

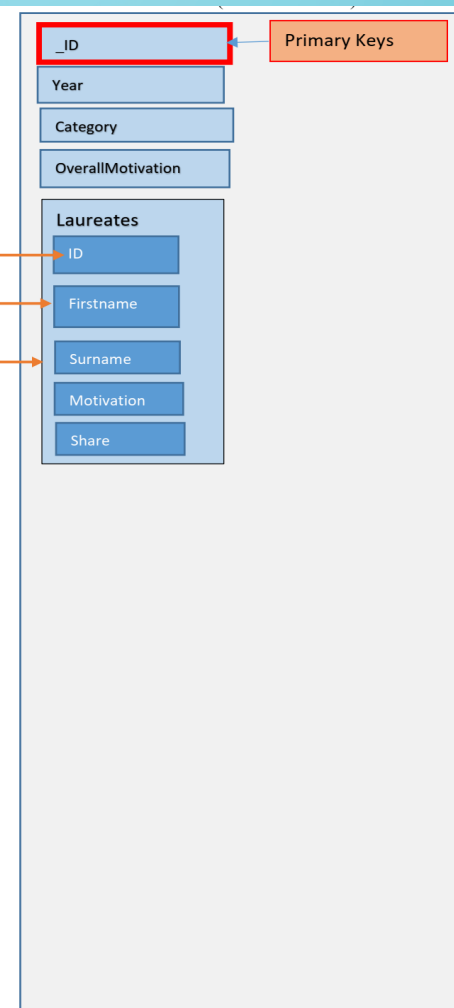
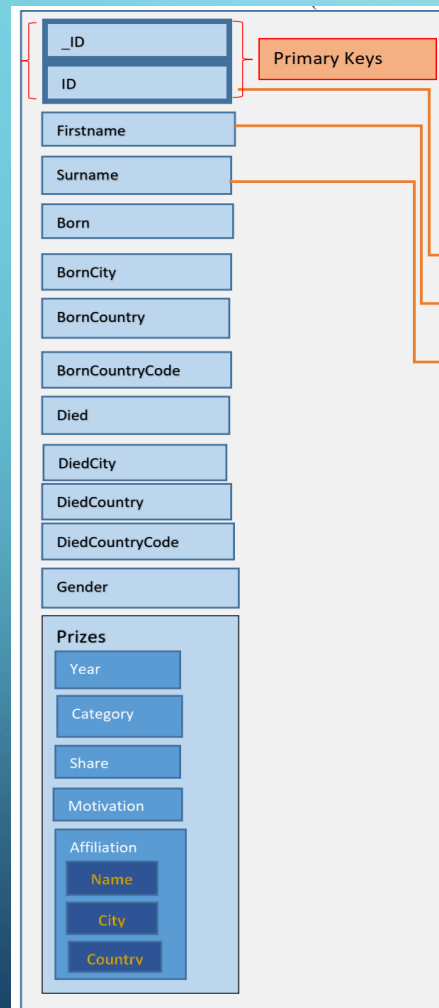
# Exploring the Nobel prize data from 1901 to 2018

**OVERVIEW:** The data contains information about who has been awarded the Nobel Prize, when, in what prize category and the motivation, as well as basic information about the Nobel Laureates such as birth data and the affiliation at the time of the award.

## I. Database model:

“Nobel” database contains 2 collections: Laureates and Prizes

“Laureates” collection (934 documents)



“Prizes” collection (590 documents)

## II. Data Analysis Intuition:

### Categorical Data:

#### Prizes Collection:

```
_id: ObjectId('63d92672b9986af2fac4d33c')
year: "2018"
category: "physics"
overallMotivation: ""for groundbreaking inventions in the field of laser physics""
laureates: Array
  0: Object
    id: "960"
    firstname: "Arthur"
    surname: "Ashkin"
    motivation: ""for the optical tweezers and their application to biological systems""
    share: "2"
```

#### Laureates Collection:

```
_id: ObjectId('63d9265cb9986af2fac4cf95')
id: "2"
firstname: "Hendrik Antoon"
surname: "Lorentz"
born: "1853-07-18"
died: "1928-02-04"
bornCountry: "the Netherlands"
bornCountryCode: "NL"
bornCity: "Arnhem"
diedCountry: "the Netherlands"
diedCountryCode: "NL"
gender: "male"
prizes: Array
  0: Object
    year: "1902"
    category: "physics"
    share: "2"
    motivation: ""in recognition of the extraordinary service they rendered by their re_"
    affiliations: Array
      0: Object
        name: "Leiden University"
        city: "Leiden"
        country: "the Netherlands"
```

**Quantitative Data:** Only the number of shares of each prize is quantitative data in both collections

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    ► affiliations: Array
```



### III. Exploration of data:

#### 1. “Prizes” :

