Exercise 3

1)

The best params are: {'C': 0.01, 'gamma': 1e-05, 'kernel': 'linear'}

The model accuracy is: 96.67%

The best params are: {'C': 0.01, 'gamma': 0.001, 'kernel': 'poly'}

The model accuracy is: 96.67%

The best params are: {'C': 10, 'gamma': 1e-05, 'kernel': 'sigmoid'}

The model accuracy is: 96.67%

The best params are: {'C': 1, 'gamma': 1e-05, 'kernel': 'rbf'}

The model accuracy is: 96.67%

2)

The provided example: (R_min, G_min, B_min, R_mean, G_mean, B_mean)

3)

In this example, kernel choice doesn't seem to matter much if C and gamma are adjusted accordingly. The train-test split has a bigger effect here. Further, the high accuracy confirms that it's a very easy classification, especially given such a small sample size.

NOTE: I'm sorry for just providing a .py file, I just strongly prefer writing code in PyCharm and debugging notebooks can be a hassle. If this really is a problem, I'll adhere to the notebook format for the coming exercises.