R 暑假第一次作业

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```
#前五人的题目
#一
#1
name1 = c("zhangsan","lisi","wangwu","zhaoliu")
height1 = c(170,165,178,174)
weight1 = c(50,60,59,62)
age1 = c(13,18,45,32)
data1=data.frame(name1,height1,weight1,age1)
weight1 = as.factor(weight1)
```

	name1	height1	weight1	age1
1	zhangsan	170	50	13
2	lisi	165	60	18
3	wangwu	178	59	45
4	zhaoliu	174	62	32

```
> weight1
[1] 50 60 59 62
Levels: 50 59 60 62
```

```
#2
weight1 = as.numeric(as.character(weight1))
```

```
> weight1 = as.numeric(as.character(weight1))
> weight1
[1] 50 60 59 62
```

```
#3
average.height = mean(data1[data1[,4]<20,2])
average.weight = mean(data1[data1[,4]>20,3])
```

```
> average.height
[1] 167.5
> average.weight
[1] 60.5
```

```
#二
#1
name2 = c("xiaozhang","xiaoli","xiaowang","xiaoye")
mark2 = c(90,87,54,51)
data2 = data.frame(name2,mark2)
for(i in 1:length(name2))
{
  if (data2[i,2]<60)
  {
    print (data2[i,1])
  }
}
```

	name2	mark2
1	xiaozhang	90
2	xiaoli	87
3	xiaowang	54
4	xiaoye	51

```
> for(i in 1:length(name2))
+ {
+   if (data2[i,2]<60)
+   {
+     print (data2[i,1])
+   }
+ }
[1] xiaowang
Levels: xiaoli xiaowang xiaoye xiaozhang
[1] xiaoye
Levels: xiaoli xiaowang xiaoye xiaozhang
```

```
#2
xiaofen.mark = c(87,70)
xiaolu.mark = c(76,85)
xiaofen.finalmark = xiaofen.mark[1]*0.6+xiaofen.mark[2]*0.4
xiaolu.finalmark = xiaolu.mark[1]*0.6+xiaolu.mark[2]*0.4
```

```
> xiaofen.finalmark
[1] 80.2
> xiaolu.finalmark
[1] 79.6
```

```
#3
day1=c("mon","tue","wen")
day2=c(day1,"thu","fri")
```

```
> day1
[1] "mon" "tue" "wen"
> day2
[1] "mon" "tue" "wen" "thu" "fri"
```

```
#三
#1
name3=c("lieren","shushi","saman")
weight3=c(65,70,85)
height3 = c(180,180,210)
data3 = data.frame(name=name3,weight=weight3,height=height3)
```

	name	weight	height
1	lieren	65	180
2	shushi	70	180
3	saman	85	210

```r
#2
name3=c(name3,"fashi")
weight3=c(weight3,45)
height3=c(height3,165)
data3 = data.frame(name=name3,weight=weight3,height=height3)
```

	name	weight	height
1	lieren	65	180
2	shushi	70	180
3	saman	85	210
4	fashi	45	165

```r
#3
data3=data3[-2,]
```

	name	weight	height
1	lieren	65	180
3	saman	85	210
4	fashi	45	165

```r
#四
#1
name4=c("A","B","C","D")
gender4=c("Male","Female","FeMale","Male")
add.mark4 = c("Yes","Yes","No","No")
mark4=c(58,59,85,90)
data4=data.frame(name4,gender4,add.mark4,mark4)
for (i in 1:length(name4))
{
  if (data4[i,4]<60&data4[i,3]=="Yes")
  {
    data4[i,4]=data4[i,4]+10
  }
}
for (i in 1:length(name4))
{
  if (data4[i,4]>80&data4[i,2]=="Male")
  {
    data4[i,4]=data4[i,4]-5
  }
}
```

	name4	gender4	add.mark4	mark4
1	A	Male	Yes	58
2	B	Female	Yes	59
3	C	FeMale	No	85
4	D	Male	No	90

	name4	gender4	add.mark4	mark4
1	A	Male	Yes	68
2	B	Female	Yes	69
3	C	FeMale	No	85
4	D	Male	No	85

