

```
In [3]: cd ../../  
  
/Users/in-divye.singh/Documents/Projects/MIC_predictor
```

```
In [4]: from notebooks.utils import *
```

```
In [5]: import biovec  
import numpy as np  
import pandas as pd  
from itertools import chain
```

```
In [6]: import matplotlib.pyplot as plt  
import seaborn as sns
```

```
In [7]: from sklearn.svm import SVC  
from sklearn.metrics import make_scorer  
from sklearn.model_selection import GridSearchCV  
from sklearn.ensemble import RandomForestClassifier  
from sklearn.metrics import accuracy_score, f1_score, roc_auc_score, mat  
thews_corrcoef  
from sklearn.model_selection import train_test_split
```

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In [8]: from sklearn.manifold import TSNE  
from sklearn.decomposition import PCA
```

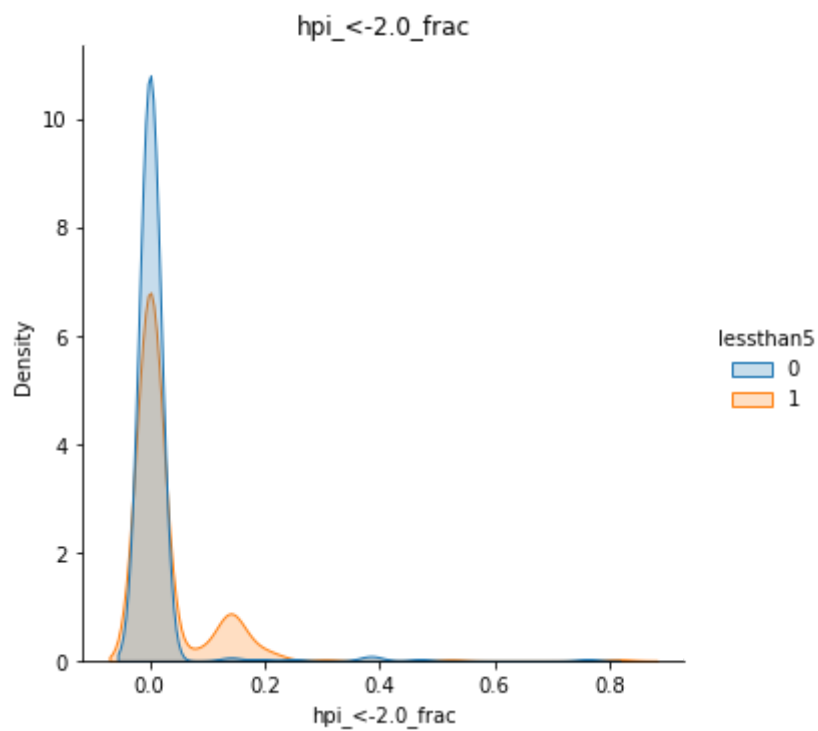
