

ASSIGNMENT NO. 11

- **MapReduce() Function**

1. **Calculates the total salary per department without any specific query criteria.**

- i. **mapFunction -**

```
var mapFunction = function() {  
    emit(this.department, this.salary);  
};
```

- ii. **reduceFunction -**

```
var reduceFunction = function(key, values) {  
    return Array.sum(values);  
};
```

- iii. **mapReduce Function -**

```
db.employees.mapReduce(  
    mapFunction,  
    reduceFunction,  
    {  
        out: "department_total_salary"  
    }  
);
```

Output:-

```
{ "_id": "Engineering", "value": 135000 }  
{ "_id": "Sales", "value": 105000 }  
{ "_id": "HR", "value": 45000 }
```

2. **Calculates the total salary per department, but it includes a query criteria to consider only employees with a salary greater than or equal to 60000.**

- i. **mapFunction -**

```
var mapFunction = function() {  
    if (this.salary >= 60000) {  
        emit(this.department, this.salary);  
    }  
};
```

ii. reduceFunction -

```
var reduceFunction = function(key, values) {  
    return Array.sum(values);  
};
```

iii. mapReduce Function -

```
db.employees.mapReduce(  
    mapFunction,  
    reduceFunction,  
    {  
        out: "department_total_salary_above_60k",  
        query: { salary: { $gte: 60000 } }  
    }  
);
```

Output:-

```
{ "_id": "Engineering", "value": 135000 }  
{ "_id": "Sales", "value": 105000 }
```