```
> Model_RF1
Random Forest

9619 samples
  53 predictor
   5 classes: 'A', 'B', 'C', 'D', 'E'

No pre-processing
Resampling: Bootstrapped (25 reps)
Summary of sample sizes: 9619, 9619, 9619, 9619, 9619, 9619, ...
Resampling results across tuning parameters:

  mtry  Accuracy   Kappa
   2    0.9856230  0.9818018
  27    0.9919994  0.9898753
  53    0.9871087  0.9836877

Accuracy was used to select the optimal model using the largest value.
The final value used for the model was mtry = 27.
> Predict_RF <- predict(Model_RF1, Validation)
> Validation$classe <- factor(Validation$classe, levels = levels(Predict_RF))
> confusionMatrix(Validation$classe, Predict_RF)
Confusion Matrix and Statistics

          Reference
Prediction   A   B   C   D   E
         A 811   0   0   0   0
         B   0 558   0   0   0
         C   0   0 509   0   0
         D   0   0   0 456   0
         E   0   0   0   0 557

Overall Statistics

               Accuracy : 1
                 95% CI : (0.9987, 1)
    No Information Rate : 0.2805
    P-Value [Acc > NIR] : < 2.2e-16

                  Kappa : 1

 Mcnemar's Test P-Value : NA

Statistics by Class:

                     Class: A Class: B Class: C Class: D Class: E
Sensitivity            1.0000    1.000   1.0000   1.0000   1.0000
Specificity            1.0000    1.000   1.0000   1.0000   1.0000
Pos Pred Value         1.0000    1.000   1.0000   1.0000   1.0000
Neg Pred Value         1.0000    1.000   1.0000   1.0000   1.0000
Prevalence             0.2805    0.193   0.1761   0.1577   0.1927
Detection Rate         0.2805    0.193   0.1761   0.1577   0.1927
Detection Prevalence   0.2805    0.193   0.1761   0.1577   0.1927
Balanced Accuracy      1.0000    1.000   1.0000   1.0000   1.0000
> #calculating the accuracy from the confusion matrix
> cm <- confusionMatrix(Validation$classe, Predict_RF)
> Accuracy_RF <- cm$overall["Accuracy"]
> Accuracy_RF
Accuracy
       1
> error_RF <- 1 -  Accuracy_RF
> error_RF
Accuracy
       0
```

```
> predict(Model_RF1, Testing[, -length(names(Testing))])
 [1] B A B A A E D B A A B C B A E E A B B B
Levels: A B C D E
```