Sri Lanka Institute of Information Technology

Lab Submission
Worksheet No 07

IT24102210

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```r
setwd("C:\\Users\\Uththara Masachchi\\Downloads\\IT24102210")
getwd()

# 1. Uniform Distribution: P(10 < X < 25)
prob1 <- punif(25, min=0, max=40, lower.tail=TRUE) - punif(10, min=0, max=40, lower.tail=TRUE)
print(prob1)

# 2. Exponential Distribution: P(X <= 2)
prob2 <- pexp(2, rate=1/3, lower.tail=TRUE)
print(prob2)

# 3. Normal Distribution
# i. P(X > 130)
prob3_i <- 1 - pnorm(130, mean=100, sd=15, lower.tail=TRUE)
print(prob3_i)

# ii. 95th Percentile
iq_95 <- qnorm(0.95, mean=100, sd=15, lower.tail=TRUE)
print(iq_95)
```

```
> # 1. Uniform Distribution: P(10 < X < 25)
> prob1 <- punif(25, min=0, max=40, lower.tail=TRUE) - punif(10, min=0, max=40, lower.tail=TRUE)
> print(prob1)
[1] 0.375
> # 2. Exponential Distribution: P(X <= 2)
> prob2 <- pexp(2, rate=1/3, lower.tail=TRUE)
> print(prob2)
[1] 0.4865829
> # 3. Normal Distribution
> # i. P(X > 130)
> prob3_i <- 1 - pnorm(130, mean=100, sd=15, lower.tail=TRUE)
> print(prob3_i)
[1] 0.02275013
> # ii. 95th Percentile
> iq_95 <- qnorm(0.95, mean=100, sd=15, lower.tail=TRUE)
> print(iq_95)
[1] 124.6728
>
```

R | Global Environment

Values

i	5L
iq_95	124.672804404272
max_ind	4L
max_index	4L
prob1	0.375
prob2	0.486582880967408
prob3_i	0.0227501319481792
vec	num [1:5] 10 45 23 99 56
x	num [1:3] 1 2 3