

**/*Practical No : 09
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// IMPLEMENT MAP REDUCE OPERATION WITH SUITABLE EXAMPLE

// Switch to or create the database "LibraryDB"

use LibraryDB;

// Create the "Books" collection in LibraryDB

db.createCollection("Books");

// Insert book records with sample data

db.Books.insertMany([
 { book_id: 1, book_name: "Java Basics", amt: 500, status: "Available" },
 { book_id: 1, book_name: "Advanced Java", amt: 400, status: "Not Available" },
 { book_id: 1, book_name: "Java for Beginners", amt: 300, status: "Not Available" },
 { book_id: 2, book_name: "Object-Oriented Programming", amt: 300, status: "Available" },
 { book_id: 2, book_name: "C Programming", amt: 200, status: "Available" },
 { book_id: 2, book_name: "C++ Fundamentals", amt: 200, status: "Available" },
 { book_id: 3, book_name: "Data Structures in C++", amt: 150, status: "Available" },
 { book_id: 3, book_name: "C++ Advanced Topics", amt: 200, status: "Not Available" },
 { book_id: 4, book_name: "OOP in C++", amt: 300, status: "Not Available" },
 { book_id: 5, book_name: "C++ Complete Guide", amt: 400, status: "Available" },
 { book_id: 5, book_name: "Java & C++", amt: 400, status: "Not Available" },
 { book_id: 5, book_name: "Mastering C++", amt: 400, status: "Available" }
]);

// Define the map function to emit each book's ID and amount

var mapFunction = function() {
 emit(this.book_id, this.amt);
};

// Define the reduce function to sum up the amounts by book ID

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

// Run the mapReduce operation with mapFunction and reduceFunction

// Store the results in a new collection called "TotalAmounts"

db.Books.mapReduce(
 mapFunction,
 reduceFunction,

```
    { out: "TotalAmounts" }  
  );
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db.TotalAmounts.find().pretty();
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// OUTPUT:
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{ "_id" : 1, "value" : 1200 }  
{ "_id" : 2, "value" : 700 }  
{ "_id" : 3, "value" : 350 }  
{ "_id" : 4, "value" : 300 }  
{ "_id" : 5, "value" : 1200 }
```