency\_list.add(n)

emit(key, adjacency\_list)

```
map(key, value):
```

```
// key: document name; value: text of the document
```

```
for each word w in value:
```

```
    emit(w, 1)
```

```
reduce(key, values):
```

```
// key: a word; value: an iterator over counts
```

```
    result = 0
```

```
    for each count v in values:
```

```
        result += v
```

```
    emit(key, result)
```