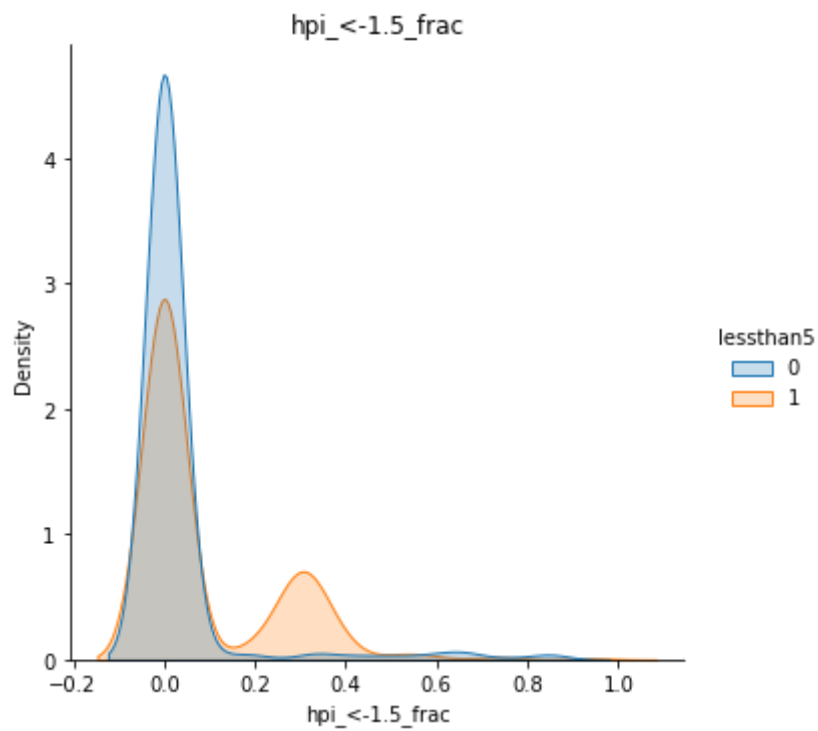
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In [9]: df = pd.read_csv("data/raw/105_feature_ha_avp_ic50.csv")
```

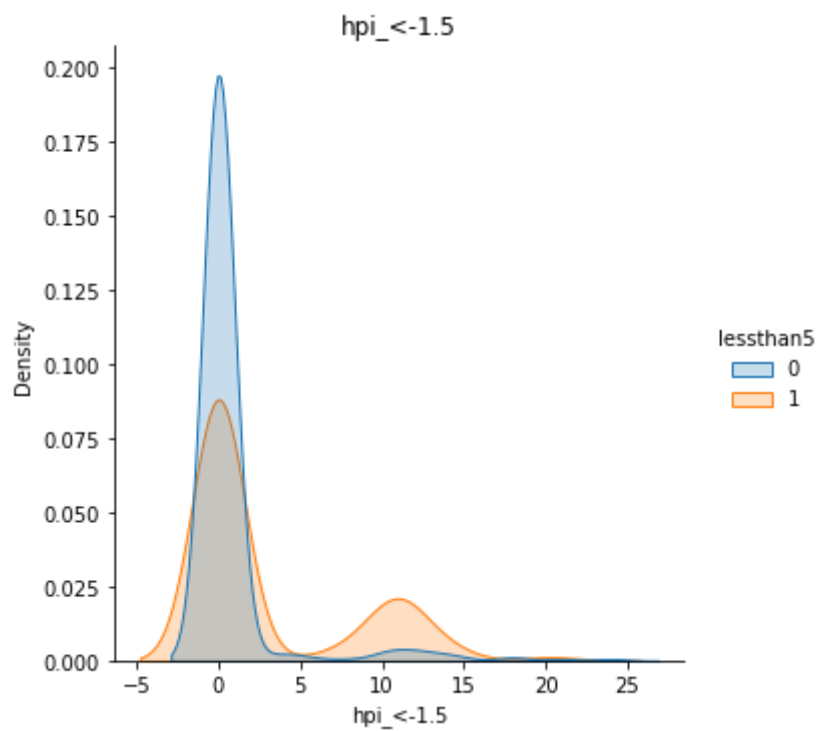
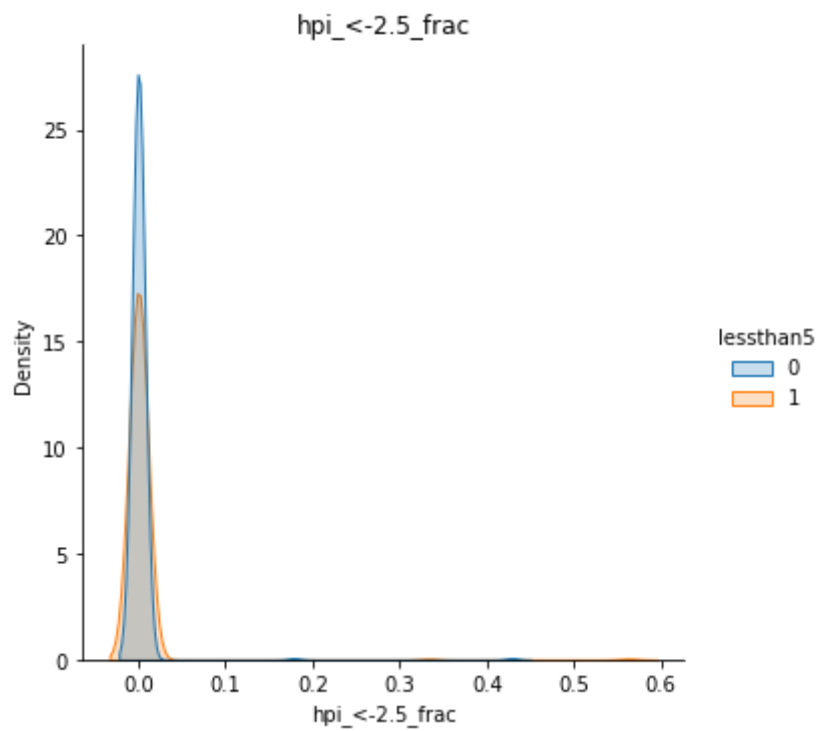
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In [10]: df['lessthan5'] = df['MIC'].apply(lambda mic: 1 if mic <= 5 else 0)
```

