

Sri Lanka Institute of Information Technology



Lab Submission
Lab sheet No 06

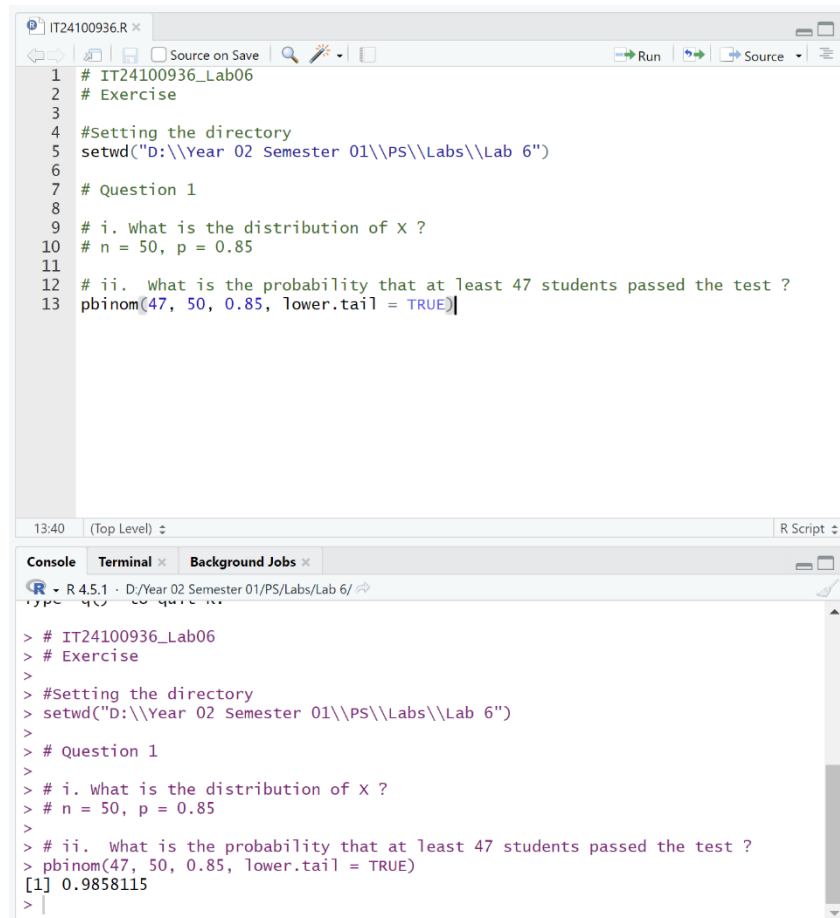
IT24100936

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Probability and Statistics | IT2120

B.Sc. (Hons) in Information Technology

Exercise

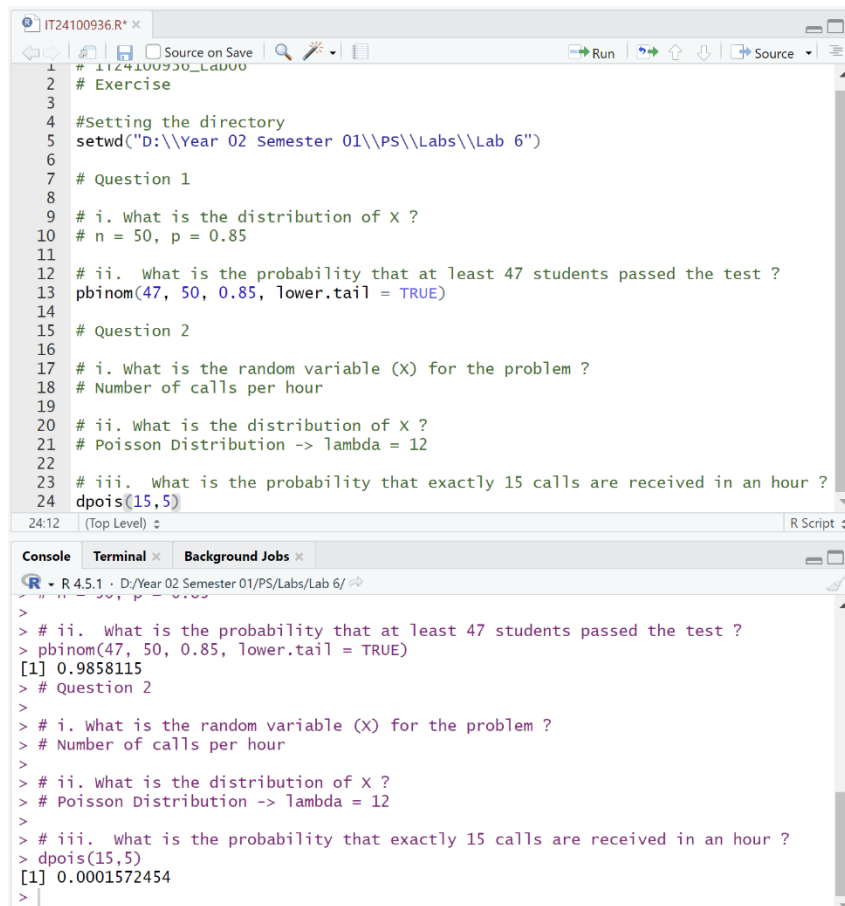


The screenshot shows the RStudio interface with a script editor and a console. The script editor contains the following code:

```
1 # IT24100936_Lab06
2 # Exercise
3
4 #Setting the directory
5 setwd("D:\\Year 02 Semester 01\\PS\\Labs\\Lab 6")
6
7 # Question 1
8
9 # i. What is the distribution of X ?
10 # n = 50, p = 0.85
11
12 # ii. What is the probability that at least 47 students passed the test ?
13 pbinom(47, 50, 0.85, lower.tail = TRUE)
```

The console shows the output of the script:

```
> # IT24100936_Lab06
> # Exercise
>
> #Setting the directory
> setwd("D:\\Year 02 Semester 01\\PS\\Labs\\Lab 6")
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> # Question 1
>
> # i. What is the distribution of X ?
> # n = 50, p = 0.85
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> # ii. What is the probability that at least 47 students passed the test ?
> pbinom(47, 50, 0.85, lower.tail = TRUE)
[1] 0.9858115
> |
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13 pbinom(47, 50, 0.85, lower.tail = TRUE)
14
15 # Question 2
16
17 # i. What is the random variable (X) for the problem ?
18 # Number of calls per hour
19
20 # ii. What is the distribution of X ?
21 # Poisson Distribution -> lambda = 12
22
23 # iii. What is the probability that exactly 15 calls are received in an hour ?
24 dpois(15, 5)
```

The console shows the output of the script:

```
>
> # ii. What is the probability that at least 47 students passed the test ?
> pbinom(47, 50, 0.85, lower.tail = TRUE)
[1] 0.9858115
> # Question 2
>
> # i. What is the random variable (X) for the problem ?
> # Number of calls per hour
>
> # ii. What is the distribution of X ?
> # Poisson Distribution -> lambda = 12
>
> # iii. What is the probability that exactly 15 calls are received in an hour ?
> dpois(15, 5)
[1] 0.0001572454
> |
```