In [1]:
```r
#Experiment No: 7 - Write a R program to implement Decision tree Algorithm.
```

In [ ]:
```r
# Load the libraries
library(datasets)
library(caTools)
library(party)
library(dplyr)
library(magrittr)
```

In [10]:
```r
# Load the readingSkills.csv dataset using read.csv()
readingSkills <- read.csv("readingSkills.csv")

# Display the first few rows of the dataset to confirm
head(readingSkills)
```

A data.frame: 6 × 4

	nativeSpeaker	age	shoeSize	score
	<chr>	<int>	<dbl>	<dbl>
1	yes	5	24.83	32.29
2	yes	6	25.95	36.63
3	no	11	30.42	49.60
4	yes	7	28.66	40.28
5	yes	11	31.88	55.46
6	yes	10	30.07	52.83

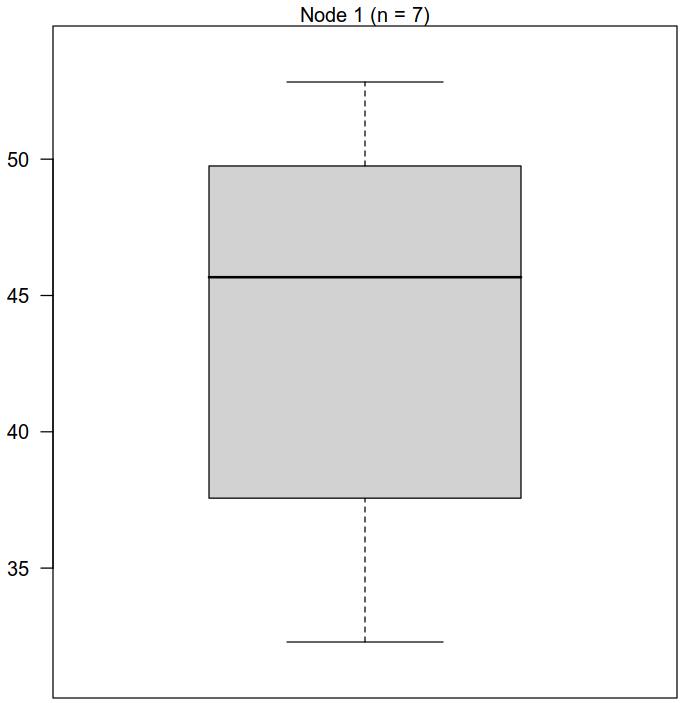
In [11]:
```r
# Load the data
readingSkills <- read.csv("readingSkills.csv")  # Replace with the correct p
```

In [15]:
```r
# Set a seed to ensure reproducibility
set.seed(123)

# Split the data into training and testing sets (70% training, 30% testing)
split <- sample.split(readingSkills$score, SplitRatio = 0.7)
train_data <- subset(readingSkills, split == TRUE)
test_data <- subset(readingSkills, split == FALSE)
```

In [17]:
```r
# Build a Decision Tree using the 'ctree' function from the 'party' package
decision_tree_model <- ctree(score ~ nativeSpeaker + age + shoeSize, data =

# Plot the decision tree
plot(decision_tree_model)
```



In [18]:
```r
# Predict the score using the test data
predictions <- predict(decision_tree_model, newdata = test_data)

# Display the predicted values
predictions
```

A matrix: 3 × 1 of type dbl

score
43.63143
43.63143
43.63143

In [19]:
```r
# Compare predicted values with actual values in the test set
comparison <- data.frame(Actual = test_data$score, Predicted = predictions)

# Print the comparison of actual and predicted values
print(comparison)

# Calculate the Mean Absolute Error (MAE) to evaluate the model
MAE <- mean(abs(comparison$Actual - comparison$Predicted))
cat("Mean Absolute Error (MAE):", MAE)
```

```
  Actual    score
1  40.28 43.63143
2  55.46 43.63143
3  48.21 43.63143
Mean Absolute Error (MAE): NaN
```