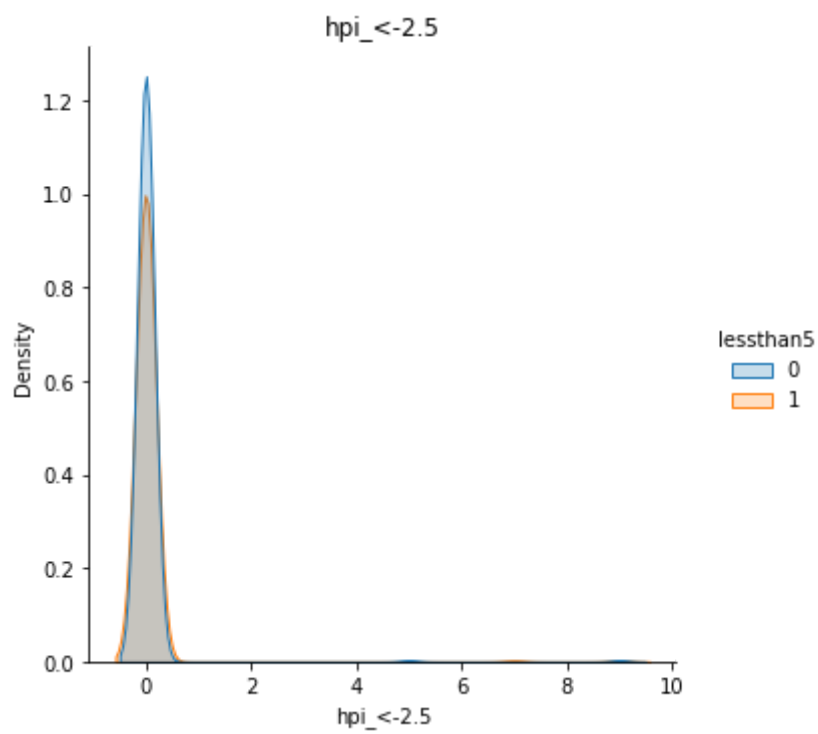
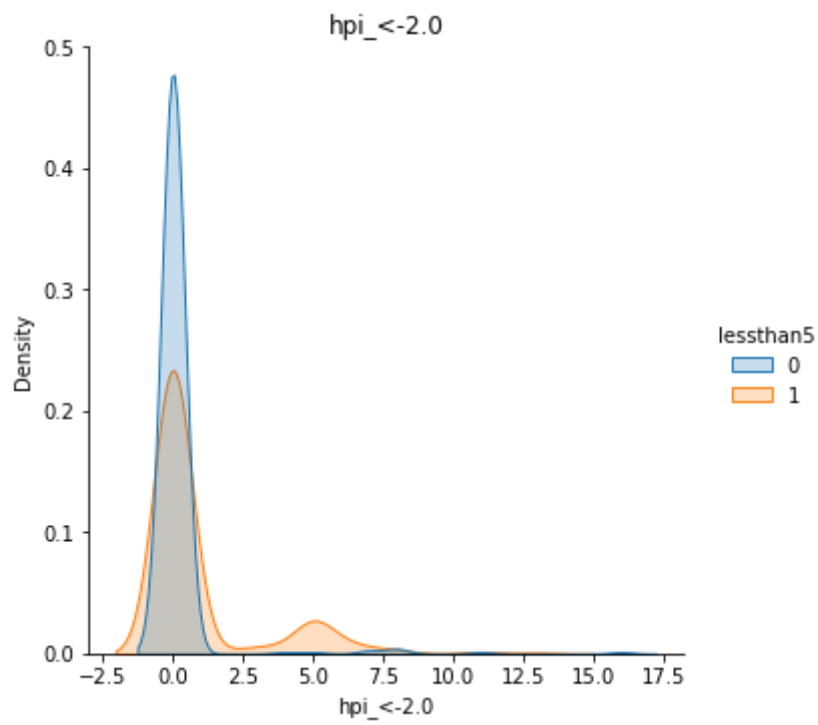
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In [17]: seq_len = df['Seq'].map(lambda s: len(s))
```

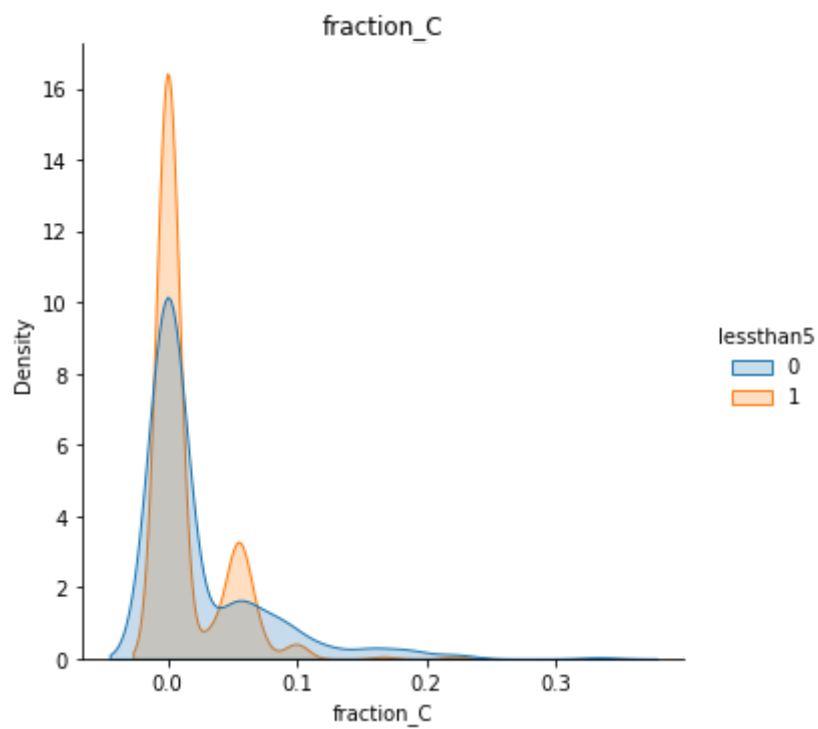
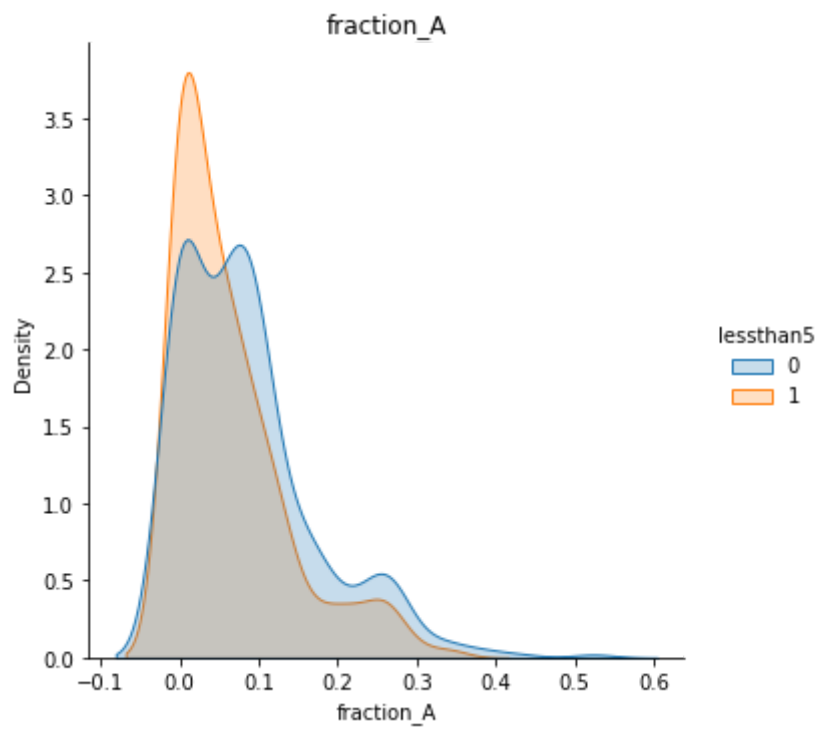
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In [18]: prop_cols = df.columns[2:]
```

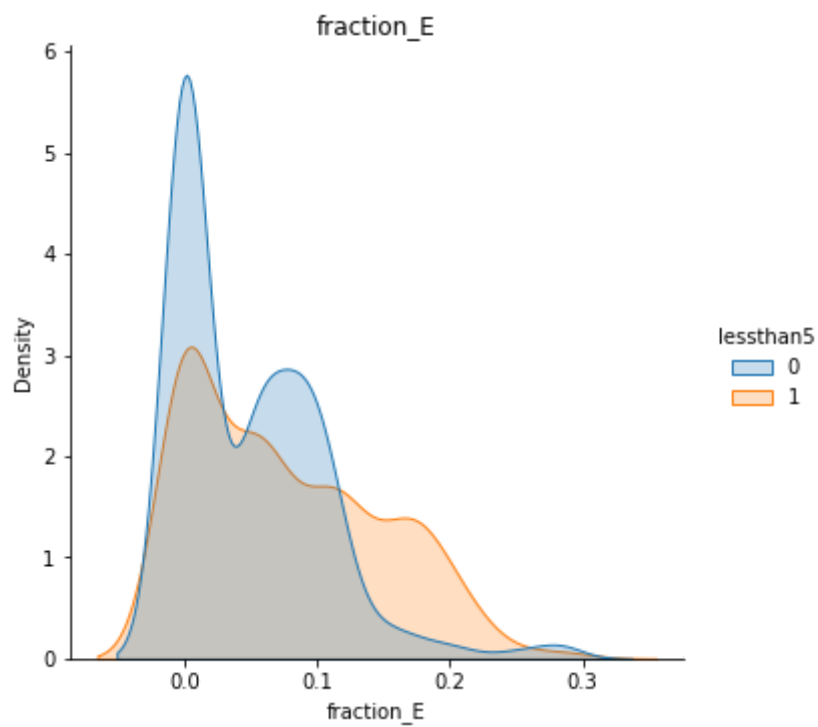