**Category:** There are 6 types of Categories prizes and it is shared quite evenly among them, except economics area.

Row Labels	Count of category
chemistry	110
economics	50
Literature	110
Medicine	109
Peace	99
Physics	112
<b>Grand Total</b>	<b>590</b>

**Year:** The period of this data is from 1901 to 2018.

## 2. “Laureates” :

**Born:** The data have laureates born from 1817 to 1997, in which some document does not have date of birth.

**BornCity:** There are 614 different born cities in total.

**BornCountry:** There are 120 different born countries in total, including some countries have changed names during the reported period.

**Died:** The list includes laureates died during the period of 1903-2018.

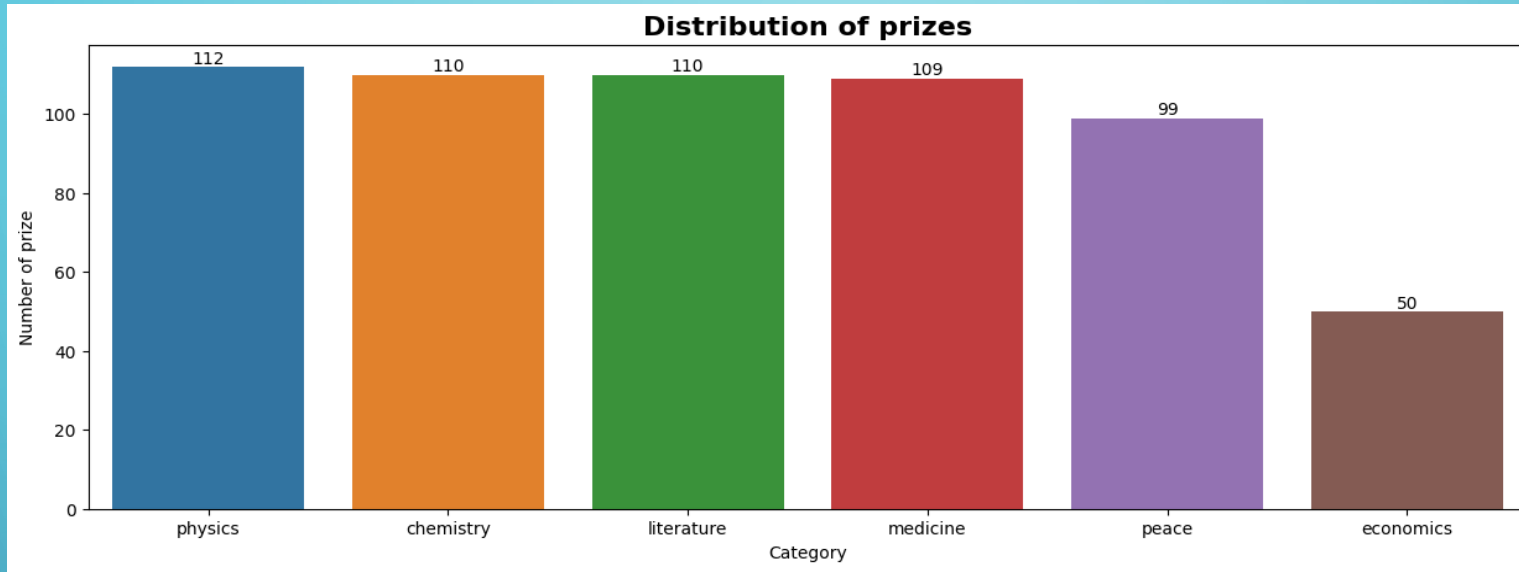
**DiedCity:** There are 296 different died cities in total.

**Gender:** There are 3 types of genders, including “male” & “female” for individual laureates & “org” for organisations laureates

**Prizes:** there are 858 prizes in total affiliated for the list of laureates

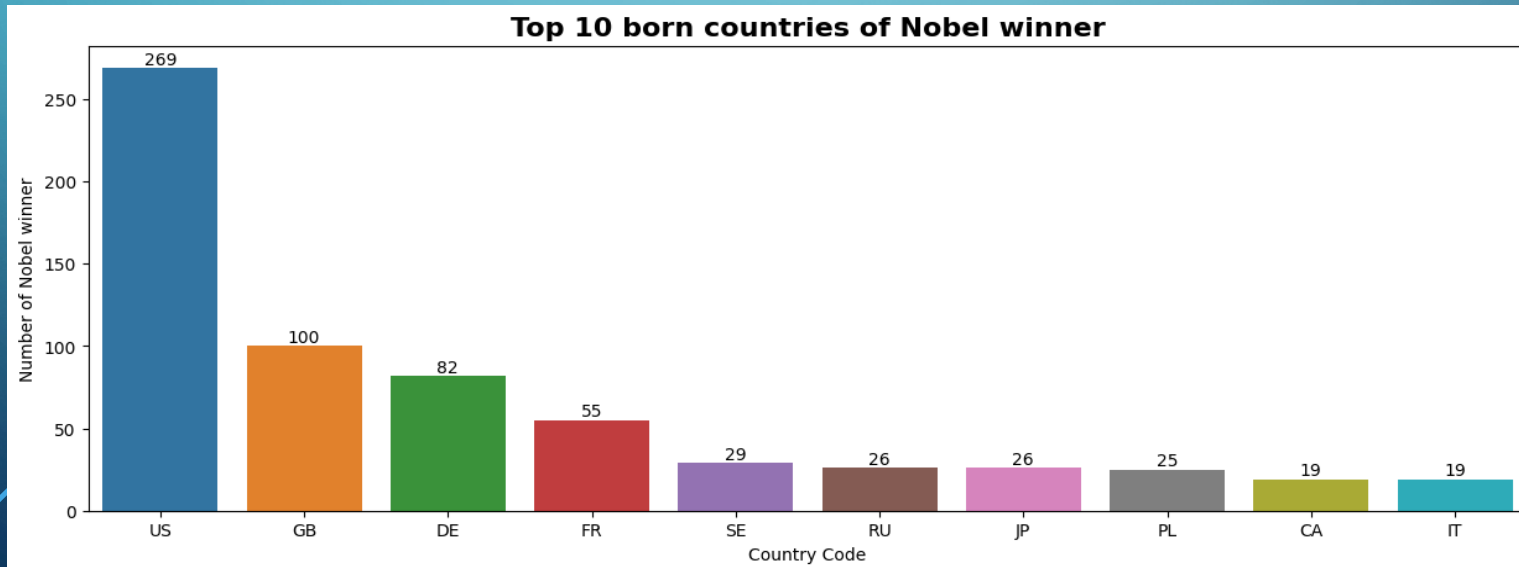
## IV. Data Visualization and Conclusion:

### 1. Distribution of prizes



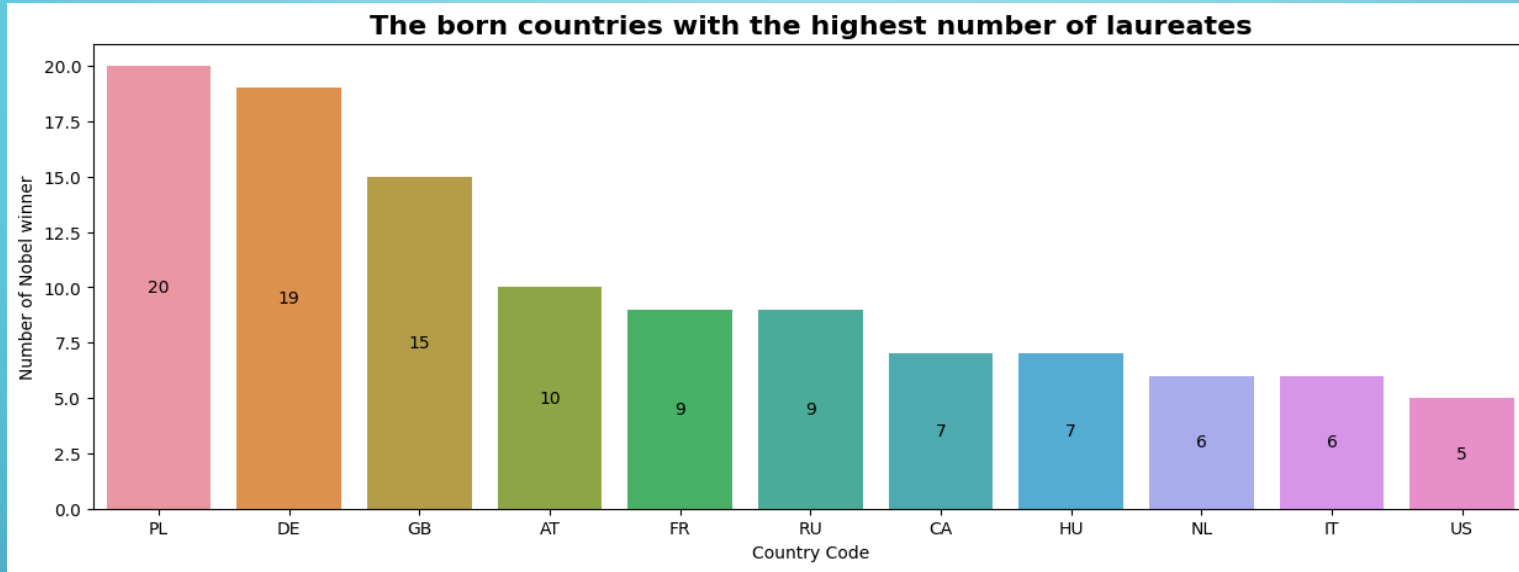
Economics is the field with the lowest number of prizes, which has half as many awards as other fields.

