

Section 2.1 — Frequency Distributions

Chris Godbout

Outline

Frequency Distributions

Thinking about Data

Frequency Distributions

- Construct a frequency distribution

Frequency Distributions

Definition (Distribution)

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Definition (Frequency Distribution)

A **frequency distribution** shows how data are partitioned among several categories (or **classes**) by listing the categories along with the number (frequency) of data values in each of them.

More definitions

Definition (Class Limits)

Class limits are the smallest and largest numbers that can belong to the classes. **Class midpoints** are the values in the middle of each class.

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Definition (Class boundaries)

Class boundaries are the numbers used to separate the classes *without* the gaps.

Definition (Class width)

Class width is the difference between two consecutive lower class limits.

Construction a frequency distribution

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2. Choose an appropriate class width.
3. Find the class limits.
4. Determine the frequency of each class.

IQ Scores

50	56	70	72	73	74	75	76	76	76	76	76	77
77	78	80	80	80	84	85	85	85	85	86	86	86
86	87	87	88	88	88	89	89	89	91	92	93	94
94	94	95	96	96	96	96	96	96	96	97	97	98
99	99	99	99	100	101	101	102	104	104	105	105	106
107	107	107	107	108	111	115	115	118	120	125	128	141

Other Frequency Distribution

Definition (Relative Frequency Distribution)

A **relative (or percentage) frequency distribution** is a frequency distribution in which each class frequency is replaced by a relative frequency or a percentage.

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Definition (Cumulative Frequency Distribution)

A **cumulative frequency distribution** is one in which the frequency for each class is the sum of all previous classes.

Thinking about Data

List of weights

Last digit of weight	Frequency
0	46
1	1
2	2
3	3
4	3
5	30
6	4
7	0
8	8
9	3

Weights of pennies

Weight of pennies (g)	Frequency
2.40-2.49	18
2.50-2.59	19
2.60-2.69	19
2.70-2.79	0
2.70-2.79	0
2.80-2.89	0
2.90-2.99	2
3.00-3.09	25
3.10-3.19	8