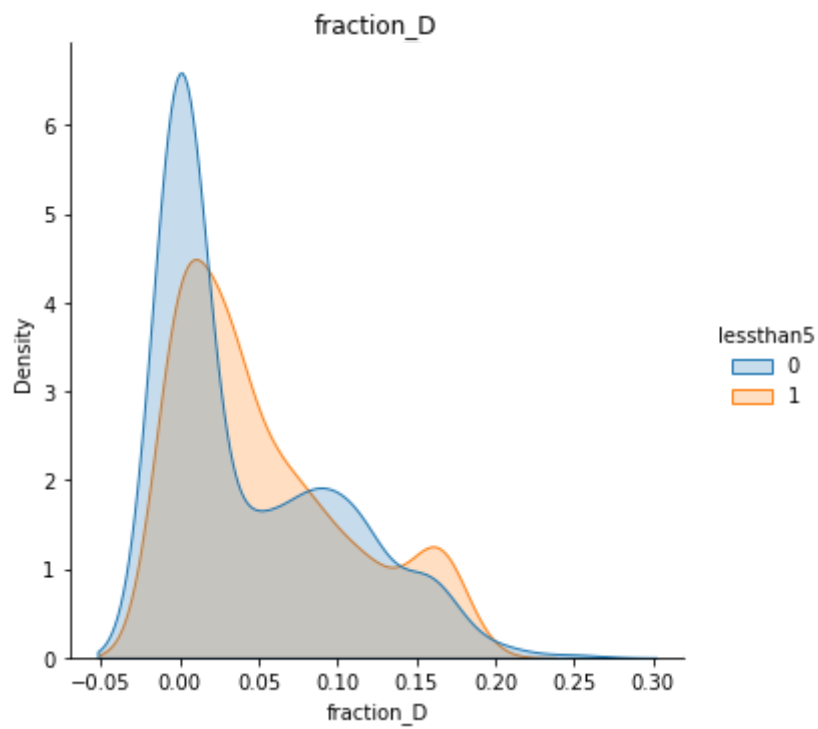
```
In [19]: for feature in prop_cols:
          sns.displot(x=df[feature], hue=df['lessthan5'], kind="kde", fill=True)
          plt.title(feature)
          plt.show()
```

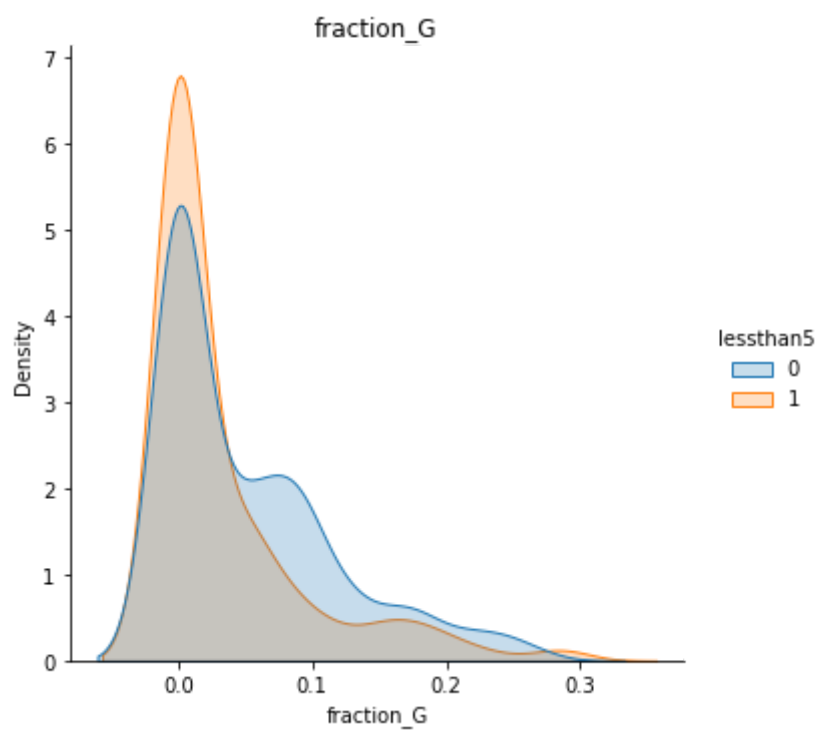
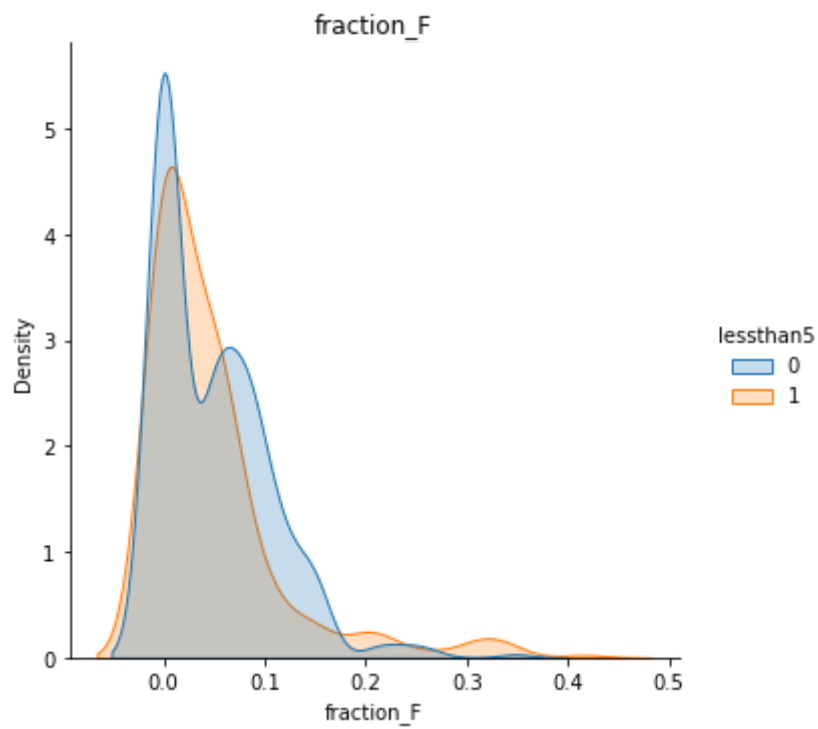


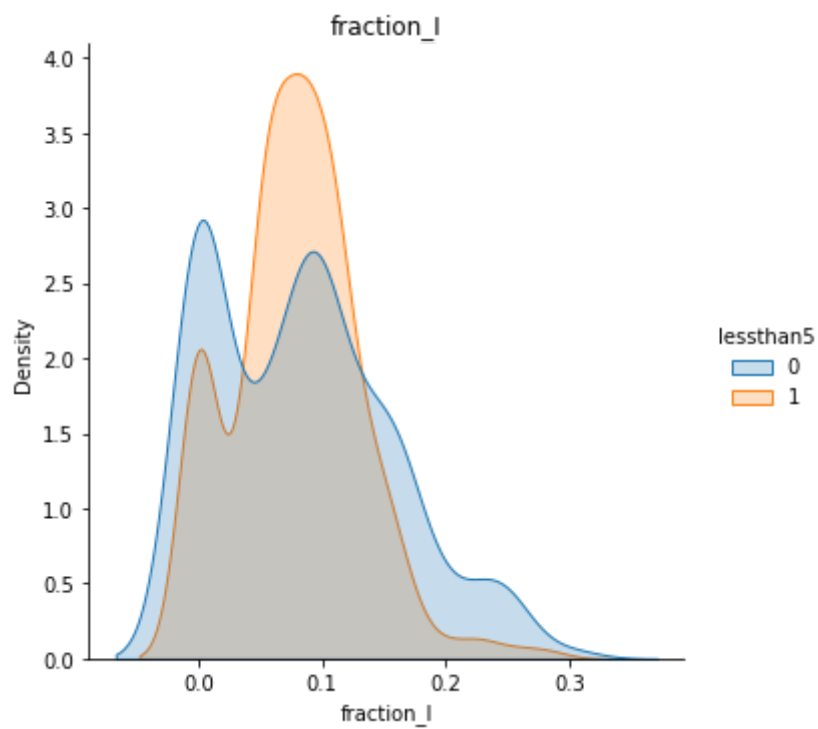
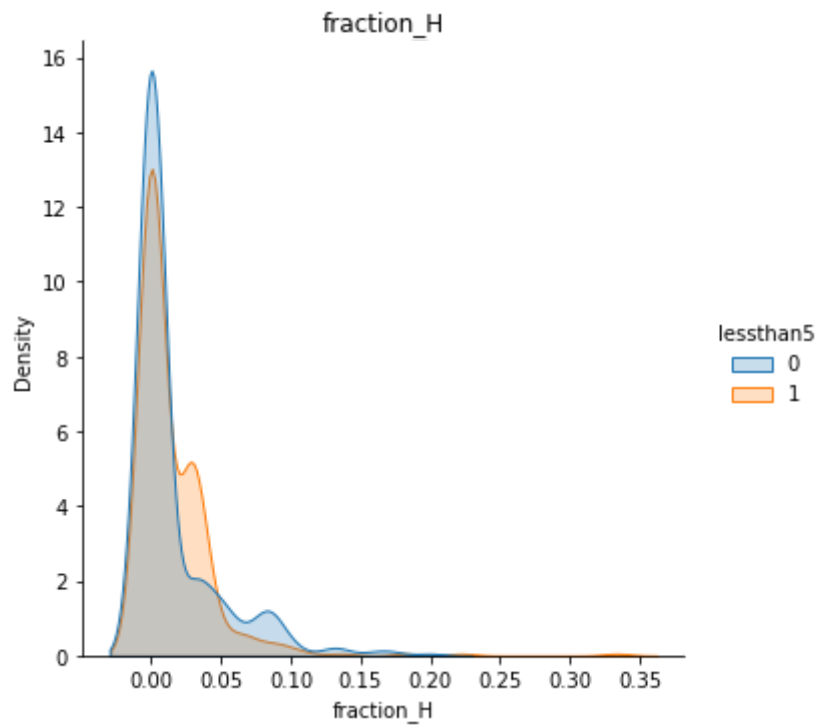


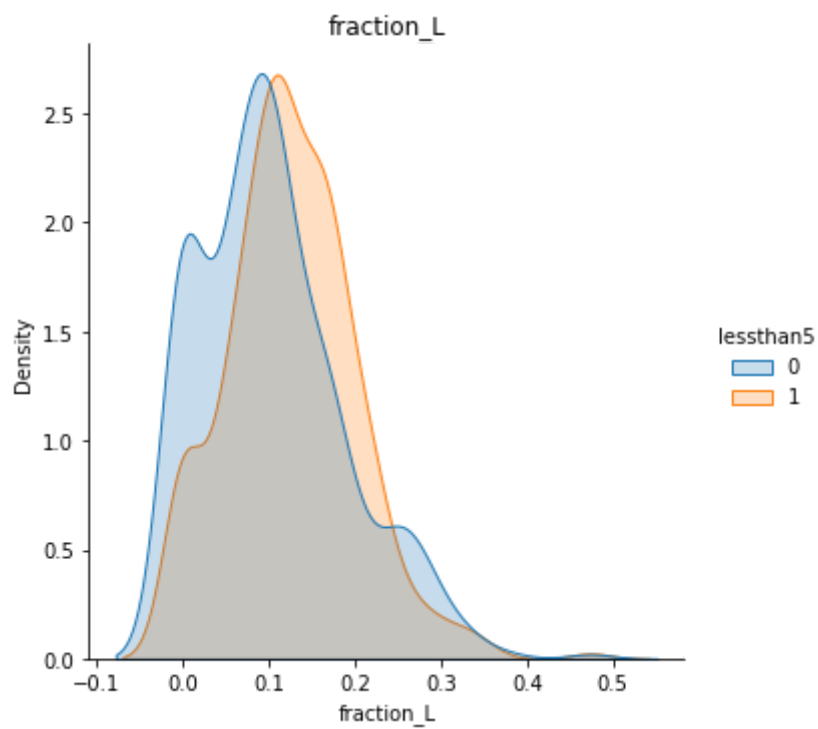
