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## distinct colors (at least 11) for a non-ggplot cluster plot



Ok, I think, this is a challenge! I spent hours on this and want to give this a last try as I was hitting a road block.

I am plotting a cluster plot that looks something like this (I just realized that I can't post an image. So, here is my dataframe and command that I am using).

Data frame for reproducibility:

```
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7L, 6L, 10L, 11L, 7L, 14L, 1L, 14L, 3L, 6L, 10L, 3L, 11L,
14L, 14L, 14L, 14L, 14L, 6L, 3L, 14L, 14L, 10L, 3L, 11L,
11L, 4L, 3L, 10L, 10L, 14L, 14L, 3L, 14L, 3L, 3L, 14L, 6L,
11L, 14L, 14L, 11L, 3L, 11L, 1L, 1L, 12L, 6L, 14L, 14L, 1L,
3L, 14L, 1L, 14L, 3L, 11L, 14L, 3L, 11L, 10L, 14L, 6L, 11L,
10L, 4L, 1L, 11L, 14L, 14L, 3L, 14L, 7L, 14L, 11L, 11L, 7L,
14L, 11L, 4L, 14L, 10L, 14L, 10L, 4L, 14L, 14L, 3L, 1L, 14L,
14L, 4L, 10L, 3L, 10L, 6L, 14L, 12L, 11L, 14L, 14L, 11L,
11L, 6L, 14L, 14L, 10L, 11L, 4L, 14L, 2L, 14L, 14L, 11L,
14L, 3L, 14L, 1L, 14L, 14L, 14L, 14L, 3L, 14L, 11L, 3L, 14L,
2L, 6L, 1L, 3L, 11L, 14L, 14L, 14L, 11L, 10L, 3L, 14L, 10L,
14L, 6L, 14L, 11L, 3L, 10L, 10L, 14L, 3L, 1L, 3L, 14L, 12L,
14L, 14L, 3L, 14L, 11L, 14L, 14L, 10L, 14L, 14L, 6L, 11L,
14L, 10L, 10L, 3L, 3L, 11L, 1L, 3L, 14L, 14L, 4L, 3L, 14L,
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1L, 3L, 14L, 3L, 2L, 6L, 14L, 14L, 14L, 10L, 14L, 3L), brgroupttl = c("CA1",
"O N", "O N", "R", "O S1", "R", "O Br", "O Br", "O N", "O Br",
"O H", "O S1", "O N", "O N", "O H", "O Fr", "O H", "O H",
"O Br", "O Br", "O Br", "O S1", "O N", "O H", "O Br", "O Br",
"O Br", "R", "O N", "R", "O H", "O Br", "R", "O Br", "O Br",
"O N", "O H", "O Br", "O H", "R", "CA1", "O Br", "L4", "O H",
"O Br", "R", "O H", "O N", "O H", "R", "O Br", "O N", "O Br",
"O Br", "O S1", "L4", "O Br", "O N", "O Br", "O N", "O Br",
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"O H", "R", "Mr", "CA1", "O H", "O Br", "O H", "O H", "O N",
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"O Br", "O H", "Mr", "R", "O H", "O N", "O Br", "O Br", "O Br",
"O Br", "O Br", "Mr", "O H", "O Br", "O Br", "R", "O H",
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"O N", "O H", "O N", "O S1", "O S1", "Occ", "Mr", "O Br",
"O Br", "O S1", "O H", "O Br", "O S1", "O Br", "O H", "O N",
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"O N", "O N", "Pr", "O Br", "O N", "CA1", "O Br", "R", "O Br",
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"O Br", "O Br", "O N", "R", "O H", "O Br", "R", "O Br", "Mr",
"O Br", "O N", "O H", "R", "R", "O Br", "O H", "O S1", "O H",
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"O Br", "R", "O Br", "O Br", "Mr", "O N", "O Br", "R", "R",
"O H", "O H", "O N", "O S1", "O H", "O Br", "O Br", "CA1",
"O H", "O Br", "Occ", "O H", "Occ", "O N", "O Br", "O Br",
"O Br", "R", "O S1", "O N", "O N", "O H", "O S1", "O H",
"O Br", "O H", "L4", "Mr", "O Br", "O Br", "O Br", "R", "O Br",
"O H")), .Names = c("PC1", "PC2", "PC3", "PC4", "cluster",
"brgroupnum", "brgroupttl"), row.names = c(12L, 235L, 421L, 534L,
344L, 579L, 112L, 940L, 236L, 708L, 246L, 339L, 234L, 253L, 854L,
661L, 643L, 782L, 942L, 723L, 998L, 354L, 226L, 832L, 244L, 659L,
180L, 545L, 94L, 610L, 804L, 147L, 485L, 80L, 946L, 656L, 631L,
989L, 800L, 498L, 35L, 901L, 459L, 248L, 697L, 590L, 169L, 72L,
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213L, 947L, 819L, 404L, 460L, 605L, 430L, 71L, 927L, 507L, 984L,
833L, 562L, 397L, 40L, 780L, 702L, 818L, 853L, 426L, 688L, 474L,
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735L, 886L, 382L, 687L, 127L, 888L, 517L, 794L, 613L, 105L, 10L,
170L, 549L, 609L, 976L, 663L, 684L, 1003L, 683L, 628L, 934L,
415L, 273L, 744L, 669L, 274L, 21L, 87L, 346L, 317L, 373L, 396L,
113L, 297L, 475L, 768L, 910L, 318L, 111L, 796L, 428L, 903L, 842L,
225L, 540L, 938L, 413L, 254L, 539L, 38L, 343L, 654L, 219L, 107L,
644L, 139L, 51L, 709L, 277L, 240L, 33L, 705L, 268L, 14L, 142L,
570L, 922L, 491L, 11L, 929L, 741L, 629L, 331L, 988L, 118L, 20L,
486L, 78L, 569L, 392L, 859L, 5L, 224L, 201L, 971L, 57L, 650L,
381L, 732L, 836L, 577L, 309L, 16L, 982L, 429L, 183L, 936L, 230L,
165L, 74L, 969L, 444L, 986L, 912L, 863L, 159L, 805L, 933L, 616L,
771L, 133L, 447L, 407L, 335L, 789L, 422L, 964L, 716L, 301L, 93L,
594L, 835L, 999L, 522L, 121L, 611L, 135L, 751L, 785L, 560L, 581L,
664L, 640L, 348L, 673L, 914L, 82L, 179L, 839L, 638L, 134L, 621L,
860L, 665L, 488L, 733L, 119L, 380L, 314L, 288L, 512L, 493L, 758L,
76L, 626L, 473L, 376L, 950L, 202L, 43L, 831L, 954L, 4L, 852L,
375L, 152L, 887L, 862L, 879L, 525L, 351L, 270L, 229L, 844L, 330L,
783L, 869L, 759L, 431L, 388L, 987L, 974L, 727L, 552L, 911L, 779L
), class = "data.frame")

