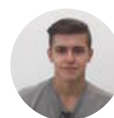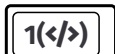3. domaća zadaća iz NMBP-a (3rd homework Advanced Databases) (MR)

1(</>) 2(</>) 3(</>)

Luka Ilić
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0036514047

3 days
02:08:40

Submit

Pomoću kolekcije `nobelprizes` doznajte broj laureata i različitih kategorija po godinama, te omjer broja laureata i kategorija po godinama.
Npr. omjer 2018. je iznosio 5/4 = 1.25 (stvarni podatak se može razlikovati).
Zaokružite omjer na *dvije* decimale i nazovite ga `laureateCategoryRatio`.

Primjer rezultata:

```
[
  {
    "_id": "2018",
    "value": {
      "laureates": 5,
      "categories": 4,
      "laureateCategoryRatio": 1.25
    }
  },
  ...
]
```

Using the `nobelprizes` collection find out the number of laureates and different categories per years, and the ratio of number of laureates and categories per years.
Eg. The ratio in year 2018 was 5/4 = 1.25 (the real information may be different).
Round up the ratio to **two** digits and name it `laureateCategoryRatio`.

Example of the result set is shown above.

```
1  db.nobelprizes.mapReduce(
2    `function() {
3      emit (this.year, {categories: 1, laureates: this.laureates.length})
4    };`,
5    `function(key, values) {
6      var rv = {
7        categories: 0,
8        laureates: 0
9      }
10     values.forEach(function(value) {
11       rv.categories += value.categories
12       rv.laureates += value.laureates
13     })
14
15     return rv
16   };`,
17   {
18     out: "nobelovci",
19     finalize: `function(key, rv) {
```

Run

Save

```
19        finalize:  function(key, rv) {
20            rv.laureateCategoryRatio = (rv.laureates / rv.categories).toFixed(2)
21            return rv
22        }`
23    }
24 )
25
26
27
28
29
```

☺ Correct! Well done!

