**Солдатова ФБ-11мп**

**Task 1**

>db.inventory.mapReduce(function()){return emit(this.producer, tis.model)}, function(key, values){return values.length;},{out: ‘reduce1’});

{

"result" : "reduce1",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1633442185, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1633442137, 1)

}

> db.reduce1.find()

{ "\_id" : "Xiaomi", "value" : 5 }

{ "\_id" : "Samsung", "value" : 4 }

{ "\_id" : "LG", "value" : 2 }

{ "\_id" : "Sony", "value" : 3 }

{ "\_id" : "Apple", "value" : 5 }

**Task 2**

> db.test.mapReduce(function(){return emit(this.producer, this.price)}, function(key, values){return Array.sum(values);},{out: 'reduce2'});

{

"result" : "reduce2",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639442288, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(163944265, 4)

}

> db.reduce2.find()

{ "\_id" : "Xiaomi", "value" : 13200 }

{ "\_id" : "Samsung", "value" : 26200 }

{ "\_id" : "LG", "value" : 8500 }

{ "\_id" : "Sony", "value" : 16900 }

{ "\_id" : "Apple", "value" : 27500 }

**Task 3**

> db.orders.mapReduce(function(){return emit(this.customer, this.price)}, function(key, values){return Array.sum(values.sum);},{out: 'reduce3'});

{

"result" : "reduce3",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639442396, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639442395, 4)

}

> db.reduce3.find()

{ "\_id" : { "name" : "Elis", "surname" : "Morgo", "phone" : [ 73843 ], "address" : "Borshagivska St., Kyiv, UA" }, "value" : 12240 }

{ "\_id" : { "name" : "Kateryna", "surname" : "Falow", "phone" : [ 96330 ], "address" : "Drahomanov St., Kyiv, UA" }, "value" : 14120 }

{ "\_id" : { "name" : "Illya", "surname" : "Honer", "phone" : [ 63895 ], "address" : "Shevchenko St., Kyiv, UA" }, "value" : 12000 }

**Task 4**

> db.orders.mapReduce(function(){return emit(this.customer, this.total\_sum)}, function(key, values){return Array.sum(values);},{query: {$and: [{date : {$gte: new Date("2021-08-25")}}, {date : {$lte: new Date("2021-10-01")}}]}, out:'reduce4'});

{

"result" : "reduce4",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639442694, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639442643, 3)

}

> db.reduce4.find()

{ "\_id" : { "name" : "Illya", "surname" : "Honer", "phone" : [ 63895 ], "address" : "Shevchenko St., Kyiv, UA" }, "value" : 12000 }

**Task 5**

> db.orders.mapReduce(function(){let order = {total\_sum: this.total\_sum, count:1}; emit(1, order);}, function(key, values){let ord\_total = {total\_sum:0, count: 0}; for (i in values) {ord\_total.count++; ord\_total.total\_sum+=values[i].total\_sum;} return ord\_total;},{finalize: function(key, value) {return value.total\_sum/value.count;}, out:'reduce5'});

{

"result" : "reduce5",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639442814, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639442757, 2)

}

> db.reduce5.find()

{ "\_id" : 1, "value" : 12786.666666666666 }

**Task 6**

> db.orders.mapReduce(function(){let order = {total\_sum: this.total\_sum, count:1}; emit(this.customer, order);}, function(key, values){let ord\_total = {total\_sum:0, count: 0}; for (i in values) {ord\_total.count++; ord\_total.total\_sum+=values[i].total\_sum;} return ord\_total;},{finalize: function(key, value) {return value.total\_sum/value.count;}, out:'reduce6'});

{

"result" : "reduce6",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639442954, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639442901, 2)

}

> db.reduce6.find()

{ "\_id" : { "name" : "Elis", "surname" : "Morgo", "phone" : [ 73843 ], "address" : "Borshagivska St., Kyiv, UA" }, "value" : 12240 }

{ "\_id" : { "name" : "Illya", "surname" : "Honer", "phone" : [ 63895 ], "address" : "Shevchenko St., Kyiv, UA" }, "value" : 12000 }

{ "\_id" : { "name" : "Kateryna", "surname" : "Falow", "phone" : [ 96330 ], "address" : "Drahomanov St., Kyiv, UA" }, "value" : 14120 }

**Task 7**

db.orders.mapReduce(function(){for (i in this.order\_items){emit(this.order\_items[i],1);}}, function(key, values){return Array.sum(values);},{out:'reduce7'});

{

"result" : "reduce7",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639443254, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639443222, 1)

}

> db.reduce7.find()

{ "\_id" : "MotionFlow", "value" : 2 }

{ "\_id" : "ThinQ", "value" : 3 }

{ "\_id" : "iPhone12", "value" : 2 }

**Task 8**

> db.orders.mapReduce(function(){for (i in this.order\_items){emit(this.order\_items[i], this.customer.name+' '+this.customer.surname);}}, function(key, values){let customers = []; for (i in values){if (!customers.includes(values[i])){customers.push(values[i]);}}return customers.ToString;},{out:'reduce8'});

{

"result" : "reduce8",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639443337, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639443305, 2)

}

> db.reduce8.find()

{ "\_id" : "MotionFlow", "value" : "Elis Morgo" }

{ "\_id" : "ThinQ", "value" : "Illya Honer" }

{ "\_id" : "iPhone12", "value" : "Kateryna Falow" }

**Task 9**

> db.orders.mapReduce(function(){this.order\_items.forEach(item => {let name = this.customer.name+' '+this.customer.surname; emit(item, name);});}, function(key, values){let orderCountByCustomer = {}; values.forEach( customer => {orderCountByCustomer[customer] = (orderCountByCustomer[customer] || 0)+1;}); return Object.keys(orderCountByCustomer).filter(username => orderCountByCustomer[username] >=1).ToString;},{out: 'reduce9'});

{

"result" : "reduce9",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639443395, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639443366, 3)

}

> db.reduce9.find().pretty()

{ "\_id" : "MotionFlow", "value" : null }

{ "\_id" : "ThinQ", "value" : "Illya Honer" }

{ "\_id" : "iPhone12", "value" : "null }

**Task 11**

db.orders.mapReduce(function(){emit(this.customer, this.total\_sum)}, function(key, values){return Array.sum(values);},{query: {date : {$gt: new Date("2021-08-25")}}, out: {reduce:'reduce11'}});

{

"result" : "reduce11",

"ok" : 1,

"$clusterTime" : {

"clusterTime" : Timestamp(1639443702, 1),

"signature" : {

"hash" : BinData(0,"AAAAAAAAAAAAAAAAAAAAAAAAAAA="),

"keyId" : NumberLong(0)

}

},

"operationTime" : Timestamp(1639443677, 3)

}

> db.reduce11.find()

{ "\_id" : { "name" : "Illya", "surname" : "Honer", "phone" : [ 63895 ], "address" : "Shevchenko St., Kyiv, UA" }, "value" : 12000 }