1. Objective: Learn how to apply Principal Component Analysis.

Steps:

1. Load "Attitudes" Data into R (Attitudes is an inbuilt data set)
2. Check names and structure of data
3. Split the Data into train and test.
4. Standardize the Data by using the function “PreProcess” from caret package(make sure you don't have target in it).

```
pre1<-preProcess(train[,setdiff(colnames(train),"rating")])
train_scale<-predict(pre1,train[,setdiff(colnames(train),"rating")])
test_scale<-predict(pre1,test[,setdiff(colnames(test),"rating")])
```

5. Apply pca on train_scale using princomp (princomp is a function in R).

```
prcomp_train <- princomp(train_scale)
```

6. Consider the components and check for the components which are explaining more about data. Subset those components only.

```
plot(prcomp_train)
train_data<-prcomp_train$scores
# subset the components identified from train_data
```

7. Bind Target train$rating with the output of step6.

8. Apply same train transformation on test_scale.(predict is a function in R)
   test_data<-predict(prcomp_train,test_scale)

9. Bind test target with test_data and predict the revenue check the error metrics

10. Build linear regression on train_data and predict on train_data and test_data, Check the error metrics on both.