

PRACTICAL 3

R Programming

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> # Question 1
> q1 = c(8,10,12,20,18,20,22)
> q1 = q1/100
> result1 = q1*7000
> print(result1)
[1] 560 700 840 1400 1260 1400 1540

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> # Question 2
> # saving the vectors column wise
> carpenters = c(1100,2050,1200,970)
> plumbers = c(1250,2320,1470,890)
> elec = c(1900,2200,1700,1150)
> total2 = carpenters + plumbers + elec
> total2 = sum(total2)
> print(total2)
[1] 18200
> res2i = total2*0.08
> print(res2i)
[1] 1456
> new2 = total2*0.12
> print(new2)
[1] 2184
> carp1 = new2*2/12
> plumb1 = new2*4/12
> elec1 = new2*6/12
> print(carp1)
[1] 364
> print(plumb1)
[1] 728
> print(elec1)
[1] 1092
> carpentersii = c(carp1*5/12, carp1*4/12, carp1*2/12, carp1*1/12)
> plumbersii = c(plumb1*5/12, plumb1*4/12, plumb1*2/12, plumb1*1/12)
> elecii = c(elec1*5/12, elec1*4/12, elec1*2/12, elec1*1/12)
> print(carpentersii)
[1] 151.66667 121.33333 60.66667 30.33333
> print(plumbersii)
[1] 303.33333 242.66667 121.33333 60.66667
> print(elecii)
[1] 455 364 182 91
> totalii = carpentersii + plumbersii + elecii
> print(totalii)
[1] 910 728 364 182

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> # Question 3
> q3i = range(c(0,10))
> q3ii = range(c(10,20))
> q3iii = range(c(20,30))
> q3iv = range(c(30,40))
> q3v = range(c(40,50))
> ca3 = c(q3i, q3ii, q3iii, q3iv, q3v)
> f3 <- c(14,23,27,21,15)
> ia3 = sum(f3)
> q3i = sum(q3i)/2
> q3ii = sum(q3ii)/2
> q3iii = sum(q3iii)/2
> q3iv = sum(q3iv)/2
> q3v = sum(q3v)/2
> x3 = c(q3i, q3ii, q3iii, q3iv, q3v)
> print(x3)
[1] 5 15 25 35 45
> fx3 = x3*f3
> print(fx3)
[1] 70 345 675 735 675
> fx3 = sum(fx3)
> me3 = fx3/ia3
> print(me3)
[1] 25
> fxme3 = abs(x3 - me3)
> print(fxme3)
[1] 20 10 0 10 20
> ffxme3 = f3*fxme3
> ffxme3 = sum(ffxme3)
> print(ffxme3)
[1] 1020
> v3 = ffxme3/ia3
> print(v3)
[1] 10.2

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> # Question 4
> random_table = c(40,18,59,49,26,2,53,37,44,5,27,16,52,36,10,48,55,38,43,32,8,19,21,3
3,12,5,6,39,42,29,51,41,50,7,13,47,28,4,11,35,20)
> flag = 0
> for(i in random_table){
+ if(flag < 10 & i <= 40){
+ flag = flag + 1
+ print(i)
+ }
+ else{next}
+ }
[1] 40
[1] 18
[1] 26
[1] 2
[1] 37
[1] 5
[1] 27
[1] 16
[1] 36
[1] 10
> # Question 4 ii
> flagii = 0
> for(i in random_table){
+ if(flagii < 7 & i <= 30){
+ flagii = flagii + 1
+ print(i)
+ }
+ else{next}
+ }
[1] 18
[1] 26
[1] 2
[1] 5
[1] 27
[1] 16
[1] 10

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> # Question 4 II
> q4 = factorial(40)
> q4i = factorial(10)*factorial(30)
> res4 = q4/q4i
> prob4 = 1/res4
> print(prob4)
[1] 1.179718e-09
> q4b = factorial(30)
> q4ii = factorial(7)*factorial(23)
> res4ii = q4b/q4ii
> print(res4ii)
[1] 2035800
> prob4ii = 1/res4ii
> print(prob4ii)
[1] 4.912074e-07
> # Question 5
> N = 500
> Ssq = 2.25
> q5 = c(10,11,12,13,14)
> f5 = c(3,12,18,12,3)
> ia5 = sum(f5)
> print(ia5)
[1] 48
> qf5 = q5*f5
> qf5 = sum(qf5)
> me5 = qf5/ia5
> print(me5)
[1] 12
> t5 = N - ia5
> t5i = N*ia5
> v5 = t5/t5i
> v6 = v5*2.25
> print(v6)
[1] 0.042375
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