Result:

```json
[
  {
    "_id": "1901",
    "value": {
      "categories": 5,
      "laureates": 6,
      "laureateCategoryRatio": "1.20"
    }
  },
  {
    "_id": "1902",
    "value": {
      "categories": 5,
      "laureates": 7,
      "laureateCategoryRatio": "1.40"
    }
  },
  {
    "_id": "1903",
    "value": {
      "categories": 5,
      "laureates": 7,
      "laureateCategoryRatio": "1.40"
    }
  },
  {
    "_id": "1904",
    "value": {
      "categories": 5,
      "laureates": 6,
      "laureateCategoryRatio": "1.20"
    }
  },
  {
    "_id": "1905",
    "value": {
      "categories": 5,
      "laureates": 5,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
```

```
      "_id": "1906",
      "value": {
        "categories": 5,
        "laureates": 6,
        "laureateCategoryRatio": "1.20"
      }
    },
    {
      "_id": "1907",
      "value": {
        "categories": 5,
        "laureates": 6,
        "laureateCategoryRatio": "1.20"
      }
    },
    {
      "_id": "1908",
      "value": {
        "categories": 5,
        "laureates": 7,
        "laureateCategoryRatio": "1.40"
      }
    },
    {
      "_id": "1909",
      "value": {
        "categories": 5,
        "laureates": 7,
        "laureateCategoryRatio": "1.40"
      }
    },
    {
      "_id": "1910",
      "value": {
        "categories": 5,
        "laureates": 5,
        "laureateCategoryRatio": "1.00"
      }
    },
    {
      "_id": "1911",
      "value": {
        "categories": 5,
        "laureates": 6,
        "laureateCategoryRatio": "1.20"
      }
    },
    {
      "_id": "1912",
      "value": {
        "categories": 5,
        "laureates": 6,
        "laureateCategoryRatio": "1.20"
      }
    },
    {
      "_id": "1913",
      "value": {
        "categories": 5,
```

```json
      "laureates": 5,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
    "_id": "1914",
    "value": {
      "categories": 3,
      "laureates": 3,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
    "_id": "1915",
    "value": {
      "categories": 3,
      "laureates": 4,
      "laureateCategoryRatio": "1.33"
    }
  },
  {
    "_id": "1916",
    "value": {
      "categories": 1,
      "laureates": 1,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
    "_id": "1917",
    "value": {
      "categories": 3,
      "laureates": 4,
      "laureateCategoryRatio": "1.33"
    }
  },
  {
    "_id": "1918",
    "value": {
      "categories": 2,
      "laureates": 2,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
    "_id": "1919",
    "value": {
      "categories": 4,
      "laureates": 4,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
    "_id": "1920",
    "value": {
      "categories": 5,
      "laureates": 5,
      "laureateCategoryRatio": "1.00"
    }
```

```
    },
    {
      "_id": "1921",
      "value": {
        "categories": 4,
        "laureates": 5,
        "laureateCategoryRatio": "1.25"
      }
    },
    {
      "_id": "1922",
      "value": {
        "categories": 5,
        "laureates": 6,
        "laureateCategoryRatio": "1.20"
      }
    },
    {
      "_id": "1923",
      "value": {
        "categories": 4,
        "laureates": 5,
        "laureateCategoryRatio": "1.25"
      }
    },
    {
      "_id": "1924",
      "value": {
        "categories": 3,
        "laureates": 3,
        "laureateCategoryRatio": "1.00"
      }
    },
    {
      "_id": "1925",
      "value": {
        "categories": 4,
        "laureates": 6,
        "laureateCategoryRatio": "1.50"
      }
    },
    {
      "_id": "1926",
      "value": {
        "categories": 5,
        "laureates": 6,
        "laureateCategoryRatio": "1.20"
      }
    },
    {
      "_id": "1927",
      "value": {
        "categories": 5,
        "laureates": 7,
        "laureateCategoryRatio": "1.40"
      }
    },
    {
      "_id": "1928",
```

```json
      "value": {
        "categories": 4,
        "laureates": 4,
        "laureateCategoryRatio": "1.00"