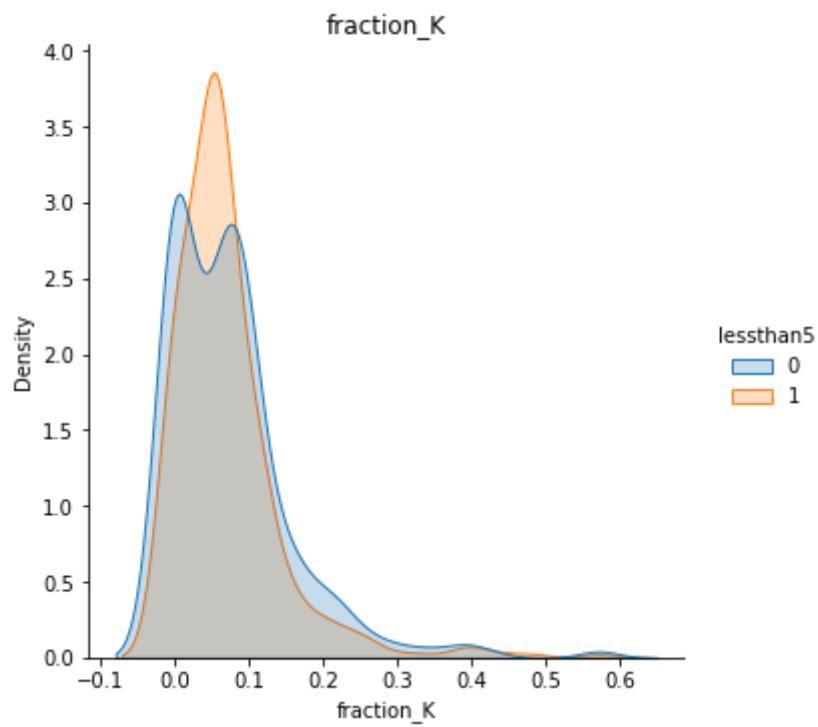


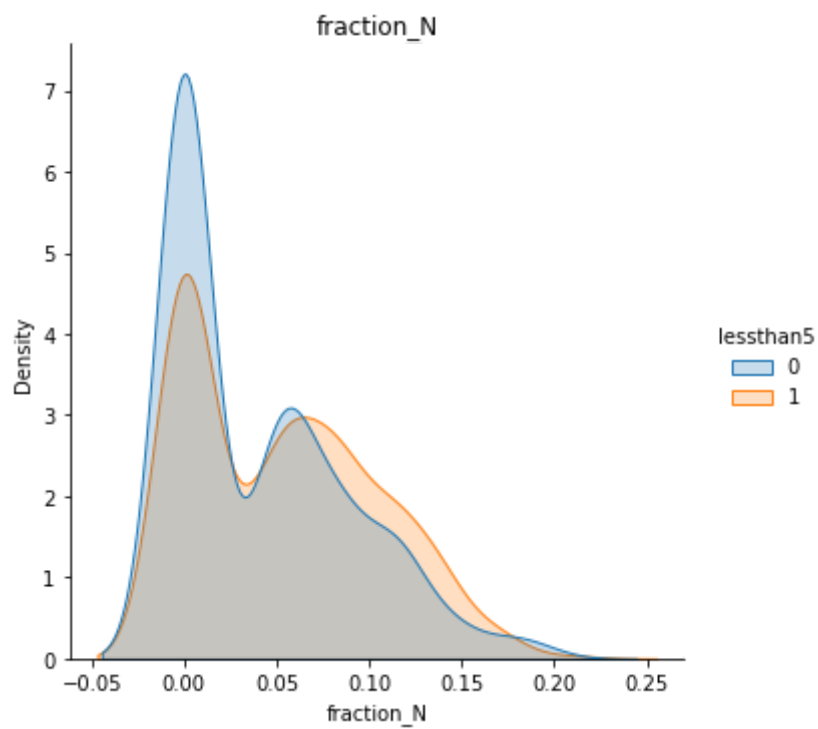
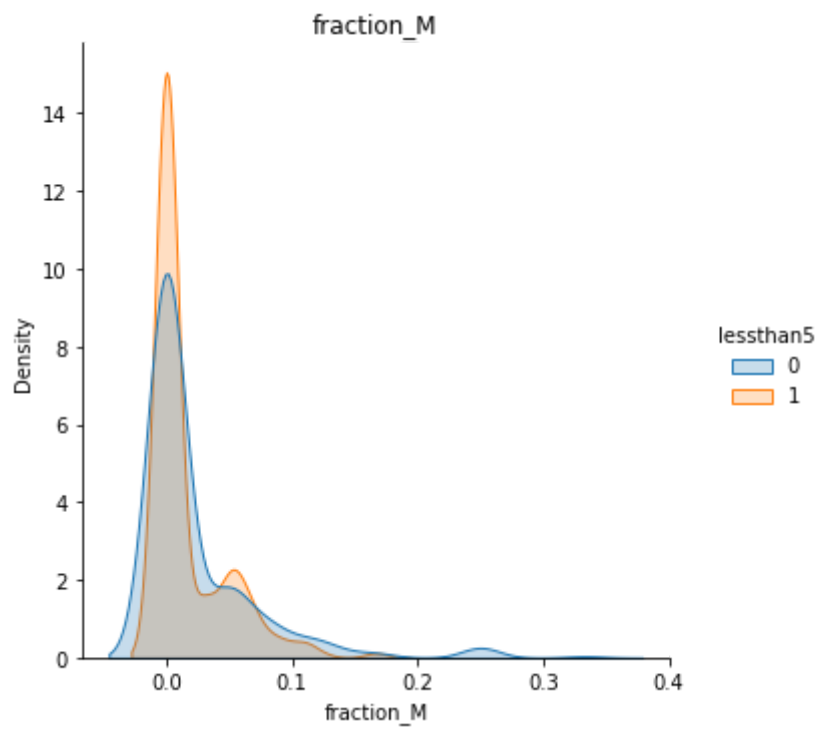


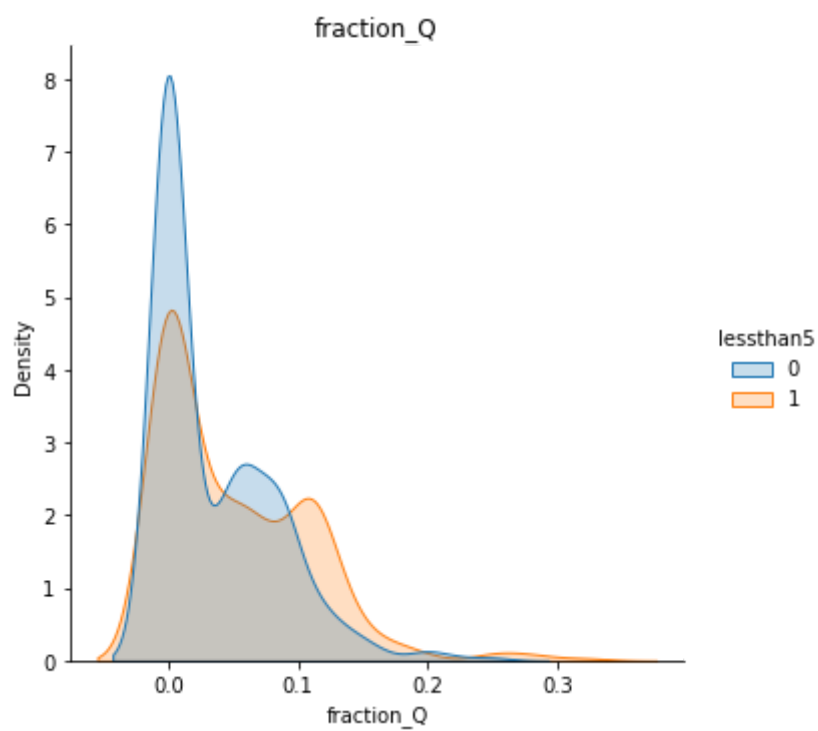
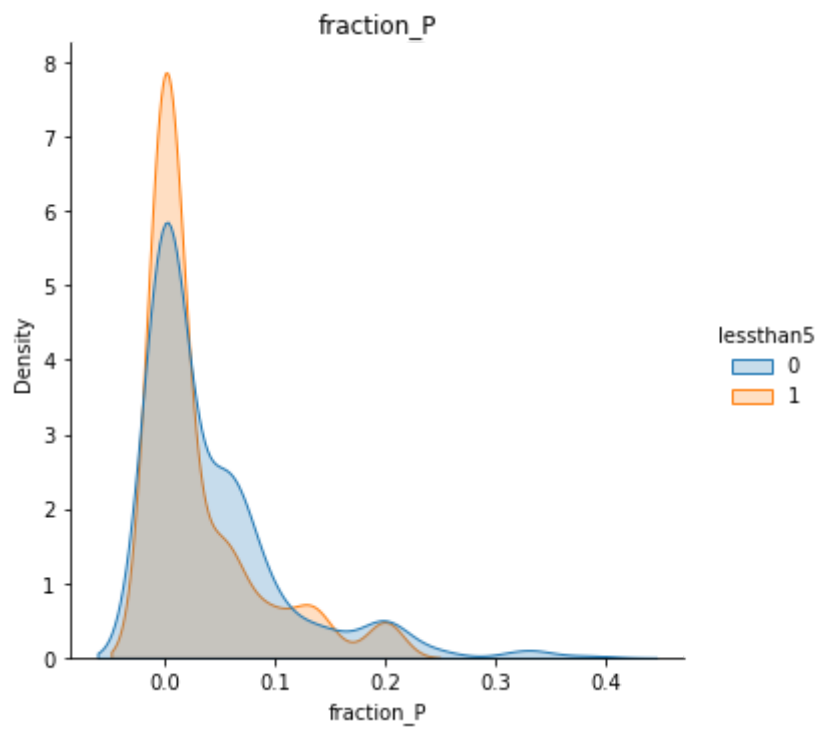


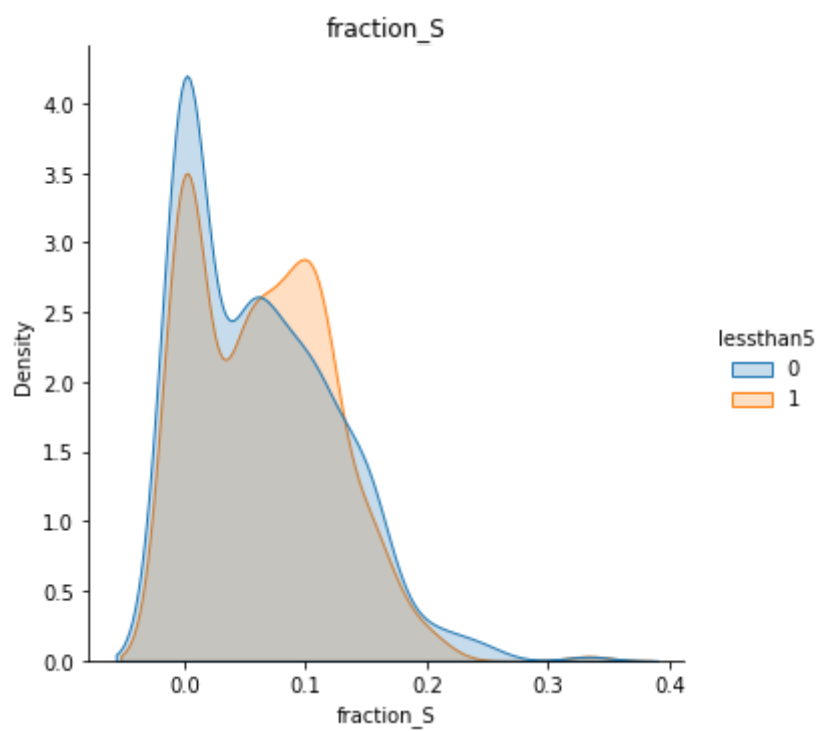
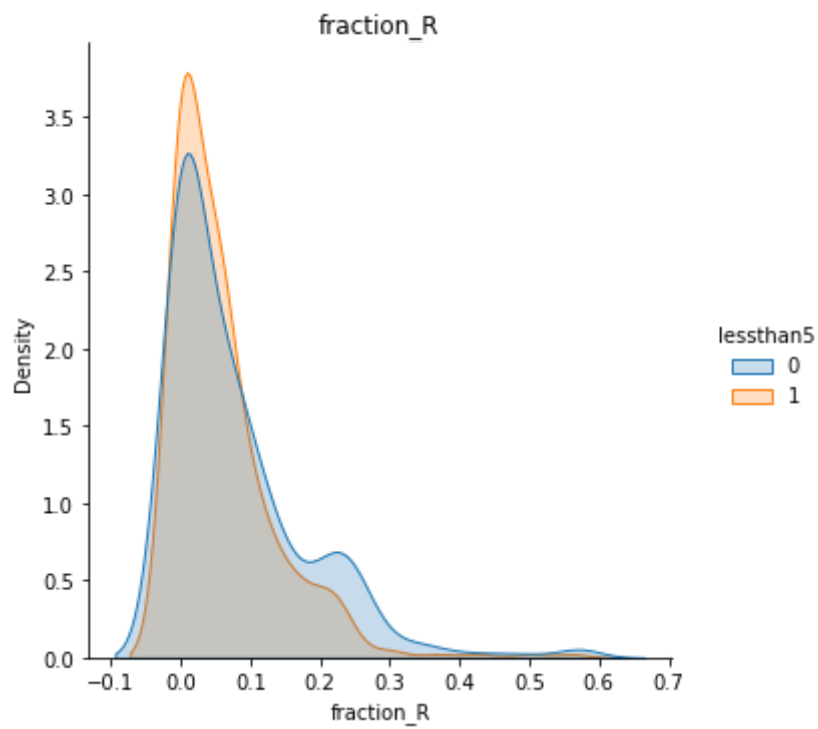


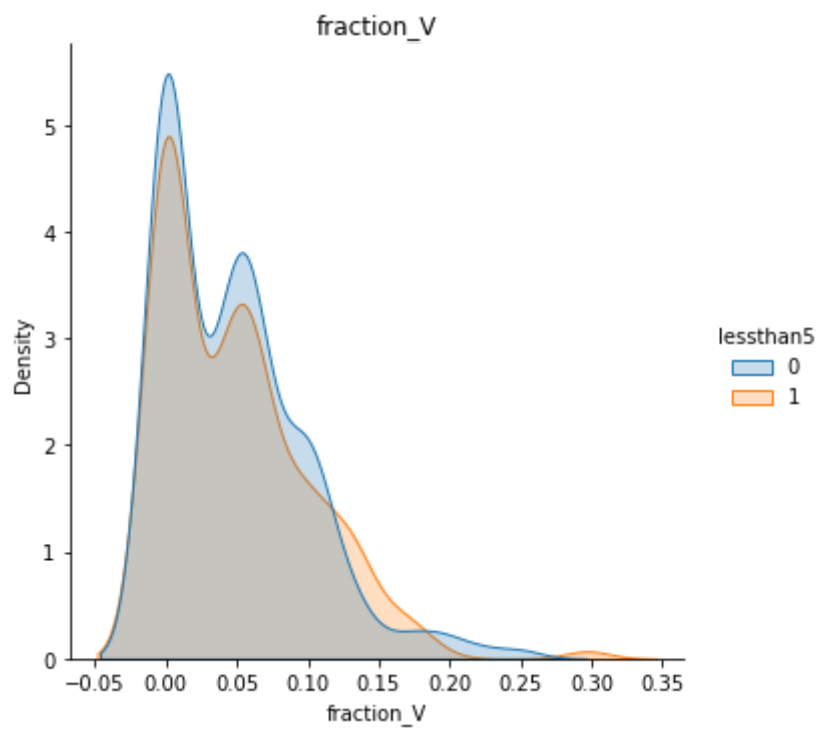
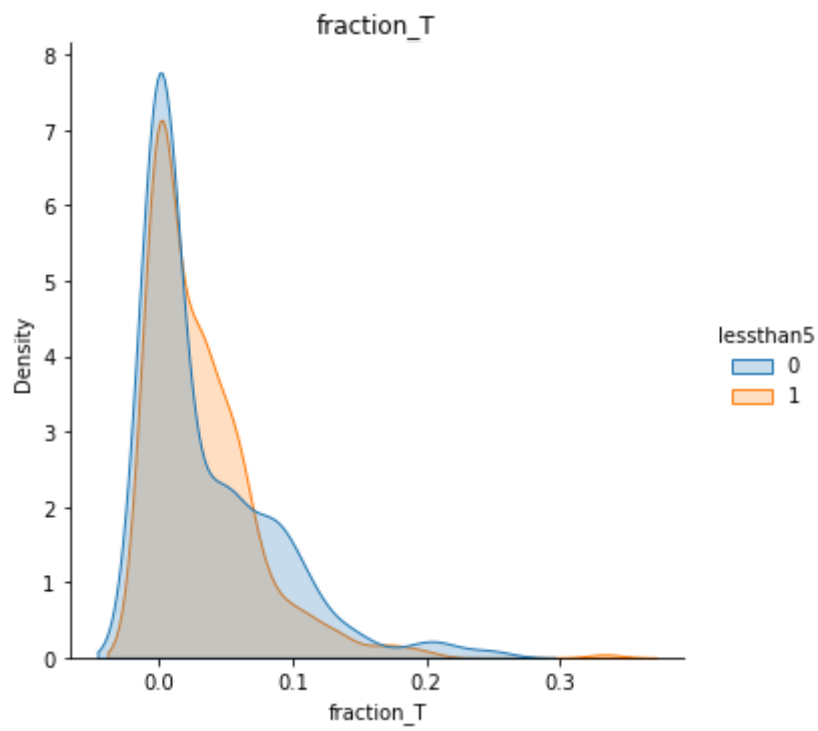


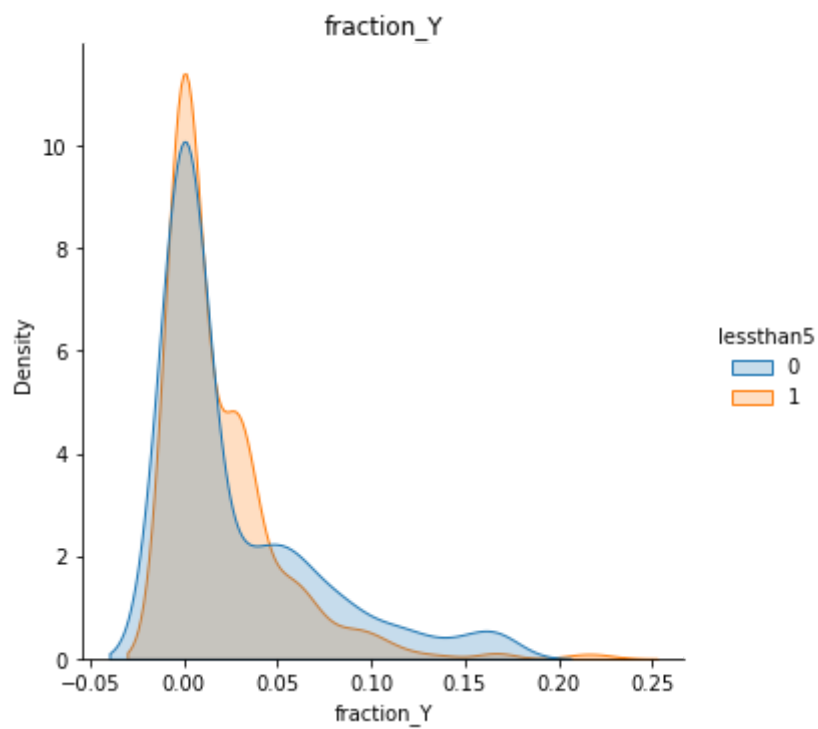
