**TUGAS MINGGU KEDUA**

**STATISTIKA DESKRIPTIF**



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**S1 SISTEM INFORMASI**

**FAKULTAS SAINS DAN TEKNOLOGI**

**UNIVERSITAS AIRLANGGA**

**2021**

1. Cari data riil dari buku atau sumber yang lain minimal 100 data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Kabupaten/Kota | 2015 | 2016 | 2017 | 2018 | 2019 |
| 1. Cilacap | 1 694 726 | 1 703 390 | 1 711 627 | 1 719 504 | 1 727 098 |
| 2. Banyumas | 1 635 909 | 1 650 625 | 1 665 025 | 1 679 124 | 1 693 006 |
| 3. Purbalingga | 898 376 | 907 507 | 916 427 | 925 193 | 933 989 |
| 4. Banjarnegara | 901 826 | 907 410 | 912 917 | 918 219 | 923 192 |
| 5. Kebumen | 1 184 882 | 1 188 603 | 1 192 007 | 1 195 092 | 1 197 982 |
| 6. Purworejo | 710 386 | 712 686 | 714 574 | 716 477 | 718 316 |
| 7. Wonosobo | 777 122 | 780 793 | 784 207 | 787 384 | 790 504 |
| 8. Magelang | 1 245 496 | 1 257 123 | 1 268 396 | 1 279 625 | 1 290 591 |
| 9. Boyolali | 963 690 | 969 325 | 974 579 | 979 799 | 984 807 |
| 10. Klaten | 1 158 795 | 1 163 218 | 1 167 401 | 1 171 411 | 1 174 986 |
| 11. Sukoharjo | 864 207 | 871 397 | 878 374 | 885 205 | 891 912 |
| 12. Wonogiri | 949 017 | 951 975 | 954 706 | 957 106 | 959 492 |
| 13. Karanganyar | 856 198 | 864 021 | 871 596 | 879 078 | 886 519 |
| 14. Sragen | 879 027 | 882 090 | 885 122 | 887 889 | 890 518 |
| 15. Grobogan | 1 351 429 | 1 358 404 | 1 365 207 | 1 371 610 | 1 377 788 |
| 16. Blora | 852 108 | 855 573 | 858 865 | 862 110 | 865 013 |
| 17. Rembang | 619 173 | 624 096 | 628 922 | 633 584 | 638 188 |
| 18. Pati | 1 232 889 | 1 239 989 | 1 246 691 | 1 253 299 | 1 259 590 |
| 19. Kudus | 831 303 | 841 499 | 851 478 | 861 430 | 871 311 |
| 20. Jepara | 1 188 289 | 1 205 800 | 1 223 198 | 1 240 600 | 1 257 912 |
| 21. Demak | 1 117 905 | 1 129 298 | 1 140 675 | 1 151 796 | 1 162 805 |
| 22. Semarang | 1 000 887 | 1 014 198 | 1 027 489 | 1 040 629 | 1 053 786 |
| 23. Temanggung | 745 825 | 752 486 | 759 128 | 765 594 | 772 018 |
| 24. Kendal | 942 283 | 949 682 | 957 024 | 964 106 | 971 086 |
| 25. Batang | 743 090 | 749 720 | 756 079 | 762 377 | 768 583 |
| 26. Pekalongan | 873 986 | 880 092 | 886 197 | 891 892 | 897 711 |
| 27. Pemalang | 1 288 577 | 1 292 609 | 1 296 281 | 1 299 724 | 1 302 813 |
| 28. Tegal | 1 424 891 | 1 429 386 | 1 433 515 | 1 437 225 | 1 440 698 |
| 29. Brebes | 1 781 379 | 1 788 880 | 1 796 004 | 1 802 829 | 1 809 096 |
| 30. Kota Magelang | 120 792 | 121 112 | 121 474 | 121 872 | 122 111 |
| 31. Kota Surakarta | 512 226 | 514 171 | 516 102 | 517 887 | 519 587 |
| 32. Kota Salatiga | 183 815 | 186 420 | 188 928 | 191 571 | 194 084 |
| 33. Kota Semarang | 1 701 114 | 1 729 083 | 1 757 686 | 1 786 114 | 1 814 110 |
| 34. KotaPekalongan | 296 404 | 299 222 | 301 870 | 304 477 | 307 097 |
| 35. Kota Tegal | 246 119 | 247 212 | 248 094 | 249 003 | 249 905 |

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| **No** | **Ukuran** | **Dengan rumus** | **Dengan syntax R** |
| 1 | Mean | jumlah = sum(nama\_data$`kolom`)  banyak = length(nama\_data$`kolom`)  mean = jumlah/banyak  mean | mean(nama\_data$`kolom`) |
| 2 | Median | ManMedian <- function(b){  b <- sort(b)  if(length(b) %% 2 == 0){  index <- length(b)/2  (b[index]+b[index+1])/2  }  else{  b[(length(b)+1)/2]  }  }  ManMedian(nama\_data$`kolom`) | median(nama\_data$`kolom`) |
| 3 | Modus | modus\_man <- function(b) {  new <- unique(b)  new[which.max(tabulate(match(b, new)))]  }  modus\_man(nama\_data$`kolom`) | modus\_man <- function(b) {  new <- unique(b)  new[which.max(tabulate(match(b, new)))]  }  modus\_man(nama\_data$`kolom`) |
| 4 | Varians | mean <- mean(nama\_data$`kolom`)  VarianMan <- sum((nama\_data$`kolom` -mean)^2/((length(nama\_data$`kolom`))-1))  VarianMan | var(nama\_data$`kolom`) |
| 5 | Standar deviasi | mean <- mean(nama\_data$`kolom`)  VarianMan <- sum((nama\_data$`kolom`-mean)^2/((length(nama\_data$`kolom`))-1))  sqrt(VarianMan) | sd(nama\_data$`kolom`) |

1. Generate data sebanyak 100.000 data

dataB <- sample(1:100,100000, replace = TRUE)



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| --- | --- | --- | --- |
| **No** | **Ukuran** | **Dengan rumus** | **Dengan syntax R** |
| 1 | Mean | Jumlah\_B <- sum(dataB)  Banyak\_B <- length(dataB)  Mean\_B <- Jumlah\_B/ Banyak\_B | mean(dataB) |
| 2 | Median | ManMedian <- function(b){  b <- sort(b)  if(length(b) %% 2 == 0){  index <- length(b)/2  (b[index]+b[index+1])/2  }  else{  b[(length(b)+1)/2]  }  }  ManMedian(dataB) | median(dataB) |
| 3 | Modus | modus\_man <- function(b) {  new <- unique(b)  new[which.max(tabulate(match(b, new)))]  }  modus\_man(dataB) | modus\_man <- function(b) {  new <- unique(b)  new[which.max(tabulate(match(b, new)))]  }  modus\_man(dataB) |
| 4 | Varians | mean <- mean(dataB)  VarianMan <- sum((dataB-mean)^2/((length(dataB))-1))  VarianMan | var(dataB) |
| 5 | Standar deviasi | mean <- mean(dataB)  VarianMan <- sum((dataB-mean)^2/((length(dataB))-1))  sqrt(VarianMan) | sd(dataB) |