      }
    },
    {
      "_id": "1929",
      "value": {
        "categories": 5,
        "laureates": 7,
        "laureateCategoryRatio": "1.40"
      }
    },
    {
      "_id": "1930",
      "value": {
        "categories": 5,
        "laureates": 5,
        "laureateCategoryRatio": "1.00"
      }
    },
    {
      "_id": "1931",
      "value": {
        "categories": 4,
        "laureates": 6,
        "laureateCategoryRatio": "1.50"
      }
    },
    {
      "_id": "1932",
      "value": {
        "categories": 4,
        "laureates": 5,
        "laureateCategoryRatio": "1.25"
      }
    },
    {
      "_id": "1933",
      "value": {
        "categories": 4,
        "laureates": 5,
        "laureateCategoryRatio": "1.25"
      }
    },
    {
      "_id": "1934",
      "value": {
        "categories": 4,
        "laureates": 6,
        "laureateCategoryRatio": "1.50"
      }
    },
    {
      "_id": "1935",
      "value": {
        "categories": 4,
        "laureates": 5,
```

```
      "laureateCategoryRatio": "1.25"
    }
  },
  {
    "_id": "1936",
    "value": {
      "categories": 5,
      "laureates": 7,
      "laureateCategoryRatio": "1.40"
    }
  },
  {
    "_id": "1937",
    "value": {
      "categories": 5,
      "laureates": 7,
      "laureateCategoryRatio": "1.40"
    }
  },
  {
    "_id": "1938",
    "value": {
      "categories": 5,
      "laureates": 5,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
    "_id": "1939",
    "value": {
      "categories": 4,
      "laureates": 5,
      "laureateCategoryRatio": "1.25"
    }
  },
  {
    "_id": "1943",
    "value": {
      "categories": 3,
      "laureates": 4,
      "laureateCategoryRatio": "1.33"
    }
  },
  {
    "_id": "1944",
    "value": {
      "categories": 5,
      "laureates": 6,
      "laureateCategoryRatio": "1.20"
    }
  },
  {
    "_id": "1945",
    "value": {
      "categories": 5,
      "laureates": 7,
      "laureateCategoryRatio": "1.40"
    }
  },
```

```json
{
  "_id": "1946",
  "value": {
    "categories": 5,
    "laureates": 8,
    "laureateCategoryRatio": "1.60"
  }
},
{
  "_id": "1947",
  "value": {
    "categories": 5,
    "laureates": 8,
    "laureateCategoryRatio": "1.60"
  }
},
{
  "_id": "1948",
  "value": {
    "categories": 4,
    "laureates": 4,
    "laureateCategoryRatio": "1.00"
  }
},
{
  "_id": "1949",
  "value": {
    "categories": 5,
    "laureates": 6,
    "laureateCategoryRatio": "1.20"
  }
},
{
  "_id": "1950",
  "value": {
    "categories": 5,
    "laureates": 8,
    "laureateCategoryRatio": "1.60"
  }
},
{
  "_id": "1951",
  "value": {
    "categories": 5,
    "laureates": 7,
    "laureateCategoryRatio": "1.40"
  }
},
{
  "_id": "1952",
  "value": {
    "categories": 5,
    "laureates": 7,
    "laureateCategoryRatio": "1.40"
  }
},
{
  "_id": "1953",
  "value": {
```

```
      "categories": 5,
      "laureates": 6,
      "laureateCategoryRatio": "1.20"
    }
  },
  {
    "_id": "1954",
    "value": {
      "categories": 5,
      "laureates": 8,
      "laureateCategoryRatio": "1.60"
    }
  },
  {
    "_id": "1955",
    "value": {
      "categories": 4,
      "laureates": 5,
      "laureateCategoryRatio": "1.25"
    }
  },
  {
    "_id": "1956",
    "value": {
      "categories": 4,
      "laureates": 9,
      "laureateCategoryRatio": "2.25"
    }
  },
  {
    "_id": "1957",
    "value": {
      "categories": 5,
      "laureates": 6,
      "laureateCategoryRatio": "1.20"
    }
  },
  {
    "_id": "1958",
    "value": {
      "categories": 5,
      "laureates": 9,
      "laureateCategoryRatio": "1.80"
    }
  },
  {
    "_id": "1959",
    "value": {
      "categories": 5,
      "laureates": 7,
      "laureateCategoryRatio": "1.40"
    }
  },
  {
    "_id": "1960",
    "value": {
      "categories": 5,
      "laureates": 6,
      "laureateCategoryRatio": "1.20"
```

```
      }
    },
    {
      "_id": "1961",
      "value": {
        "categories": 5,
        "laureates": 6,
        "laureateCategoryRatio": "1.20"