```
#2
name4=c(name4,"E")
gender4=c(gender4,"Female")
add.mark4=c(add.mark4,"No")
mark4=c(mark4,89)
data4=data.frame(name4,gender4,add.mark4,mark4)
```

	name4	gender4	add.mark4	mark4
1	A	Male	Yes	58
2	B	Female	Yes	59
3	C	FeMale	No	85
4	D	Male	No	90
5	E	Female	No	89

```
#3
attend.activity4=rep(0,length(name4))
data4=cbind(data4,attend.activity4)
for (i in 1:length(name4))
{
  if (data4[i,2]=="Female")
  {
    data4[i,5]="Yes"
  }else
  {
    data4[i,5]="No"
  }
}
```

	name4	gender4	add.mark4	mark4	attend.activity4
1	A	Male	Yes	58	No
2	B	Female	Yes	59	Yes
3	C	FeMale	No	85	No
4	D	Male	No	90	No
5	E	Female	No	89	Yes

```
#五
#1
score=c(61,75,90,82,NA)
score=c(score[1:4],mean(score[1:4]))

> score
[1] 61 75 90 82 77
```

```r
#2
score1=rep(score, c(4,2,1,4,2))
```

```
> score1
 [1] 61 61 61 61 75 75 90 82 82 82 82 77 77
```

```r
#3
score.daily = c(30,24,33,28,25)
score2=score*0.7+score.daily
```

```
> score2
[1] 72.7 76.5 96.0 85.4 78.9
```

```r
#后五位同学题目
#一
#1
name = c("A","B","C","D")
gender = c("F","F","M","M")
situp = c(30,55,55,70)
run = c(11,13,10,9)
longjump = c(2,2.5,3.5,4)
summer.test2016 = data.frame(name,gender,situp,run,longjump)
```

	name	gender	situp	run	longjump
1	A	F	30	11	2.0
2	B	F	55	13	2.5
3	C	M	55	10	3.5
4	D	M	70	9	4.0

```r
#2
#没用函数（第一节课没学嘛）
girl.test2016 = summer.test2016[gender== "F",]
girl.test2016[,3] = 100-(60 - girl.test2016[,3])
girl.test2016[,4] = 100-(girl.test2016[,4] - 10)*10
girl.test2016[,5] = 100-(3 - girl.test2016[,5])/0.5*10

boy.test2016 = summer.test2016[gender== "M",]
boy.test2016[,3] = 100-(70 - boy.test2016[,3])
boy.test2016[,4] = 100-(boy.test2016[,4] - 9)*10
boy.test2016[,5] = 100-(4.5 - boy.test2016[,5])/0.5*10

summer.mark2016 = rbind(girl.test2016,boy.test2016)
finalmark = rep(0,4)
summer.mark2016 = cbind(summer.mark2016,finalmark)
summer.mark2016[,6] = (summer.mark2016[,3]+summer.mark2016[,4]+summer.mark2016[,5])/3
```

	name	gender	situp	run	longjump	finalmark
1	A	F	70	90	80	80.00000
2	B	F	95	70	90	85.00000
3	C	M	85	90	80	85.00000
4	D	M	100	100	90	96.66667

```r
#3
summer.test2016[name == "C" , 3]= 69
summer.mark2016[name == "C" , 3]= 100-(70-69)
summer.mark2016[name == "C" , 6]= (summer.mark2016[name == "C" , 3]+
summer.mark2016[name == "C" , 4]+summer.mark2016[name == "C" , 5])/3-5
```

	name	gender	situp	run	longjump	finalmark
1	A	F	70	90	80	80.00000
2	B	F	95	70	90	85.00000
3	C	M	99	90	80	84.66667
4	D	M	100	100	90	96.66667

```r
#二
#1
xiaoming.height = 165
xiaoming.height=xiaoming.height*(1+0.3)
```

```
> xiaoming.height
[1] 214.5
```

```r
#2
names=c("aa","bb","cc","dd")
weight=c(65,66,64,63)
data5=data.frame(names,weight)
```

	names	weight
1	aa	65
2	bb	66
3	cc	64
4	dd	63