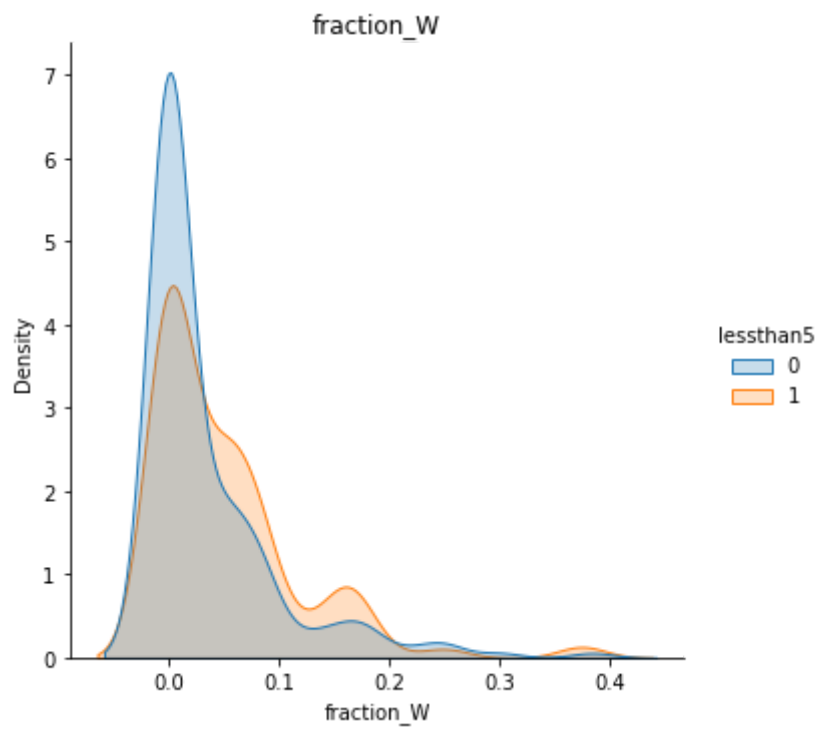


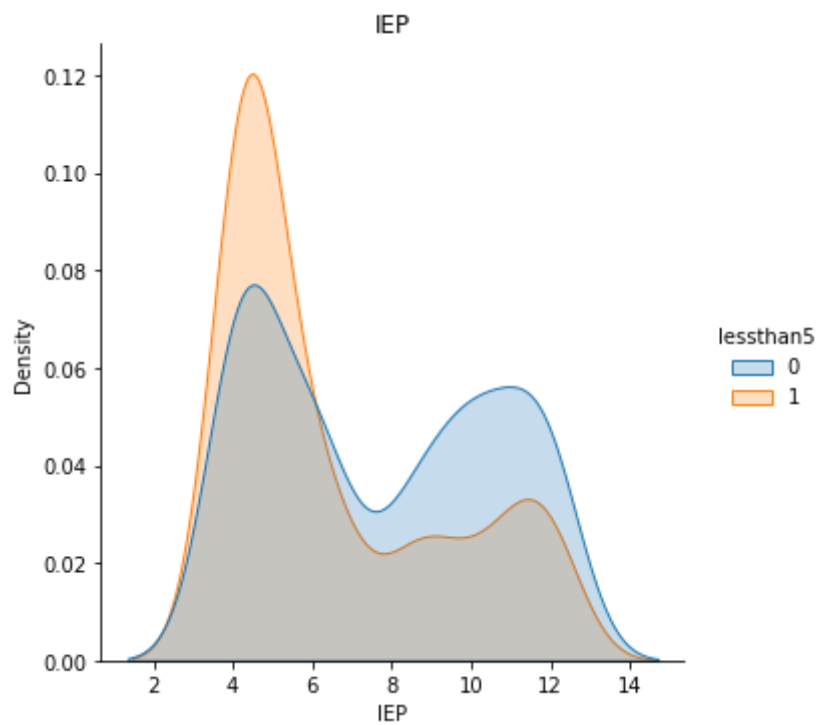
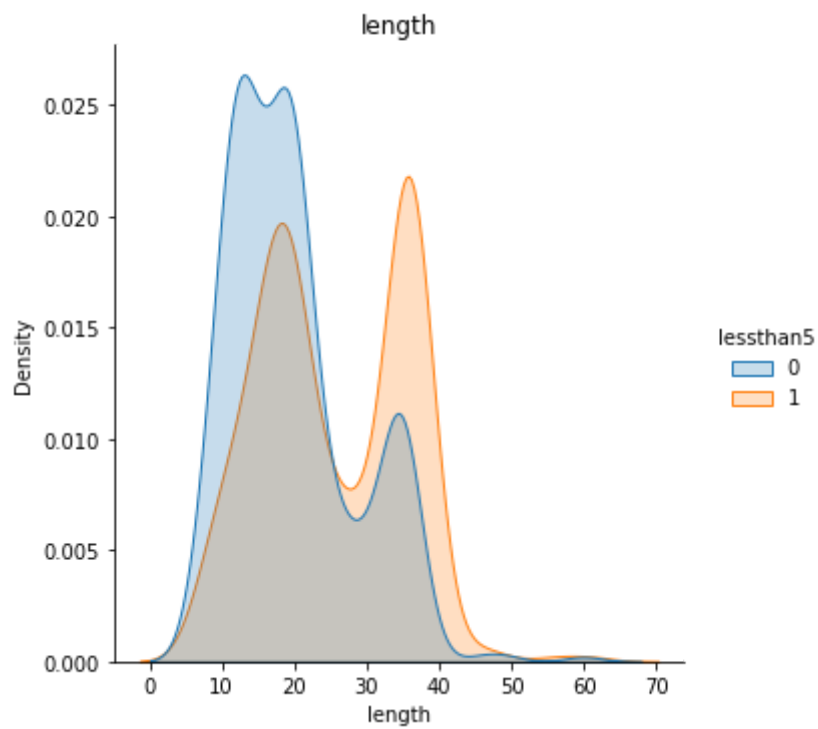


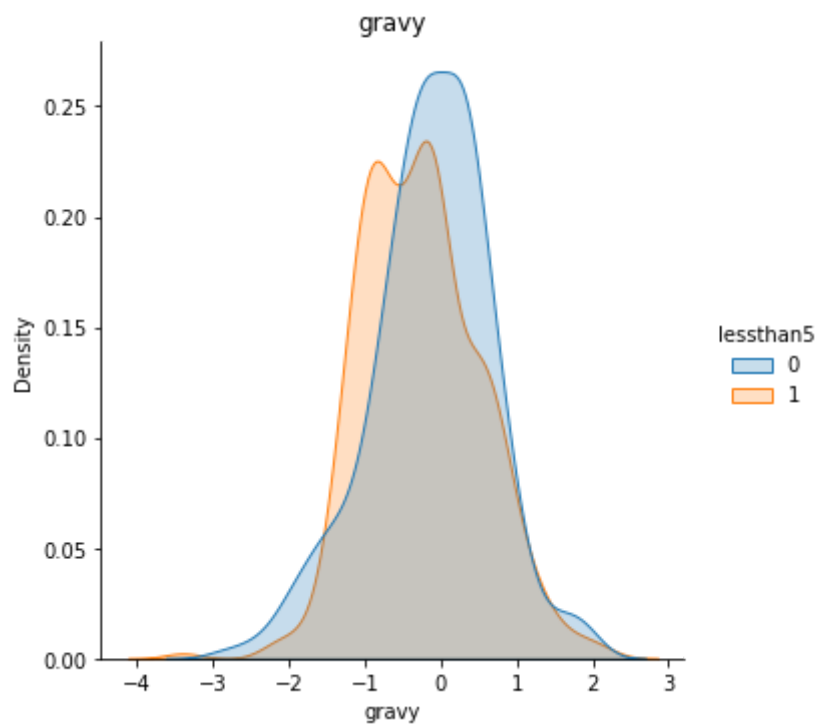
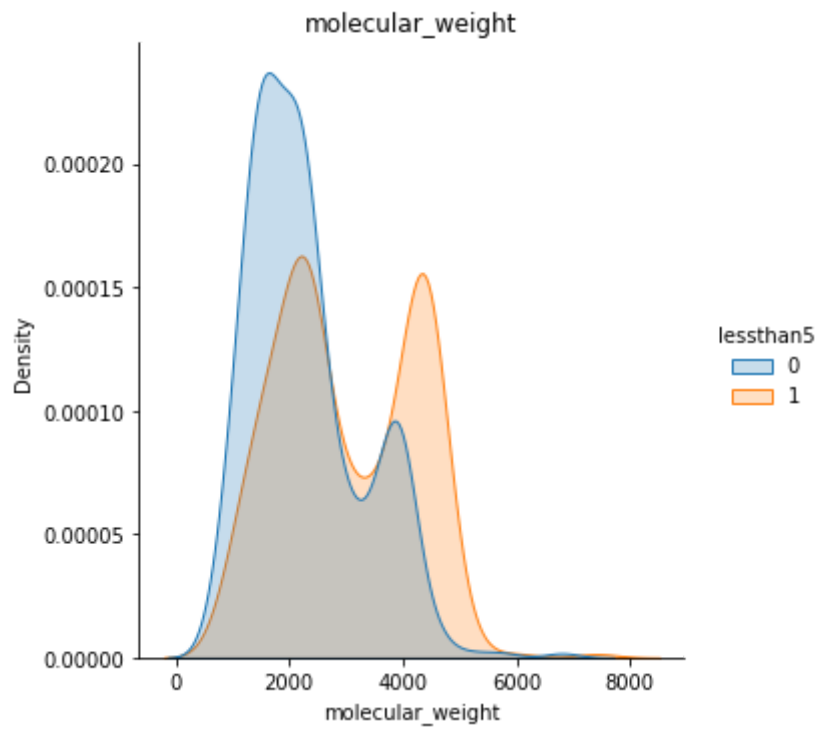


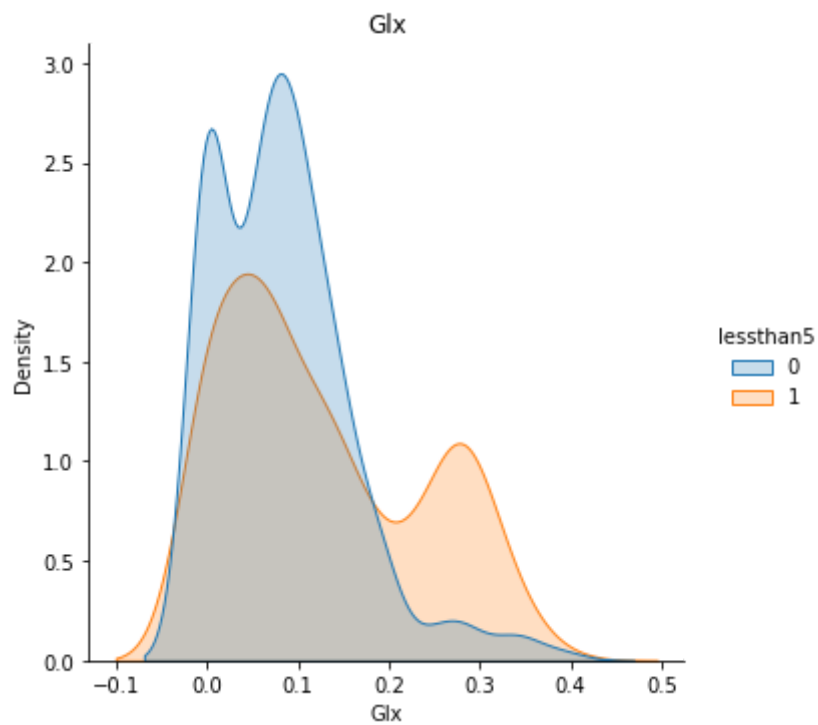
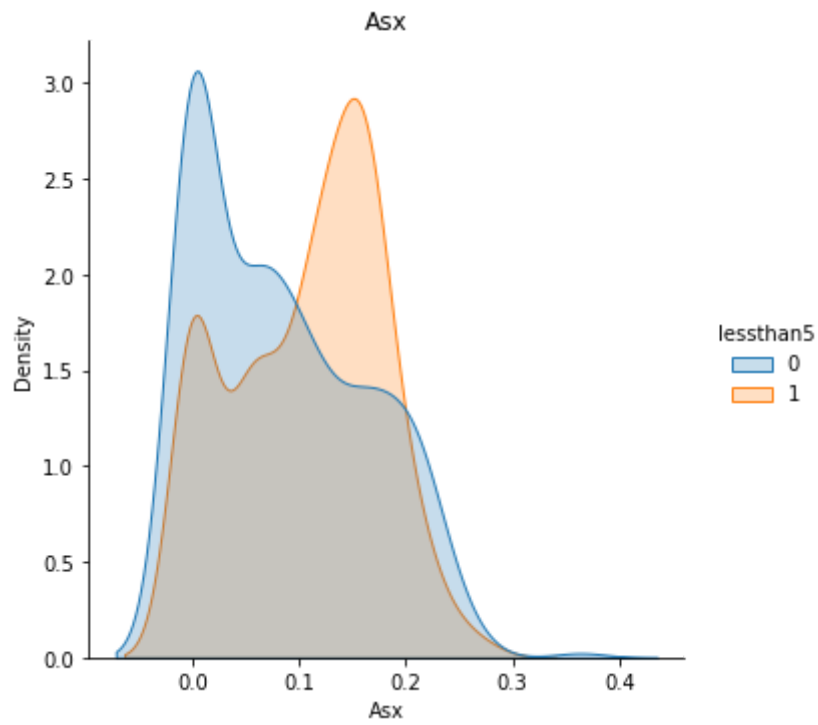


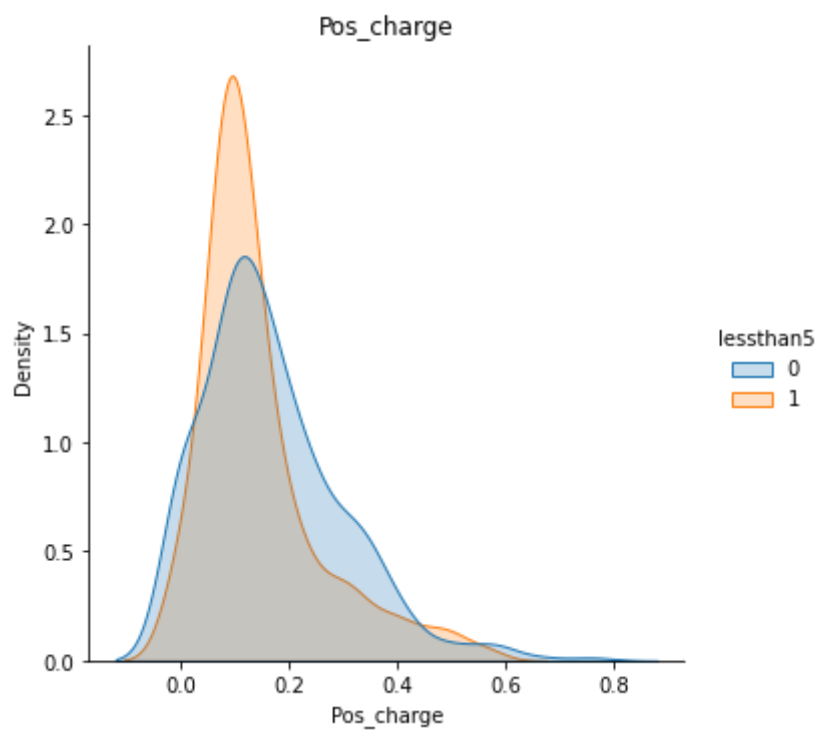
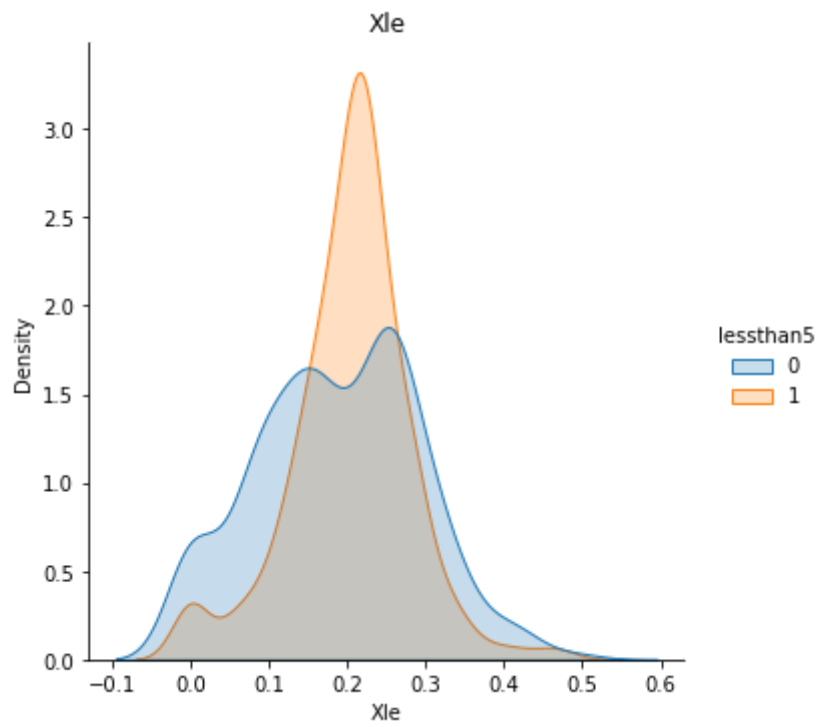


