Progressive Education Society's
Modern College of Engineering, Shivajinagar, Pune-05.
(An Autonomous Institute Affiliated to Savitribai Phule Pune University)
Department of MCA

PRACTICAL SUBMISSION RECORD- A.Y. 2025-26

Class: SYMCA Division : A **Semester: III**	**Course Code:** MCA01604 **Course Name:** Data Science Laboratory	**Batch:** S2
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CO No: CO605.1	**Assignment No:** 2	

Title : Use the Iris dataset and train a Logistic Regression model to classify whether a flower is of species Iris-setosa or not. Evaluate model accuracy, precision, and recall.

Code:

```
data(iris)

iris$is_setosa <- as.factor(ifelse(iris$Species ==
"setosa", 1, 0)) iris$Species <- NULL

set.seed(123)

train_indices <- sample(1:nrow(iris), 0.8 * nrow(iris))

training_set <- iris[train_indices, ]
test_set <- iris[-train_indices, ]

model <- glm(is_setosa ~ ., data = training_set, family =

"binomial") probabilities <- predict(model, newdata = test_set, type

= "response") predictions <- ifelse(probabilities > 0.5, 1, 0)

conf_matrix <- table(Actual = test_set$is_setosa, Predicted = predictions)

print("Confusion
Matrix:")
print(conf_matrix)

accuracy <- (conf_matrix[1,1] + conf_matrix[2,2]) /
sum(conf_matrix) cat("Accuracy:", accuracy, "\n")
```

precision <- conf_matrix[2,2] / (conf_matrix[1,2] +
conf_matrix[2,2]) cat("Precision:", precision, "\n")

recall <- conf_matrix[2,2] / (conf_matrix[2,1] + conf_matrix[2,2])
cat("Recall:", recall, "\n")

Output:

```
[1] "Confusion Matrix:"
> print(conf_matrix)
      Predicted
Actual  0  1
     0 20  0
     1  0 10
>
> accuracy <- (conf_matrix[1,1] + conf_matrix[2,2]) / sum(conf_matrix)
> cat("Accuracy:", accuracy, "\n")
Accuracy: 1
>
> precision <- conf_matrix[2,2] / (conf_matrix[1,2] + conf_matrix[2,2])
> cat("Precision:", precision, "\n")
Precision: 1
>
> recall <- conf_matrix[2,2] / (conf_matrix[2,1] + conf_matrix[2,2])
> cat("Recall:", recall, "\n")
Recall: 1
```