### 2. Most Nobel Winner Countries



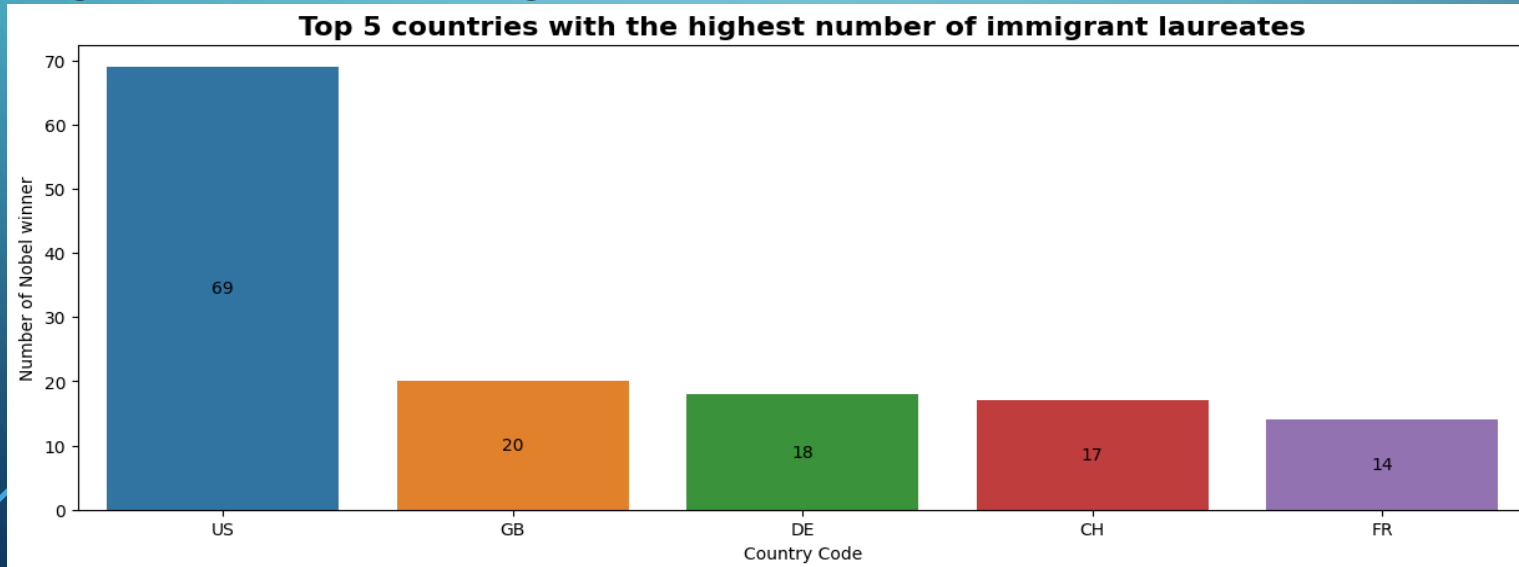
USA, Great Britain, Deutschland (Germany) had the most laureates in these years with remarkable distance

### 3. Born countries with the highest number of laureates



Poland, Deutschland (Germany), and Great Britain had the most laureates that won Nobel prizes.

