

Design MongoDB database and perform following Map reduce operation:

Create Employee collection by considering following Fields:

- i. Name: Embedded Doc (FName, LName)
- ii. Company Name: String
- iii. Salary: Number
- iv. Designation: String
- v. Age: Number
- vi. Expertise: Array
- vii. DOB: String or Date
- viii. Email id: String
- ix. Contact: String
- x. Address: Array of Embedded Doc (PAddr, LAddr)

Execute the following query:

1. Display the total salary of per company
2. Display the total salary of company Name:"TCS"
3. Return the average salary of company whose address is "Pune".
4. Display total count for "City=Pune"
5. Return count for city pune and age greater than 40.

```
// Create the "Employee" collection
db.createCollection("Employee");
```

```
// Insert sample entries into the "Employee" collection
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```
db.Employee.insert([
  {
    "Name": { "FName": "John", "LName": "Doe" },
    "Company_Name": "Infosys",
    "Salary": 60000,
    "Designation": "Developer",
    "Age": 28,
    "Expertise": ["MongoDB", "SQL"],
    "DOB": "1995-01-15",
    "Email_id": "john.doe@example.com",
    "Contact": "9876543210",
    "Address": [{ "PAddr": "123 Main St", "LAddr": "Apt 45" }]
  },
  {
    "Name": { "FName": "Alice", "LName": "Smith" },
    "Company_Name": "TCS",
    "Salary": 35000,
    "Designation": "Tester",
    "Age": 25,
    "Expertise": ["Testing", "Automation"],
    "DOB": "1998-05-22",
    "Email_id": "alice.smith@example.com",
    "Contact": "8765432109",
    "Address": [{ "PAddr": "456 Oak St", "LAddr": "Suite 12" }]
  },
  // Insert three more documents
  // ...

```

```
// Map-Reduce Operations:
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```

// Query 1: Display the total salary per company
db.Employee.mapReduce(
  function () {
    emit(this.Company_Name, this.Salary);
  },
  function (key, values) {
    return Array.sum(values);
  },
  { out: "TotalSalaryPerCompany", finalize: null }
);

// Query 2: Display the total salary of company Name: "TCS"
db.Employee.mapReduce(
  function () {
    if (this.Company_Name === "TCS") {
      emit(this.Company_Name, this.Salary);
    }
  },
  function (key, values) {
    return Array.sum(values);
  },
  { out: "TotalSalaryTCS", finalize: null }
);

// Query 3: Return the average salary of the company whose address is
"Pune".
db.Employee.mapReduce(
  function () {
    this.Address.forEach(function (addr) {
      if (addr.PAddr === "Pune") {
        emit(this.Company_Name, this.Salary);
      }
    });
  },
  function (key, values) {
    return Array.avg(values);
  },
  { out: "AverageSalaryPune", finalize: null }
);

// Query 4: Display total count for "City=Pune"
db.Employee.mapReduce(
  function () {
    this.Address.forEach(function (addr) {
      if (addr.PAddr === "Pune") {
        emit("City=Pune", 1);
      }
    });
  },
  function (key, values) {
    return Array.sum(values);
  },
  { out: "TotalCountCityPune", finalize: null }
);

```

```
);

// Query 5: Return count for city Pune and age greater than 40.
db.Employee.mapReduce(
  function () {
    // Check if there is an address in Pune and age > 40
    if (this.Address[0].PAddr === "Pune" && this.Age > 40) {
      emit("City=Pune, Age>40", 1);
    }
  },
  function (key, values) {
    return Array.sum(values);
  },
  { out: "CountCityPuneAge40Plus_NoForEach_MR", finalize: null }
);
]);
```