2020/11/06(五), 109 學年第一學期 資料科學應用 R 作業(2)

學號:A107260072　　姓名: 虞依婕

```
> #ex1.13
> lm.obj <- lm(airquality$Wind ~ airquality$Temp)
> lm.anova <- anova(lm.obj)
> str(lm.anova)
Classes ‘anova’ and 'data.frame':   2 obs. of  5 variables:
 $ Df      : int  1 151
 $ Sum Sq : num  396 1491
 $ Mean Sq: num  395.71 9.87
 $ F value: num  40.1 NA
 $ Pr(>F) : num  2.64e-09 NA
 - attr(*, "heading")= chr [1:2] "Analysis of Variance Table\n" "Response:
airquality$Wind"
>
> #ex1.20
> mydata <- read.delim("data/statlog_vehicle_846x18.txt")
> attributes(mydata)
$names
 [1] "no"                "class"
 [3] "compactness"       "circularity"
 [5] "distance"          "radiusratio"
 [7] "pr.axis"           "max.length"
 [9] "scatterratio"      "elongatedness"
[11] "pr.axis.1"         "max.length.1"
[13] "scaledvmi"         "scaledvma"
[15] "scaledradius"      "skewness"
[17] "skewness.1"        "kurtosis"
[19] "kurtosis.1"        "hollows"

$class
[1] "data.frame"

$row.names
  [1]   1   2   3   4   5   6   7   8   9  10  11
 [12]  12  13  14  15  16  17  18  19  20  21  22
```

[23] 23 24 25 26 27 28 29 30 31 32 33
[34] 34 35 36 37 38 39 40 41 42 43 44
[45] 45 46 47 48 49 50 51 52 53 54 55
[56] 56 57 58 59 60 61 62 63 64 65 66
[67] 67 68 69 70 71 72 73 74 75 76 77
[78] 78 79 80 81 82 83 84 85 86 87 88
[89] 89 90 91 92 93 94 95 96 97 98 99
[100] 100 101 102 103 104 105 106 107 108 109 110
[111] 111 112 113 114 115 116 117 118 119 120 121
[122] 122 123 124 125 126 127 128 129 130 131 132
[133] 133 134 135 136 137 138 139 140 141 142 143
[144] 144 145 146 147 148 149 150 151 152 153 154
[155] 155 156 157 158 159 160 161 162 163 164 165
[166] 166 167 168 169 170 171 172 173 174 175 176
[177] 177 178 179 180 181 182 183 184 185 186 187
[188] 188 189 190 191 192 193 194 195 196 197 198
[199] 199 200 201 202 203 204 205 206 207 208 209
[210] 210 211 212 213 214 215 216 217 218 219 220
[221] 221 222 223 224 225 226 227 228 229 230 231
[232] 232 233 234 235 236 237 238 239 240 241 242
[243] 243 244 245 246 247 248 249 250 251 252 253
[254] 254 255 256 257 258 259 260 261 262 263 264
[265] 265 266 267 268 269 270 271 272 273 274 275
[276] 276 277 278 279 280 281 282 283 284 285 286
[287] 287 288 289 290 291 292 293 294 295 296 297
[298] 298 299 300 301 302 303 304 305 306 307 308
[309] 309 310 311 312 313 314 315 316 317 318 319
[320] 320 321 322 323 324 325 326 327 328 329 330
[331] 331 332 333 334 335 336 337 338 339 340 341
[342] 342 343 344 345 346 347 348 349 350 351 352
[353] 353 354 355 356 357 358 359 360 361 362 363
[364] 364 365 366 367 368 369 370 371 372 373 374
[375] 375 376 377 378 379 380 381 382 383 384 385
[386] 386 387 388 389 390 391 392 393 394 395 396
[397] 397 398 399 400 401 402 403 404 405 406 407
[408] 408 409 410 411 412 413 414 415 416 417 418
[419] 419 420 421 422 423 424 425 426 427 428 429
[430] 430 431 432 433 434 435 436 437 438 439 440