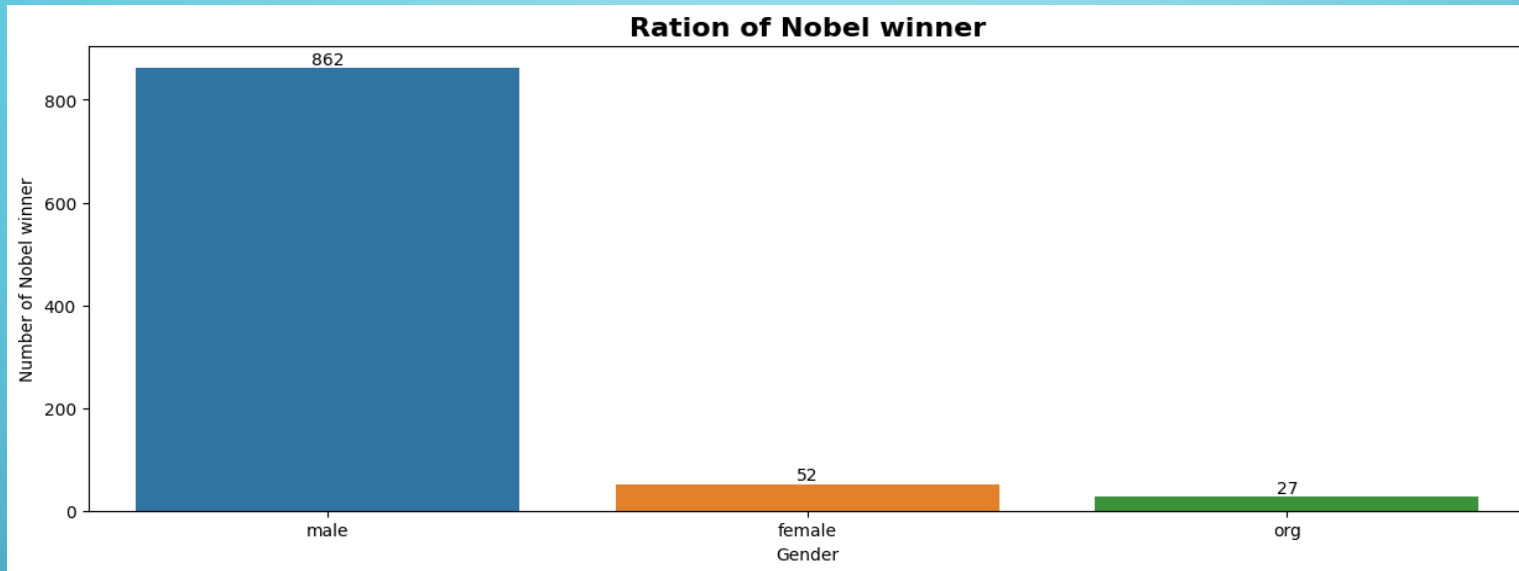
### 4. Countries with the highest number of immigrant laureates



The USA had the most immigrant laureates

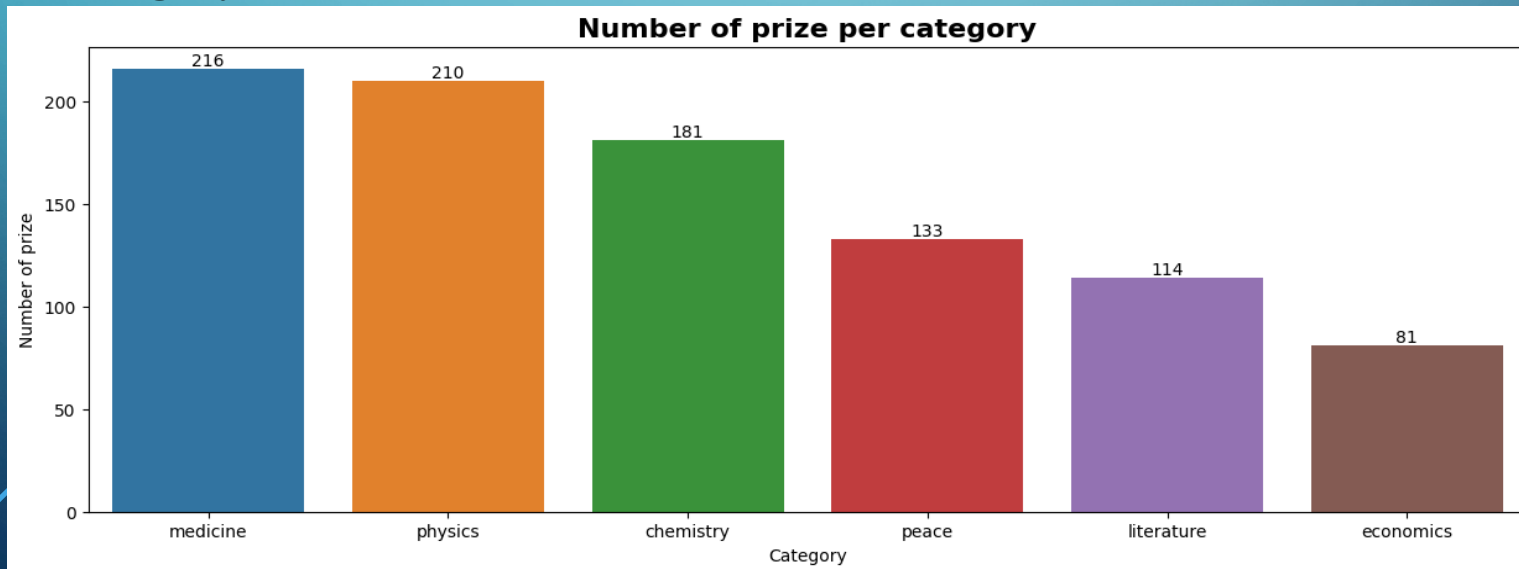


## 5. The ratio of Winners



More than 850  
Men won prizes,  
about 50 Women  