      }
    },
    {
      "_id": "1962",
      "value": {
        "categories": 5,
        "laureates": 8,
        "laureateCategoryRatio": "1.60"
      }
    },
    {
      "_id": "1963",
      "value": {
        "categories": 5,
        "laureates": 11,
        "laureateCategoryRatio": "2.20"
      }
    },
    {
      "_id": "1964",
      "value": {
        "categories": 5,
        "laureates": 8,
        "laureateCategoryRatio": "1.60"
      }
    },
    {
      "_id": "1965",
      "value": {
        "categories": 5,
        "laureates": 9,
        "laureateCategoryRatio": "1.80"
      }
    },
    {
      "_id": "1966",
      "value": {
        "categories": 4,
        "laureates": 6,
        "laureateCategoryRatio": "1.50"
      }
    },
    {
      "_id": "1967",
      "value": {
        "categories": 4,
        "laureates": 8,
        "laureateCategoryRatio": "2.00"
      }
    },
    {
```

```
    "_id": "1968",
    "value": {
      "categories": 5,
      "laureates": 7,
      "laureateCategoryRatio": "1.40"
    }
  },
  {
    "_id": "1969",
    "value": {
      "categories": 6,
      "laureates": 10,
      "laureateCategoryRatio": "1.67"
    }
  },
  {
    "_id": "1970",
    "value": {
      "categories": 6,
      "laureates": 9,
      "laureateCategoryRatio": "1.50"
    }
  },
  {
    "_id": "1971",
    "value": {
      "categories": 6,
      "laureates": 6,
      "laureateCategoryRatio": "1.00"
    }
  },
  {
    "_id": "1972",
    "value": {
      "categories": 5,
      "laureates": 11,
      "laureateCategoryRatio": "2.20"
    }
  },
  {
    "_id": "1973",
    "value": {
      "categories": 6,
      "laureates": 12,
      "laureateCategoryRatio": "2.00"
    }
  },
  {
    "_id": "1974",
    "value": {
      "categories": 6,
      "laureates": 12,
      "laureateCategoryRatio": "2.00"
    }
  },
  {
    "_id": "1975",
    "value": {
      "categories": 6,
```

```
      "laureates": 12,
      "laureateCategoryRatio": "2.00"
    }
  },
  {
    "_id": "1976",
    "value": {
      "categories": 6,
      "laureates": 9,
      "laureateCategoryRatio": "1.50"
    }
  },
  {
    "_id": "1977",
    "value": {
      "categories": 6,
      "laureates": 11,
      "laureateCategoryRatio": "1.83"
    }
  },
  {
    "_id": "1978",
    "value": {
      "categories": 6,
      "laureates": 11,
      "laureateCategoryRatio": "1.83"
    }
  },
  {
    "_id": "1979",
    "value": {
      "categories": 6,
      "laureates": 11,
      "laureateCategoryRatio": "1.83"
    }
  },
  {
    "_id": "1980",
    "value": {
      "categories": 6,
      "laureates": 11,
      "laureateCategoryRatio": "1.83"
    }
  },
  {
    "_id": "1981",
    "value": {
      "categories": 6,
      "laureates": 11,
      "laureateCategoryRatio": "1.83"
    }
  },
  {
    "_id": "1982",
    "value": {
      "categories": 6,
      "laureates": 9,
      "laureateCategoryRatio": "1.50"
    }
```

```json
    },
    {
      "_id": "1983",
      "value": {
        "categories": 6,
        "laureates": 7,
        "laureateCategoryRatio": "1.17"
      }
    },
    {
      "_id": "1984",
      "value": {
        "categories": 6,
        "laureates": 9,
        "laureateCategoryRatio": "1.50"
      }
    },
    {
      "_id": "1985",
      "value": {
        "categories": 6,
        "laureates": 8,
        "laureateCategoryRatio": "1.33"
      }
    },
    {
      "_id": "1986",
      "value": {
        "categories": 6,
        "laureates": 11,
        "laureateCategoryRatio": "1.83"
      }
    },
    {
      "_id": "1987",
      "value": {
        "categories": 6,
        "laureates": 9,
        "laureateCategoryRatio": "1.50"
      }
    },
    {
      "_id": "1988",
      "value": {
        "categories": 6,
        "laureates": 12,
        "laureateCategoryRatio": "2.00"
      }
    },
    {
      "_id": "1989",
      "value": {
        "categories": 6,
        "laureates": 10,
        "laureateCategoryRatio": "1.67"
      }
    },
    {
