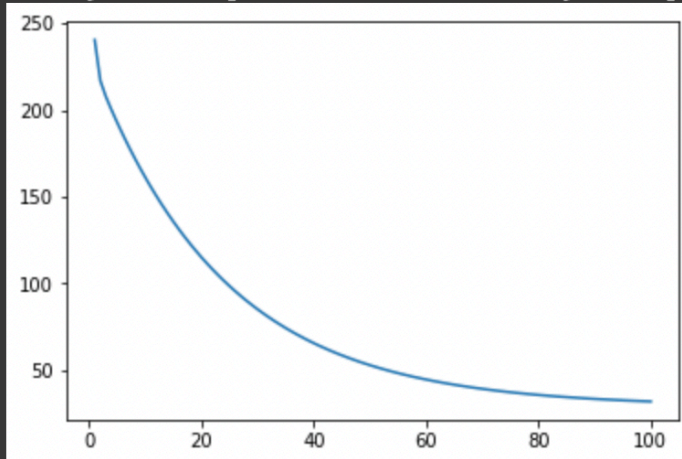Mean Square Error for training and test sets:


```
Average Mean squared error in Training data prediction is 42.942341807914026
Average Mean squared error in Testing data prediction is 57.81554858534188
```

salient project features (describe your design choices):

First of all, import all necessary libraries and split the dataset into train and test set. And perform greedy search to find optimal learning rate. Plot the "cost function vs iterations" curve, initialize fitting parameters, add a column of ones to X, gets the final data and the values of cost function in each iteration. After that, we have Mean Square Error for training and test sets. And we finish the learning plot for all predictors, initialize fitting parameters, add a column of ones to X, gets the final data and the values of cost function in each iteration. Then we plot the "Predicted BMI value($\hat{Y}_i$)" vs "Actual BMI value(Y_i)" curve(it is a scatter plot), train a Linear Regression model to predict "BMI" using all other features averrable in the dataset and Saving output file to csv. After that, perform PCA on the dataset and reduce the dimensionality to 2 and train a new model on these newly obtained features. Plot the "cost function vs iterations" curve for this new model and initialize fitting parameters, gets the final data and the values of cost function in each iteration in the end. Next step is plot the "Predicted BMI value($\hat{Y}_i$) of the new model" vs "Actual BMI value(Y_i)" curve(it is a scatter plot). And show the scatter plot of PCA generated new features and also show the linear regression curve that you got from new model. Finally, show the scatter plot of PCA generated new features and also show the linear regression curve that you got from new model.