

Alex hinds

12-7-2023

## Data Tools

The data tools module was very useful because it explained how to read binary.

Binary is the fundamental language of computers, utilizing a system of only two digits, 0 and 1, to represent all data. In binary code, each digit is a binary "bit," and combinations of bits form binary "bytes," which encode information such as numbers, text, or instructions. Computers process and store data using binary, with electrical signals or magnetic states representing the binary digits, enabling the execution of complex tasks through the manipulation of these binary codes.

## Big Data

Big Data was an interesting module because it showed how much data there is and what it is used for. One of the most interesting things is how much data satellites use and produce. The satellites produce more than 15 petabytes of data a day.

## Bias in Machine Learning

Bias in predictive algorithms refers to the presence of systematic errors or inaccuracies in their predictions that disproportionately impact certain groups. These biases can arise from biased training data, reflecting historical inequalities or underrepresentation of specific demographics. When predictive algorithms are trained on biased datasets, they may perpetuate and even exacerbate existing social, economic, or racial disparities. Addressing bias in predictive algorithms requires careful consideration during the design, development, and ongoing evaluation stages to ensure fair and equitable outcomes for all users.

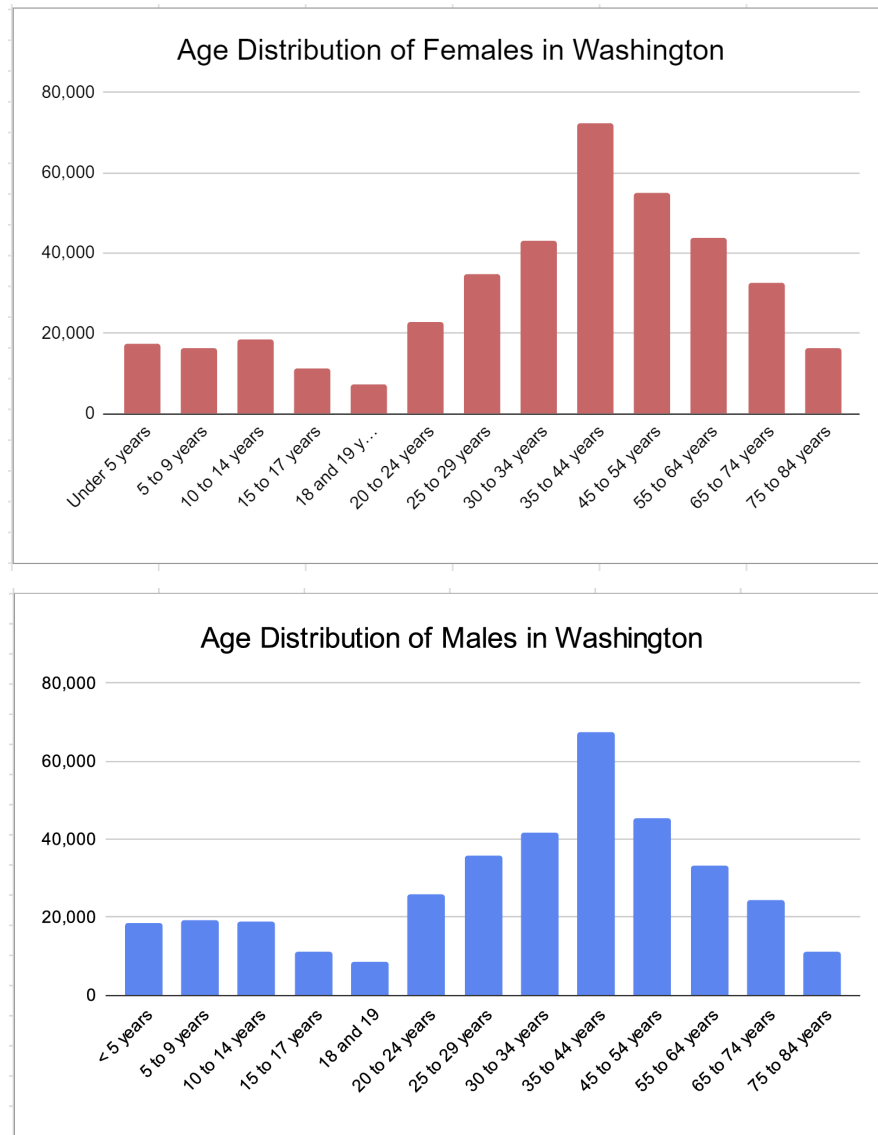
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## Question

What is the average age of people in Washington in regards to sex?

## Data



The graph shows that the highest age group of males and females in Washington is 35-44 years old. However, there are fewer females in the over 55 age range. While there are more older males, there are more females under 18.

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Here is the progress from Khan Academy

### Bias in machine learning

AP.CSP: DAT-2 (EU), DAT-2.C (LO), DAT-2.C.5 (EK), IOC (BI), IOC-1 (EU), IOC-1.B (LO), IOC-1.B.1 (EK), IOC-1.B.2 (EK), IOC-1.B.3 (EK), IOC-1.D (LO), IOC-1.D.1 (EK), IOC-1.D.2 (EK), IOC-1.D.3 (EK)

Learn

- Machine learning algorithms
- Bias in predictive algorithms
- Bias in facial recognition
- Bias in language translation

Practice

**Bias in machine learning**

Familiar


Try again

Up next for you:

**Unit test: 80% a few seconds ago**

Try taking the unit test again to level up on all the skills in this unit and collect up to 120 Mastery points

Take Unit test again



### Data tools

AP.CSP: DAT-2.A (LO), DAT-2.A.1 (EK), DAT-2.A.2 (EK), DAT-2.A.3 (EK), DAT-2.A.4 (EK), DAT-2.D (LO), DAT-2.D.1 (EK), DAT-2.D.5 (EK), DAT-2.E.3 (EK)

Learn

- Storing data sets
- Computing basic statistics
- Finding patterns in data sets

Practice

**Computing basic statistics**

Proficient

Nice! Ready to move on

**Finding patterns in data sets**

Familiar

Try again

### Big data

AP.CSP: DAT (BI), DAT-2 (EU), DAT-2.C (LO), DAT-2.C.1 (EK), DAT-2.C.6 (EK), DAT-2.C.7 (EK), DAT-2.C.8 (EK)

Learn

- The era of big data
- The sources of big data
- The challenges of big data

Practice

**Big data**

Mastered