

```

> // $first & $last
>
> // display smallest city by population for each state
> db.ZipCode.aggregate([
... {$group: {_id: {$state: "$state", City: "$city"}, Population: {$sum: "$pop"}}},
... {$sort: {Population: 1}},
... {$group: {_id: "$_id.State", sc: {$first: "$_id.City"}, sp: {$first: "$Population"}}},
... {$project: {_id: 0, City: "$sc", State: "$_id", Population: "$Population"}, {$limit: 10} ])
{ "City" : "TATEVILLE", "State" : "KY" }
{ "City" : "ANCONA", "State" : "IL" }
{ "City" : "CHUNKY", "State" : "MS" }
{ "City" : "FULTON", "State" : "TX" }
{ "City" : "MOUNT CARBON", "State" : "WV" }
{ "City" : "DOUDS", "State" : "IA" }
{ "City" : "KEUTERVILLE", "State" : "ID" }
{ "City" : "BETHEL", "State" : "DE" }
{ "City" : "BUCKLAND", "State" : "MA" }
{ "City" : "KIRTLAND A F B E", "State" : "NM" }
>
> // display largest city by population for each state
> db.ZipCode.aggregate([
... {$group: {_id: {$state: "$state", City: "$city"}, Population: {$sum: "$pop"}}},
... {$sort: {Population: 1}},
... {$group: {_id: "$_id.State", sc: {$last: "$_id.City"}, sp: {$last: "$Population"}}},
... {$project: {_id: 0, City: "$sc", State: "$_id", Population: "$Population"}, {$limit: 10} ])
{ "City" : "MILWAUKEE", "State" : "WI" }
{ "City" : "TULSA", "State" : "OK" }
{ "City" : "LAS VEGAS", "State" : "NV" }
{ "City" : "BURLINGTON", "State" : "VT" }
{ "City" : "PHOENIX", "State" : "AZ" }
{ "City" : "SALT LAKE CITY", "State" : "UT" }
{ "City" : "INDIANAPOLIS", "State" : "IN" }
{ "City" : "MEMPHIS", "State" : "TN" }
{ "City" : "WASHINGTON", "State" : "DC" }
{ "City" : "SIOUX FALLS", "State" : "SD" }
>
> // $unwind
>
> // unwind loc of city match by state: "DC"
> db.ZipCode.aggregate([ {$project: {_id: 0, city: 1, loc: 1, state: 1}}, {$unwind: "$loc"}, {$match: {state: "DC"}}, {$skip: 4}, {$limit: 10} ])
{ "city" : "WASHINGTON", "loc" : -76.989539, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : 38.882941, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : -77.044701, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : 38.896444, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : -77.031236, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : 38.906731, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : -77.026303, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : 38.892955, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : -77.059936, "state" : "DC" }
{ "city" : "WASHINGTON", "loc" : 38.936282, "state" : "DC" }
>

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