```

command:

```

library(cluster)
plotcluster(ctsubset[,1:4],ctsubset$cluster,cex=0.8,
  col = factor(ctsubset$brgroupnum),
  main="clusters and groups")
legend("bottomright",

```

```
legend = unique(ctsubset$brgroupttl),pch=19,
cex=0.7, col=unique(factor(ctsubset$brgroupnum)))
```

The problem I have is with the colors. As you can see the green, red, black are repeated in the legend and I am not able to distinctly visualize the different groups (as encoded by `$groupnum`).

The alternatives that I tried but was not successful (because I don't understand them very well) is using (1) color brewer (2) `colorRampPalette` and (3) `grid.raster`

All I care is to be able to see the nice distinction of colors in my legend and the plot.

r plot

edited Apr 3 '13 at 17:12



joran

80.4k 10 154 209

asked Apr 3 '13 at 17:07



user2105887

5 5

1 Thanks for provided data, but where is the function `plotcluster` ? – joran Apr 3 '13 at 17:13

## 1 Answer

Change `col=factor(ctsubset$brgroupnum)` for 11 values from `colors()`

You can see the colours with a code I made long time ago:

```
cores <- function() {
  par(mar=c(0,0,0,0),mgp=c(0,0,0))
  plot(c(0:24),type='n')
  c <- 0

  mouse <- function(b, x, y) {
    x <- as.integer(x*26)
    y <- as.integer(y*26)
    print(colors()[x+26*y] %% 657 + 1])
    return()
  }
  k <- colours()[1:(26^2 - 1) %% 657 + 1]
  for (i in 1:26) {
    for (j in 1:26) {
      c <- c+1
      polygon(c(j,j,j-1,j-1),c(i,i-1,i-1,i)-1,col=k[(c-1) %% 657 + 1])
    }
  }
  getGraphicsEvent('Click on a colour!',onMouseDown=mouse)
}
cores()
```

You can, also, use `rainbow(11)` .

edited Apr 3 '13 at 17:28

answered Apr 3 '13 at 17:13



Rcoaster

1,983 3 23

gr8 thanks! I see more options now. BTW, the event handling is not working on my machine when i run the `cores()`. But can you give an example for how i can automatically map the `ctsubset$brgroupnum` to the 11 colors!? because i am plotting the clusters and colors and labels with the rownames as ID, so i don't have to do it manually – user2105887 Apr 3 '13 at 17:51