did and less than  
30 for  
Organizations

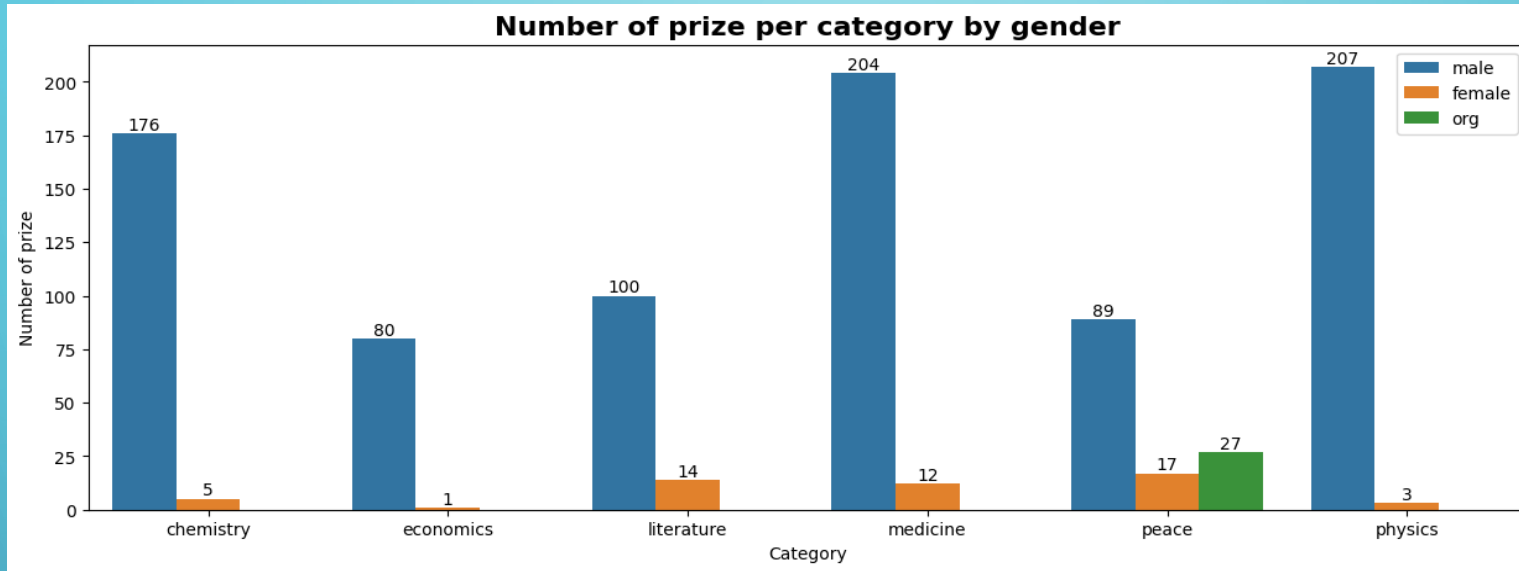
## 6. Number of prize per category



Medicine,  
Physics and  
Chemistry are  
the fields with  
the highest  
number of prizes

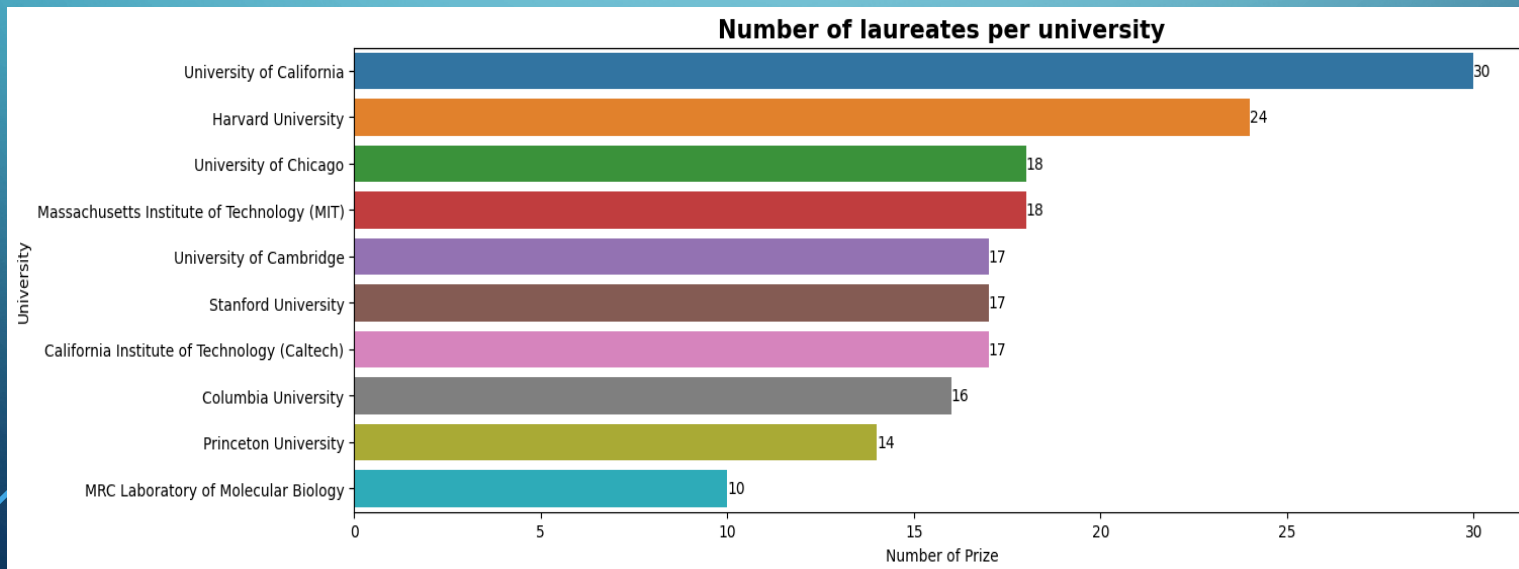


