Lab - 06

```r
setwd("C:\\Users\\Dulara\\Desktop\\IT24101566")

# Binomial distribution
n <- 50
p <- 0.85

# (i) Distribution
cat("X ~ Binomial(50, 0.85)\n")

# (ii) Probability at least 47 students pass
prob_at_least_47 <- sum(dbinom(47:50, size=n, prob=p))
cat("P(X >= 47) =", prob_at_least_47, "\n")

# Q2
lambda <- 12

# (i) Random variable
cat("X = Number of calls received per hour\n")

# (ii) Distribution
cat("X ~ Poisson(12)\n")

# (iii) Probability exactly 15 calls
prob_15 <- dpois(15, lambda=lambda)
cat("P(X = 15) =", prob_15, "\n")
```

```
> setwd("C:\\Users\\Dulara\\Desktop\\IT24101566")
> # Binomial distribution
> n <- 50
> p <- 0.85
> # (i) Distribution
> cat("X ~ Binomial(50, 0.85)\n")
X ~ Binomial(50, 0.85)
> # (ii) Probability at least 47 students pass
> prob_at_least_47 <- sum(dbinom(47:50, size=n, prob=p))
> cat("P(X >= 47) =", prob_at_least_47, "\n")
P(X >= 47) = 0.04604658
> # Q2
> lambda <- 12
> # (i) Random variable
> cat("X = Number of calls received per hour\n")
X = Number of calls received per hour
> # (ii) Distribution
> cat("X ~ Poisson(12)\n")
X ~ Poisson(12)
> # (iii) Probability exactly 15 calls
> prob_15 <- dpois(15, lambda=lambda)
> cat("P(X = 15) =", prob_15, "\n")
P(X = 15) = 0.07239112
> |
```