[441] 441 442 443 444 445 446 447 448 449 450 451
[452] 452 453 454 455 456 457 458 459 460 461 462
[463] 463 464 465 466 467 468 469 470 471 472 473
[474] 474 475 476 477 478 479 480 481 482 483 484
[485] 485 486 487 488 489 490 491 492 493 494 495
[496] 496 497 498 499 500 501 502 503 504 505 506
[507] 507 508 509 510 511 512 513 514 515 516 517
[518] 518 519 520 521 522 523 524 525 526 527 528
[529] 529 530 531 532 533 534 535 536 537 538 539
[540] 540 541 542 543 544 545 546 547 548 549 550
[551] 551 552 553 554 555 556 557 558 559 560 561
[562] 562 563 564 565 566 567 568 569 570 571 572
[573] 573 574 575 576 577 578 579 580 581 582 583
[584] 584 585 586 587 588 589 590 591 592 593 594
[595] 595 596 597 598 599 600 601 602 603 604 605
[606] 606 607 608 609 610 611 612 613 614 615 616
[617] 617 618 619 620 621 622 623 624 625 626 627
[628] 628 629 630 631 632 633 634 635 636 637 638
[639] 639 640 641 642 643 644 645 646 647 648 649
[650] 650 651 652 653 654 655 656 657 658 659 660
[661] 661 662 663 664 665 666 667 668 669 670 671
[672] 672 673 674 675 676 677 678 679 680 681 682
[683] 683 684 685 686 687 688 689 690 691 692 693
[694] 694 695 696 697 698 699 700 701 702 703 704
[705] 705 706 707 708 709 710 711 712 713 714 715
[716] 716 717 718 719 720 721 722 723 724 725 726
[727] 727 728 729 730 731 732 733 734 735 736 737
[738] 738 739 740 741 742 743 744 745 746 747 748
[749] 749 750 751 752 753 754 755 756 757 758 759
[760] 760 761 762 763 764 765 766 767 768 769 770
[771] 771 772 773 774 775 776 777 778 779 780 781
[782] 782 783 784 785 786 787 788 789 790 791 792
[793] 793 794 795 796 797 798 799 800 801 802 803
[804] 804 805 806 807 808 809 810 811 812 813 814
[815] 815 816 817 818 819 820 821 822 823 824 825
[826] 826 827 828 829 830 831 832 833 834 835 836
[837] 837 838 839 840 841 842 843 844 845 846

```
> memory.size(mydata)
Error in memory.size(mydata) : 引數不正確
> head(mydata)
  no class compactness circularity distance
1  1     0          96          55      103
2  2     0         101          56      100
3  3     0          93          35       66
4  4     0         101          48      107
5  5     0          87          38       85
6  6     0          95          48      104
  radiusratio pr.axis max.length scatterratio
1         201      65          9          204
2         215      69         10          208
3         154      59          6          142
4         222      68         10          208
5         177      61          8          164
6         214      67          9          205
  elongatedness pr.axis.1 max.length.1 scaledvmi
1            32         23          166       227
2            32         24          169       227
3            46         18          128       162
4            32         24          154       232
5            40         20          129       186
6            32         23          151       227
  scaledvma scaledradius skewness skewness.1
1       624          246       74          6
2       651          223       74          6
3       304          120       64          5
4       641          204       70          5
5       402          130       63          1
6       628          202       74          5
  kurtosis kurtosis.1 hollows
1        2        186      194
2        5        186      193
3       13        197      202
4       38        190      202
5       25        198      205
6        9        186      193
```

```
> str(data)
function (..., list = character(), package = NULL,
        lib.loc = NULL, verbose = getOption("verbose"),
        envir = .GlobalEnv, overwrite = TRUE)
>
> #ex1.28
> mydata <- read.delim("data/stock-data.txt")
> head(mydata)
   民國 100 年 5 家半導體公司股票月成交資訊.元.股.
1                                                半導體公司
2                                                    台積電
3                                                    台積電
4                                                    台積電
5                                                    台積電
6                                                    台積電
       X    X.1       X.2       X.3           X.4          X.5
1  年度   月份  最高價  最低價  加權平均價  成交筆數
2   100       1     78.3     69.6          74.3    263,999
3   100       2       77     69.9         72.54    235,159
4   100       3     72.2     65.7         69.74    276,434
5   100       4     73.9       68         71.37    211,611
6   100       5     76.9       73         74.96    213,185
                    X.6               X.7              X.8
1            成交金額          成交股數  週轉率百分比
2 100,578,274,926 1,353,616,348              5.22
3   74,985,055,548 1,033,654,452              3.98
4   88,459,924,495 1,268,289,393              4.89
5   70,177,023,098     983,177,475             3.79
6   74,005,599,560     987,256,484              3.8
> str(data)
function (..., list = character(), package = NULL,
        lib.loc = NULL, verbose = getOption("verbose"),
        envir = .GlobalEnv, overwrite = TRUE)
>
> #ex1.33
> Dates <- c("0924", "1112", "1231", "1105", "0604", "0219", "0416", "0611", "0813",
"1029")
> Time <- c("01:00", "04:00", "16:00", "23:00", "08:00", "09:00", "07:00", "17:00",
```

"03:00", "14:00")
> Items <- c("shirt", "shirt", "pants", "jacket", "jacket", "shirt", "jacket", "jacket", "shoes", "shirt")
> Volume <- c("7951", "159,1958", "6848", "3762", "3678", "8696", "9045", "6208", "1425")
> mySale <- paste(Dates, Time, Items, Volume)
>