## 7. Category By Gender



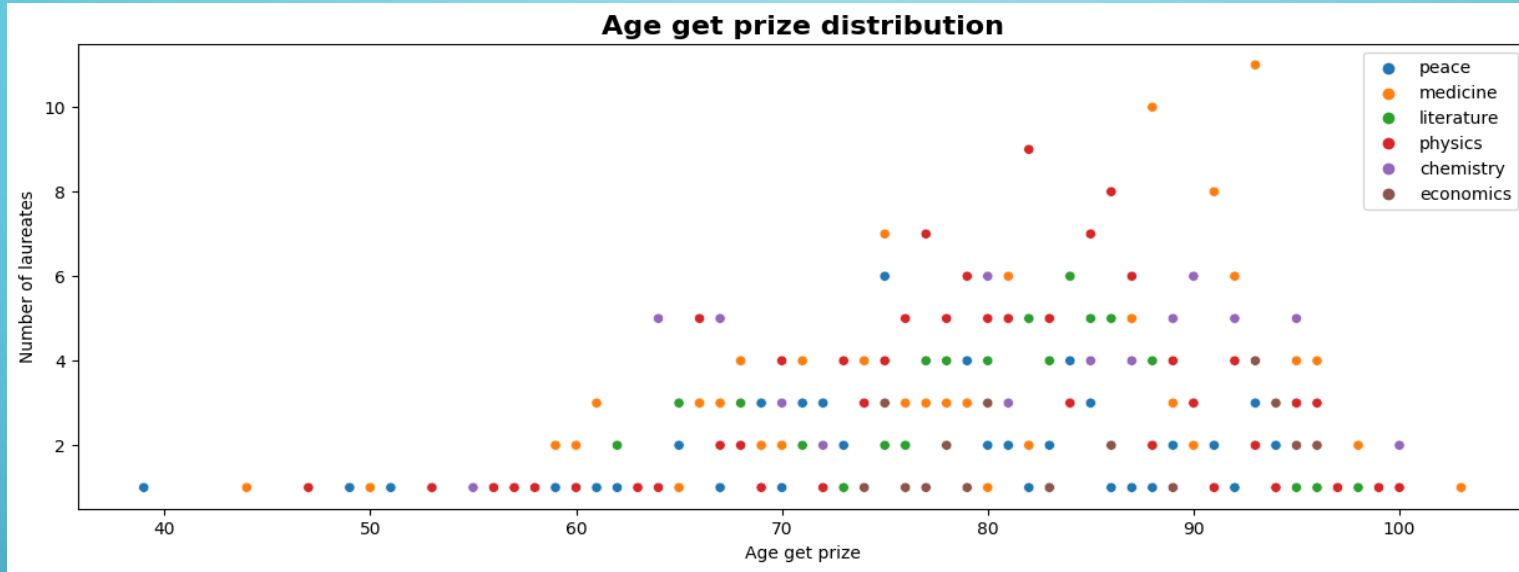
Women have won the most prizes in Medicine, Literature and Peace while Physics, Medicine and Chemistry are the most popular fields for men. Organizations have solely received honors in the sphere of peace.