      "_id": "1990",
```

```json
      "value": {
        "categories": 6,
        "laureates": 11,
        "laureateCategoryRatio": "1.83"
      }
    },
    {
      "_id": "1991",
      "value": {
        "categories": 6,
        "laureates": 7,
        "laureateCategoryRatio": "1.17"
      }
    },
    {
      "_id": "1992",
      "value": {
        "categories": 6,
        "laureates": 7,
        "laureateCategoryRatio": "1.17"
      }
    },
    {
      "_id": "1993",
      "value": {
        "categories": 6,
        "laureates": 11,
        "laureateCategoryRatio": "1.83"
      }
    },
    {
      "_id": "1994",
      "value": {
        "categories": 6,
        "laureates": 12,
        "laureateCategoryRatio": "2.00"
      }
    },
    {
      "_id": "1995",
      "value": {
        "categories": 6,
        "laureates": 12,
        "laureateCategoryRatio": "2.00"
      }
    },
    {
      "_id": "1996",
      "value": {
        "categories": 6,
        "laureates": 13,
        "laureateCategoryRatio": "2.17"
      }
    },
    {
      "_id": "1997",
      "value": {
        "categories": 6,
        "laureates": 12,
```

```
      "laureateCategoryRatio": "2.00"
    }
  },
  {
    "_id": "1998",
    "value": {
      "categories": 6,
      "laureates": 12,
      "laureateCategoryRatio": "2.00"
    }
  },
  {
    "_id": "1999",
    "value": {
      "categories": 6,
      "laureates": 7,
      "laureateCategoryRatio": "1.17"
    }
  },
  {
    "_id": "2000",
    "value": {
      "categories": 6,
      "laureates": 13,
      "laureateCategoryRatio": "2.17"
    }
  },
  {
    "_id": "2001",
    "value": {
      "categories": 6,
      "laureates": 15,
      "laureateCategoryRatio": "2.50"
    }
  },
  {
    "_id": "2002",
    "value": {
      "categories": 6,
      "laureates": 13,
      "laureateCategoryRatio": "2.17"
    }
  },
  {
    "_id": "2003",
    "value": {
      "categories": 6,
      "laureates": 11,
      "laureateCategoryRatio": "1.83"
    }
  },
  {
    "_id": "2004",
    "value": {
      "categories": 6,
      "laureates": 12,
      "laureateCategoryRatio": "2.00"
    }
  },
```

```
{
  "_id": "2005",
  "value": {
    "categories": 6,
    "laureates": 13,
    "laureateCategoryRatio": "2.17"
  }
},
{
  "_id": "2006",
  "value": {
    "categories": 6,
    "laureates": 9,
    "laureateCategoryRatio": "1.50"
  }
},
{
  "_id": "2007",
  "value": {
    "categories": 6,
    "laureates": 12,
    "laureateCategoryRatio": "2.00"
  }
},
{
  "_id": "2008",
  "value": {
    "categories": 6,
    "laureates": 12,
    "laureateCategoryRatio": "2.00"
  }
},
{
  "_id": "2009",
  "value": {
    "categories": 6,
    "laureates": 13,
    "laureateCategoryRatio": "2.17"
  }
},
{
  "_id": "2010",
  "value": {
    "categories": 6,
    "laureates": 11,
    "laureateCategoryRatio": "1.83"
  }
},
{
  "_id": "2011",
  "value": {
    "categories": 6,
    "laureates": 13,
    "laureateCategoryRatio": "2.17"
  }
},
{
  "_id": "2012",
  "value": {
```

```json
        "categories": 6,
        "laureates": 10,
        "laureateCategoryRatio": "1.67"
      }
    },
    {
      "_id": "2013",
      "value": {
        "categories": 6,
        "laureates": 13,
        "laureateCategoryRatio": "2.17"
      }
    },
    {
      "_id": "2014",
      "value": {
        "categories": 6,
        "laureates": 13,
        "laureateCategoryRatio": "2.17"
      }
    },
    {
      "_id": "2015",
      "value": {
        "categories": 6,
        "laureates": 11,
        "laureateCategoryRatio": "1.83"
      }
    },
    {
      "_id": "2016",
      "value": {
        "categories": 6,
        "laureates": 11,
        "laureateCategoryRatio": "1.83"
      }
    },
    {
      "_id": "2017",
      "value": {
        "categories": 6,
        "laureates": 12,
        "laureateCategoryRatio": "2.00"
      }
    },
    {
      "_id": "2018",
      "value": {
        "categories": 5,
        "laureates": 12,
        "laureateCategoryRatio": "2.40"
      }
    }
]
```