```r
#3
tmp=seq(1,4,1)
result=10*10^tmp
```

```
> result
[1] 1e+02 1e+03 1e+04 1e+05
```

```r
#三
#1
seq(1,100,1)
seq(2,100,2)
rep(1:3,c(3,2,4))
```

```
> seq(1,100,1)
  [1]   1   2   3   4   5   6   7   8   9  10  11  12  13  14  15  16  17  18  19  20  21  22  23
 24  25  26  27  28
 [29]  29  30  31  32  33  34  35  36  37  38  39  40  41  42  43  44  45  46  47  48  49  50  51
 52  53  54  55  56
 [57]  57  58  59  60  61  62  63  64  65  66  67  68  69  70  71  72  73  74  75  76  77  78  79
 80  81  82  83  84
 [85]  85  86  87  88  89  90  91  92  93  94  95  96  97  98  99 100
> seq(2,100,2)
 [1]   2   4   6   8  10  12  14  16  18  20  22  24  26  28  30  32  34  36  38  40  42  44  46
 48  50  52  54  56
[29]  58  60  62  64  66  68  70  72  74  76  78  80  82  84  86  88  90  92  94  96  98 100
> rep(1:3,c(3,2,4))
[1] 1 1 1 2 2 3 3 3 3
```

```r
#2(1)
name6=c("xiaoli","xiaowang","xiaohong")
height6=c(188,177,166)
data6=data.frame(name=name6,height=height6)
```

	name	height
1	xiaoli	188
2	xiaowang	177
3	xiaohong	166

```r
#2(2)
score6=c(66,77,88)
data6=data.frame(data6,score=score6)
```

	name	height	score
1	xiaoli	188	66
2	xiaowang	177	77
3	xiaohong	166	88

```r
#2(3)
height6=as.numeric(height6)
score6=as.numeric(score6)
```

```
> height6
[1] 188 177 166
> score6
[1] 66 77 88
```

```r
#2(4)
data6[1,3]=99
```

	name	height	score
1	xiaoli	188	99
2	xiaowang	177	77
3	xiaohong	166	88

```r
#3(1)
for (i in 1:length(name6))
{
  if (data6[i,3]==min(data6[1:length(name6),3]))
  {
    print(data6[i,1])
  }
}
```

```
[1] xiaowang
Levels: xiaohong xiaoli xiaowang
```

```
#3(2)
for (i in 1:length(name6))
{
  if (data6[i,2]==max(data6[1:length(name6),2]))
  {
    print(data6[i,1])
  }
}
```

```
[1] xiaoli
Levels: xiaohong xiaoli xiaowang
```

```
#3(3)
for (i in 1:length(name6))
{
  if (data6[i,2]>170&data6[i,3]>=60)
  {
    print(data6[i,1])
  }
}
```

```
[1] xiaoli
Levels: xiaohong xiaoli xiaowang
[1] xiaowang
Levels: xiaohong xiaoli xiaowang
```

```
#四
#1
gender7 = c("F","F","F","F","F","M","M","M","M","M")
height7 = c(150,155,163,166,168,170,177,180,185,190)
weight7 = c(40,44,50,55,46,60,65,90,70,90)
data7 = data.frame(gender7,height7,weight7)
for (i in 1:length(gender7))
{
  if (data7[i,1]=="F")
  {
    if (data7[i,2]>165&data7[i,3]<50)
    {
      print(data7[i,])
    }
  }
}

for(i in 1:length(gender7))
{
  if (data7[i,1]=="M")
  {
    if(data7[i,2]>180&data7[i,3]<80)
    {
      print(data7[i,])
    }
  }
}
```

```
  gender7 height7 weight7
5       F     168      46

  gender7 height7 weight7
9       M     185      70
```

```r
#2
stars.name = c("Jason Statham","Vin Diesel","Dwayne Johnson","Will Smith")
stars.name= tolower(stars.name)
```

```
> stars.name
[1] "jason statham"  "vin diesel"     "dwayne johnson" "will smith"
```

```r
#3(利用矩阵计算)
left.matrix = matrix(c(1,1,2,4),nrow = 2,byrow = TRUE)
right.matrix = matrix(c(30,88),nrow = 2)
chicken.rabbit = solve(left.matrix,right.matrix)
```

```
> left.matrix
     [,1] [,2]
[1,]    1    1
[2,]    2    4
> right.matrix
     [,1]
[1,]   30
[2,]   88
> chicken.rabbit
     [,1]
[1,]   16
[2,]   14
```