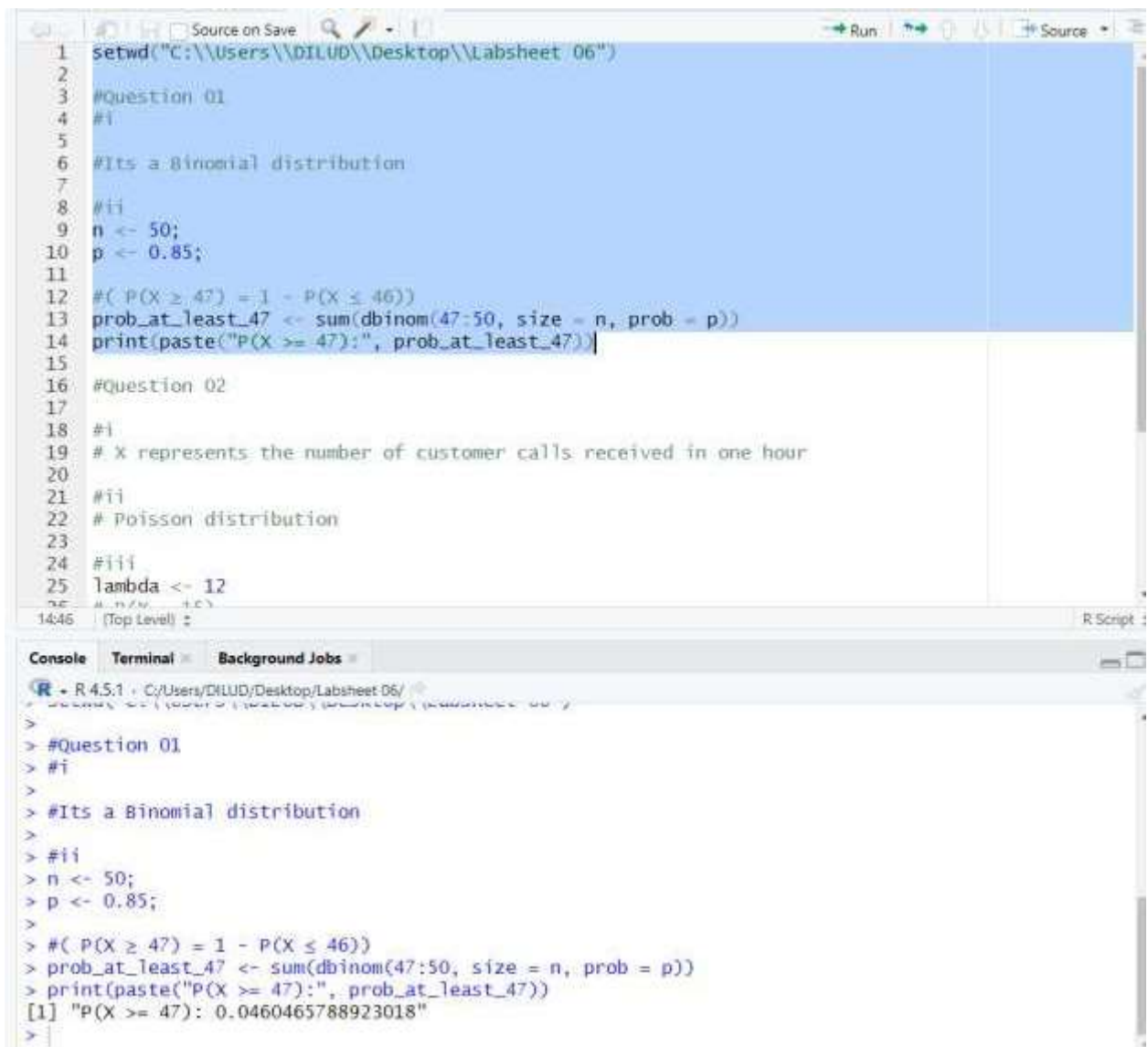


Fernando K.D.P.S

Labsheet 06



```
1 setwd("C:\\Users\\DILUD\\Desktop\\Labsheet 06")
2
3 #Question 01
4 #i
5
6 #Its a Binomial distribution
7
8 #ii
9 n <- 50;
10 p <- 0.85;
11
12 #( P(X ≥ 47) = 1 - P(X ≤ 46))
13 prob_at_least_47 <- sum(dbinom(47:50, size = n, prob = p))
14 print(paste("P(X ≥ 47):", prob_at_least_47))
15
16 #Question 02
17
18 #i
19 # X represents the number of customer calls received in one hour
20
21 #ii
22 # Poisson distribution
23
24 #iii
25 lambda <- 12
26 # P(X = 12) = e^(-lambda) * lambda^x / x!
27 # P(X ≤ 12) = sum(dpois(0:12, lambda = lambda))
28 # P(X ≥ 12) = 1 - P(X ≤ 11)
29 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
30 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
31 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
32 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
33 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
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60 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
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76 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
77 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
78 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
79 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
80 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
81 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
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97 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
98 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
99 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
100 # P(X ≥ 12) = 1 - sum(dpois(0:11, lambda = lambda))
```

14/6 (Top Level) | R Script

Console | Terminal | Background Jobs

R • R 4.5.1 • C:/Users/DILUD/Desktop/Labsheet 06/

```
>
> #Question 01
> #i
>
> #Its a Binomial distribution
>
> #ii
> n <- 50;
> p <- 0.85;
>
> #( P(X ≥ 47) = 1 - P(X ≤ 46))
> prob_at_least_47 <- sum(dbinom(47:50, size = n, prob = p))
> print(paste("P(X ≥ 47):", prob_at_least_47))
[1] "P(X ≥ 47): 0.0460465788923018"
>
```

```
Source on Save Run Source
11
12 #( P(X ≥ 47) = 1 - P(X ≤ 46))
13 prob_at_least_47 <- sum(dbinom(47:50, size = n, prob = p))
14 print(paste("P(X ≥ 47):", prob_at_least_47))
15
16 #Question 02
17
18 #i
19 # X represents the number of customer calls received in one hour
20
21 #ii
22 # Poisson distribution
23
24 #iii
25 lambda <- 12
26 # P(X = 15)
27 prob_15_calls <- dpois(15, lambda = lambda)
28 print(paste("P(X = 15):", prob_15_calls))
29
30
31
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36
29:1 (Top Level) R Scri

Console Terminal Background Jobs
R • R 4.5.1 • C:/Users/DILUD/Desktop/Labsheet 06/
> #Question 02
>
> #i
> # X represents the number of customer calls received in one hour
>
> #ii
> # Poisson distribution
>
> #iii
> lambda <- 12
> # P(X = 15)
> prob_15_calls <- dpois(15, lambda = lambda)
> print(paste("P(X = 15):", prob_15_calls))
[1] "P(X = 15): 0.0723911201466387"
> |
```