Sampling

Simple Random Sampling

- Each item/person has an equal chance of being selected

- "Randomly selected"
- Random number generator
- Names out of a hat

Simple Random Example

Cluster Sampling

- Data broken into naturally occurring groups
- Randomly select THE GROUPS
- Sample EVERYONE in the chosen groups

Cluster Example

Amazon

Jo Ann Fabrics
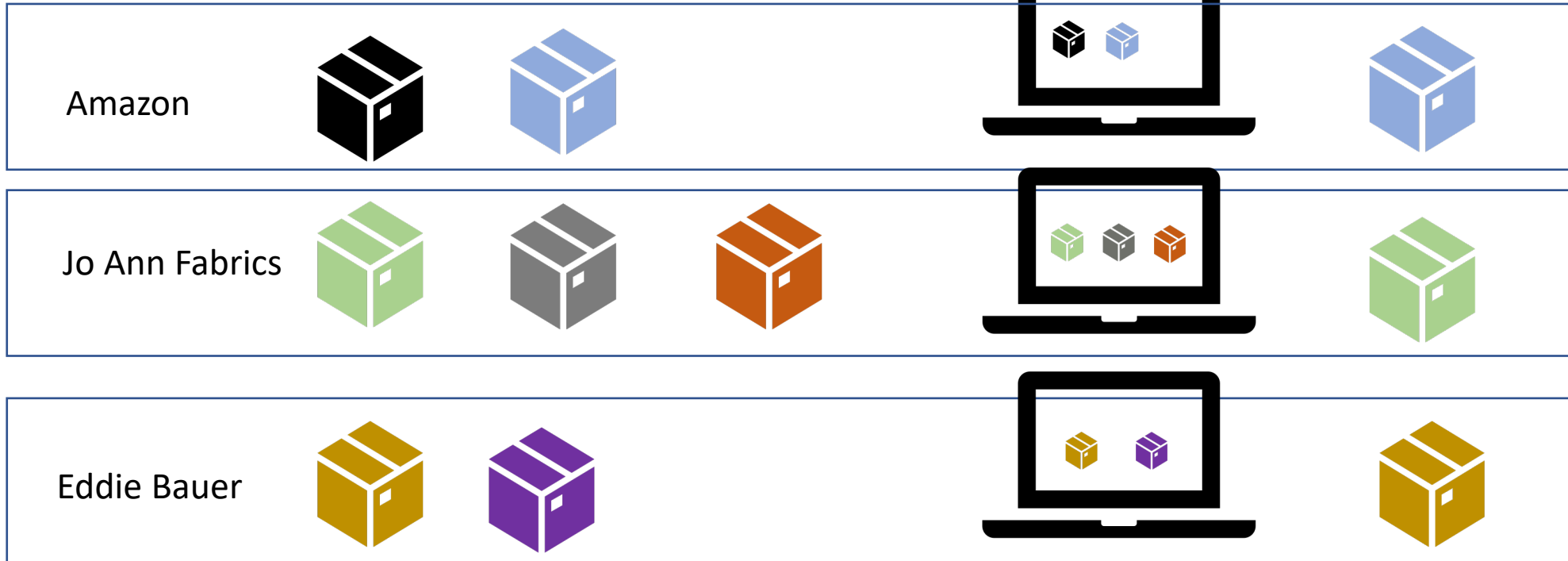
Eddie Bauer

Amazon

Jo Ann Fabrics

Eddie Bauer

Stratified Sampling

- Data broken into naturally occurring groups
- Use ALL groups
- Randomly select a certain % within the groups
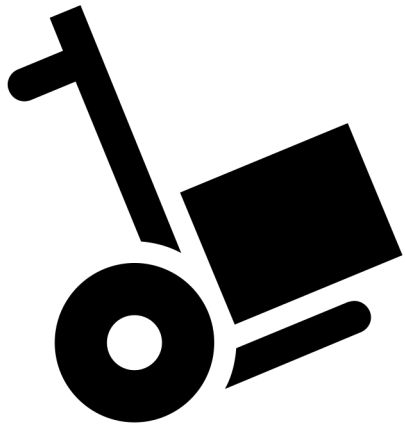- Proportional

Stratified Example

Systematic Sampling

- The order of occurrence matters
- Take every set number of people/things

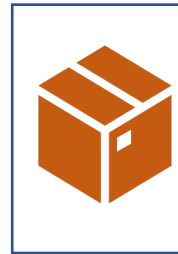# Systematic Example

Every second package

2cd   4th   6th

Convenience Sampling

- "The lazy way"
- Whatever is easiest for the person sampling
- No rhyme or reason
- No order
- Where the largest number of people is

Convenience Example

Example Questions

Sampling people in the cubes at work, starting with the person in the cubicle next to them

- Convenience Sampling
  - Nearest

Every 1000 teddy bears, one is pulled off the assembly line to ensure it's high quality

- Systematic Sampling
  - The order matters
  - Every nth

They are investigating a new testing method at Woz U – everyone in the data science and cyber security program gets it

- **Cluster sampling**
  - **Everyone in selected groups is sampled**

Data from FitBits are collected to see how long people walk around the mall. Each FitBit is assigned a random number from 1 to 20, and if it is a 20, then data is recorded.

- Simple random sampling
  - "Random"

The principal wonders about the students' favorite teacher, so he heads to the cafeteria and asks students there.

- Convenience sampling
  - Goes where there is a large group of readily available students
  - Easy for the principal

Building inspectors test buildings to see if they are up to code by selecting them randomly

- Simple random sampling

Government officials are examining Corona testing policies by state. Every state participates, and the number of people who get tested are proportional to the number of people in that state.

- **Stratified sampling**
  - **Strata / groups are the states**
  - **"proportional"**

Godiva checks every 300th box of chocolates to make sure it has the right balance of flavors.

- Systematic sampling
  - Order matters
  - Every nth format

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Questions?