

Special cause or Common cause?

A student in STAT 495 conducted a study on the performance and reliability of an Internet access system.. The study focused on the question: “How often do users get the requested answer from a company’s Internet access system?” Specifically, proxy servers for a company handle all Internet access requests and count the number of successful (and unsuccessful) attempts. The table below gives the daily number of Internet access attempts and the number of such attempts that resulted in an error message for 20 consecutive days.

| Day | Attempts | Errors | Faction | Day | Attempts | Errors | Fraction |
|-------|----------|--------|---------|-----|-----------|---------|----------|
| 1 | 412,670 | 42,104 | 0.102 | 11 | 446,823 | 40,405 | 0.090 |
| 2 | 395,736 | 40,286 | 0.102 | 12 | 431,661 | 44,198 | 0.102 |
| 3 | 401,765 | 35,399 | 0.088 | 13 | 434,353 | 39,047 | 0.090 |
| 4 | 395,422 | 97,981 | 0.248 | 14 | 406,232 | 39,455 | 0.097 |
| 5 | 422,223 | 45,346 | 0.107 | 15 | 402,454 | 48,292 | 0.120 |
| 6 | 433,234 | 43,699 | 0.101 | 16 | 403,312 | 47,720 | 0.118 |
| 7 | 396,788 | 24,752 | 0.062 | 17 | 387,782 | 53,173 | 0.137 |
| 8 | 411,383 | 45,391 | 0.110 | 18 | 355,500 | 49,474 | 0.139 |
| 9 | 423,348 | 39,179 | 0.093 | 19 | 372,441 | 45,222 | 0.121 |
| 10 | 474,053 | 48,680 | 0.103 | 20 | 415,813 | 40,583 | 0.098 |
| Total | | | | | 8,222,993 | 910,386 | |