## 8. Top Universities that Nobel winners studied



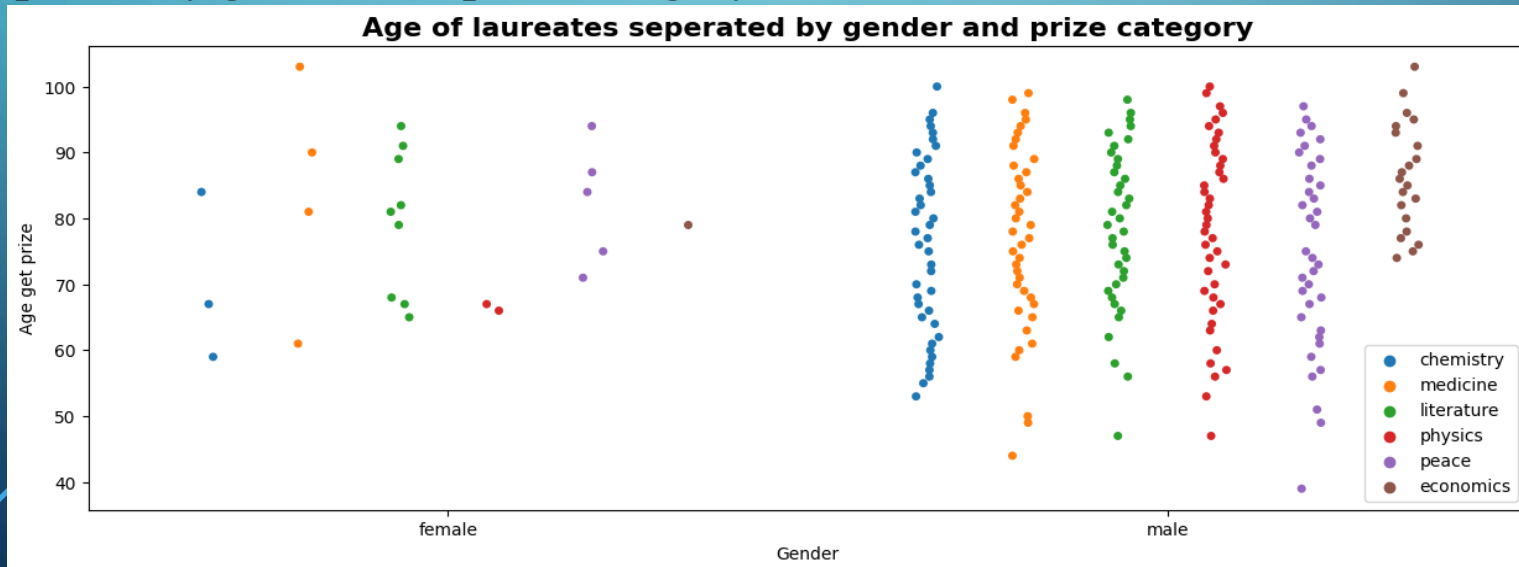
University of California, Harvard University, University of Chicago and Massachusetts Institute of Technology (MIT) are top 3 Universities that Nobel winners studied there

## 9. Distribution of Age Winners get prize



The ages between 75 and 95 years old are the highest number of laureates, particularly the peak at 85 ages.

## 10. Age of winners separate by gender and prize category





At the end of each section, I make a few comments about what I have studied through data analysis according to each criterion of the section.

*I hope that this mini project will bring high efficiency to apply to practical situations in businesses.*

*Wishing everyone a ton of health, happiness, and success.*

*Sincerely thank you.*

***THE END!***