Probability and Statistics - IT2120

IT24103507

Ex 01)

```
     Source on Save
1  setwd("C:\\Users\\USER\\Downloads\\IT24103507_PS_LAB_07")
2
3  #exercise 01
4  #random variable X follows a uniform distribution with a=0 & b=40
5  punif(25, min = 0, max = 40) - punif(10, min = 0, max = 40)
6
```

Console Terminal × Background Jobs ×

R ▾ R 4.5.1 · C:/Users/USER/Downloads/IT24103507_PS_LAB_07/

```
> setwd("C:\\Users\\USER\\Downloads\\IT24103507_PS_LAB_07")
> #exercise 01
> #random variable X follows a uniform distribution with a=0 & b=40
> punif(25, min = 0, max = 40) - punif(10, min = 0, max = 40)
[1] 0.375
```

Ex 02)

```
7  #exercise 02
8  #random variable X has exponential distribution with lambda= 0.334
9  #P(X <= 2)
10  pexp(2, rate = 0.334, lower.tail = TRUE)
11
```

```
> #exercise 02
> #random variable X has exponential distribution with lambda= 0.334
> #P(X <= 2)
> pexp(2, rate = 0.334, lower.tail = TRUE)
[1] 0.487267
```

Ex 03)

```
12  #exercise 03
13  #mean = 100, s.d = 15
14  #i) p( IQ > 130), so 1 - p(IQ <= 130)
15  1 - pnorm(130, mean = 100, sd = 15, lower.tail = TRUE)
16  #ii) 95th percentile, so 95% = 0.95
17  qnorm(0.95, mean = 100, sd = 15, lower.tail = FALSE)
```

```
> #exercise 03
> #mean = 100, s.d = 15
> #i) p( IQ > 130), so 1 - p(IQ <= 130)
> 1 - pnorm(130, mean = 100, sd = 15, lower.tail = TRUE)
[1] 0.02275013
> #ii) 95th percentile, so 95% = 0.95
> qnorm(0.95, mean = 100, sd = 15, lower.tail = FALSE)
[1] 75.3272
>
```