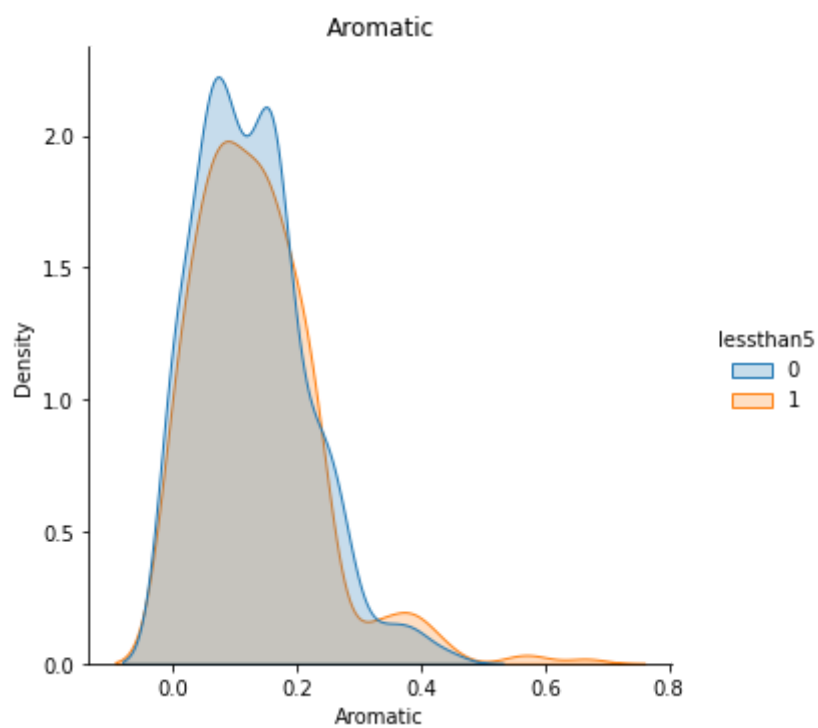
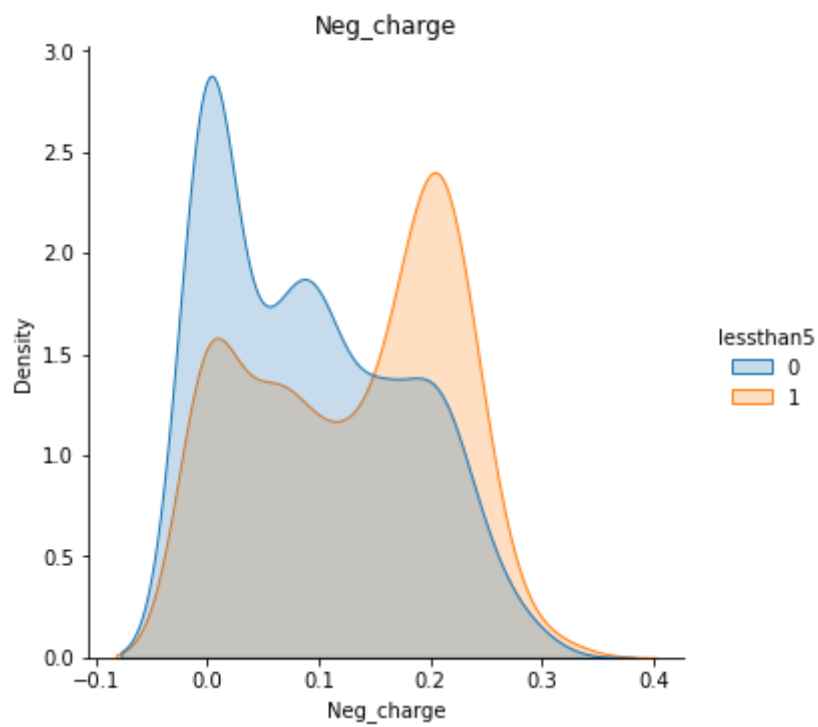


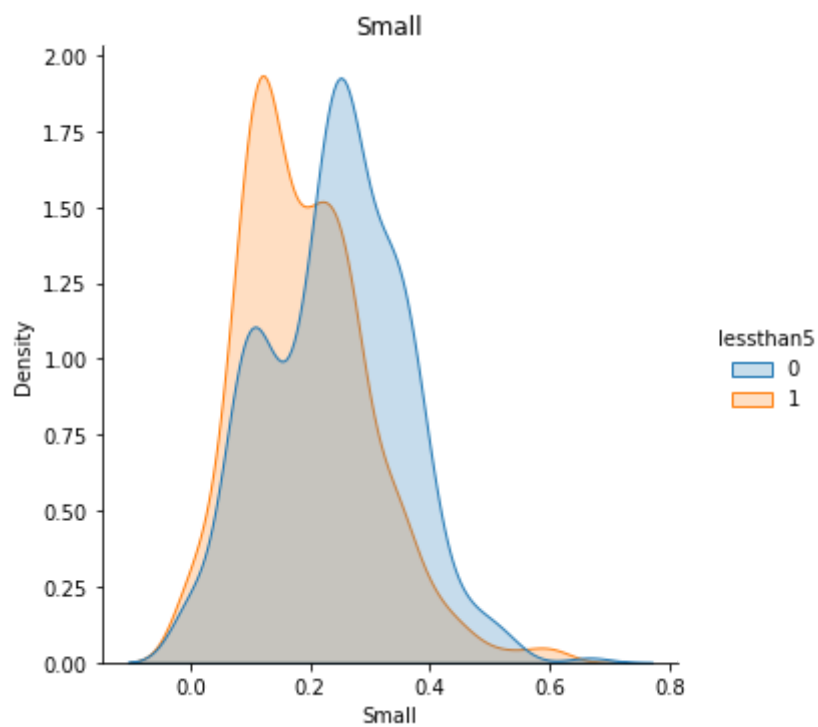
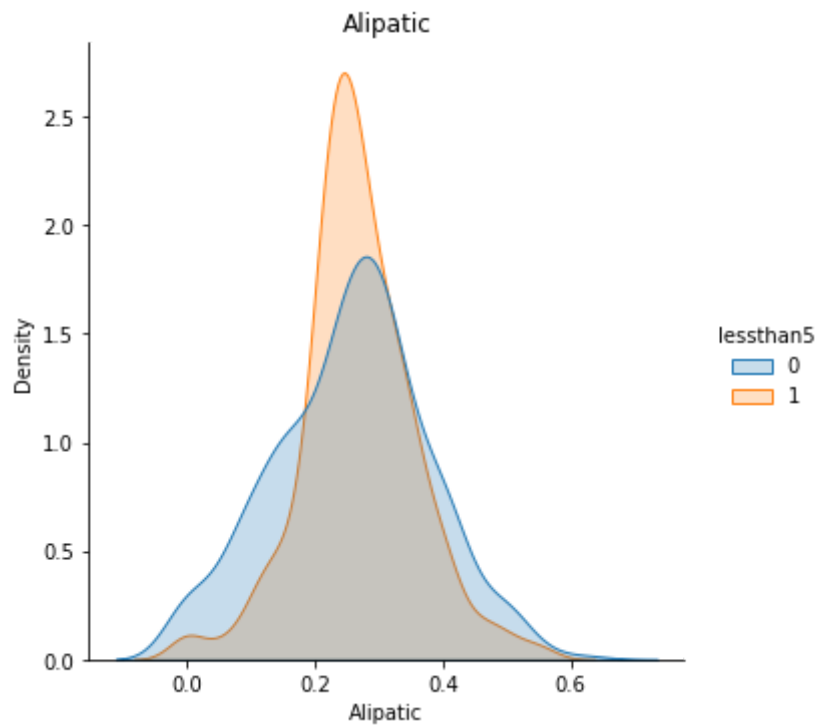


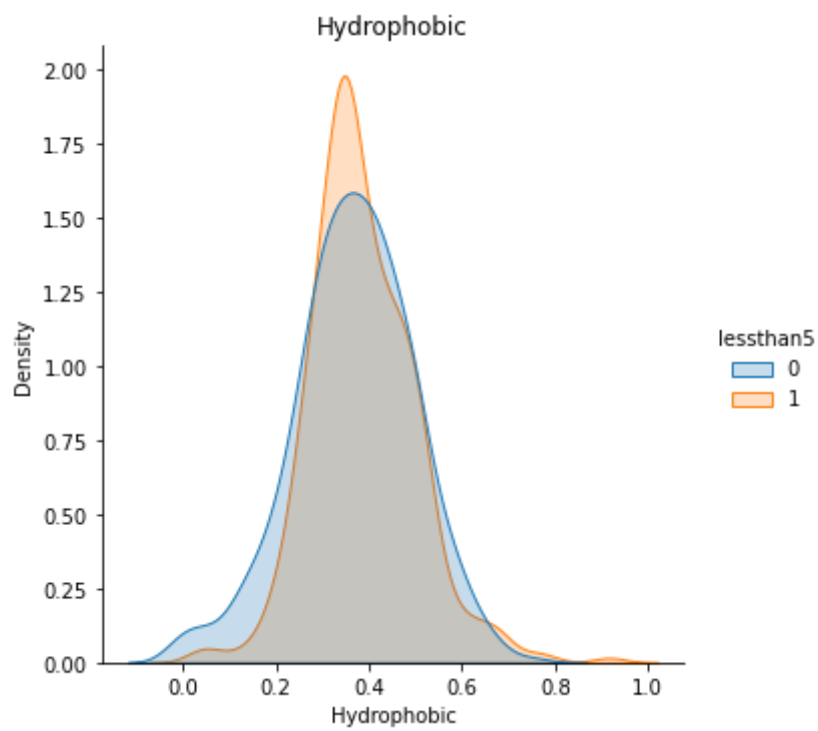
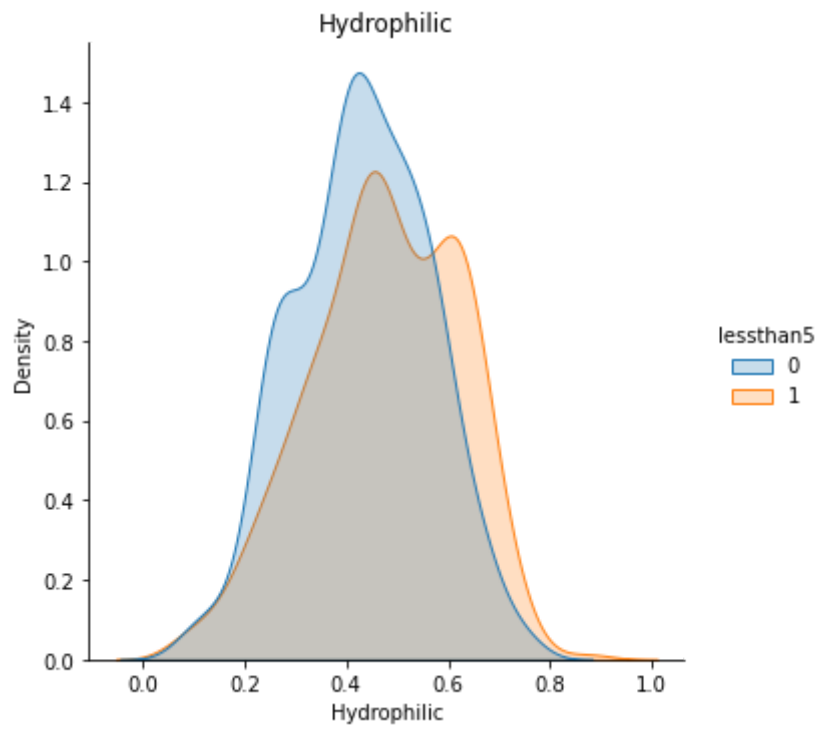


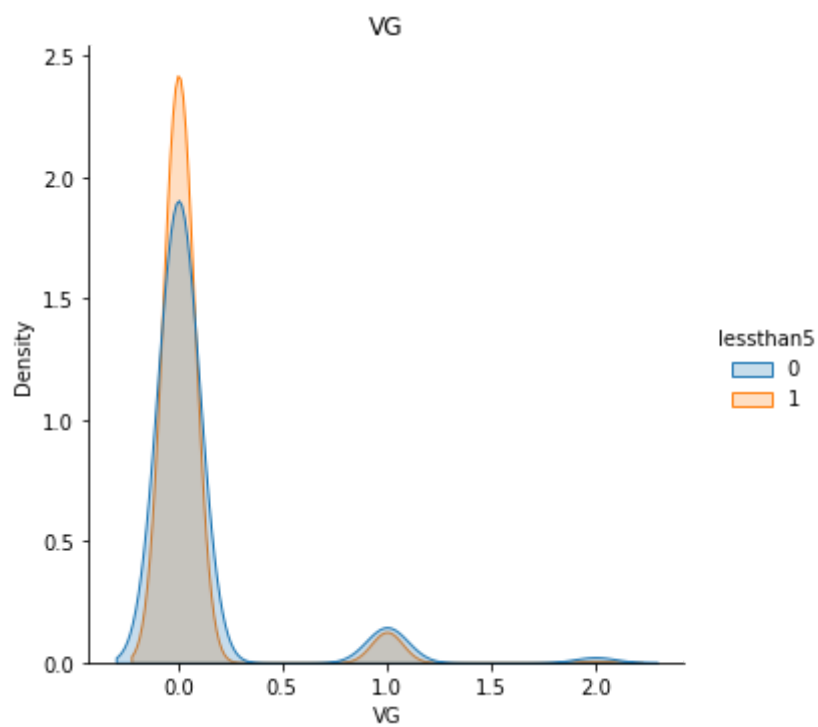
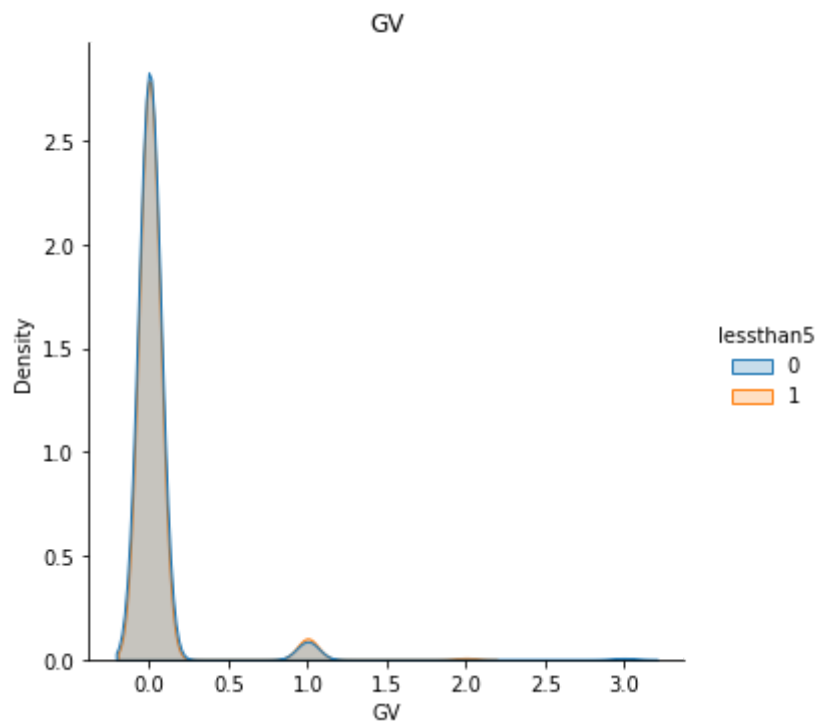


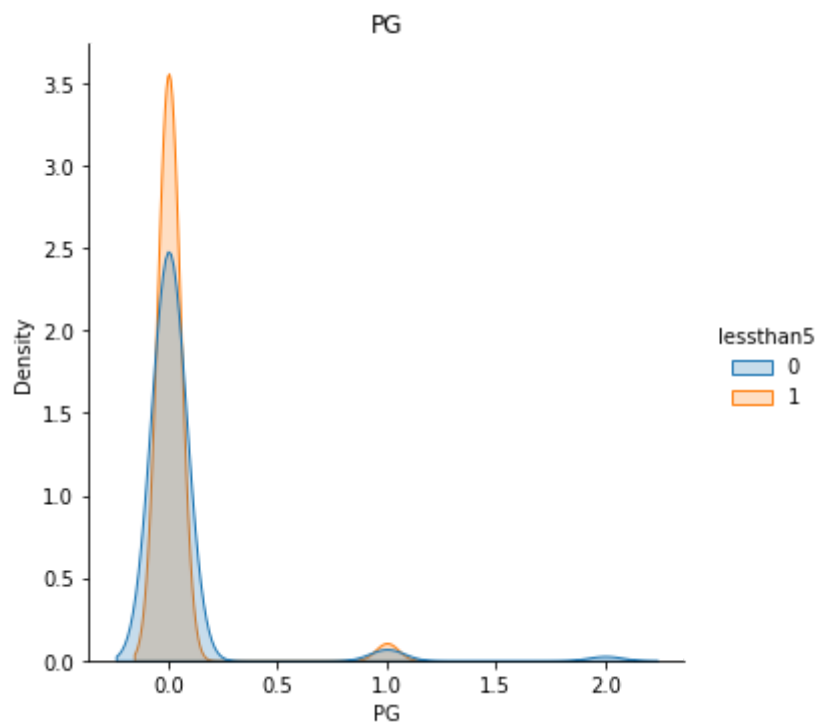
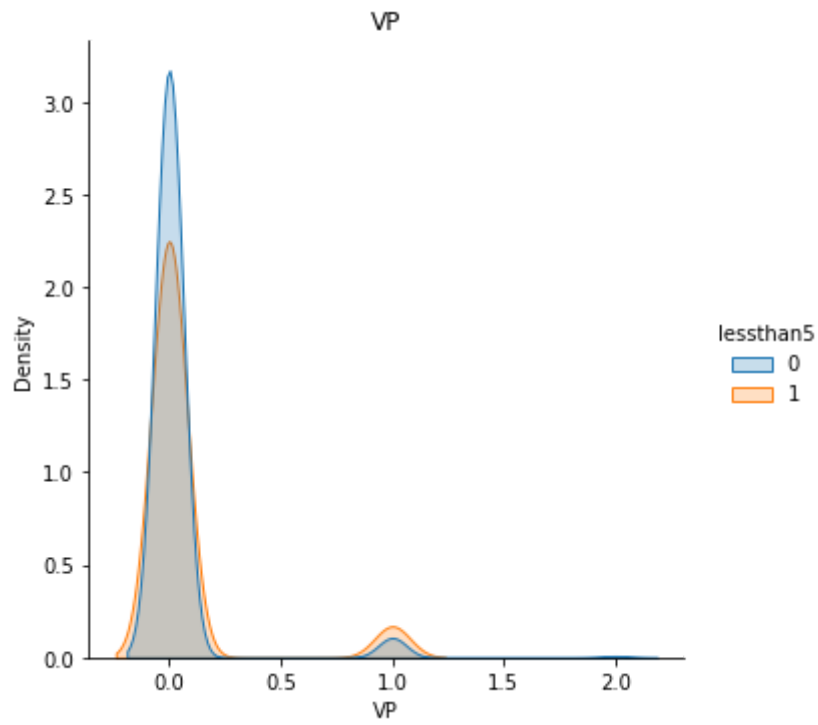


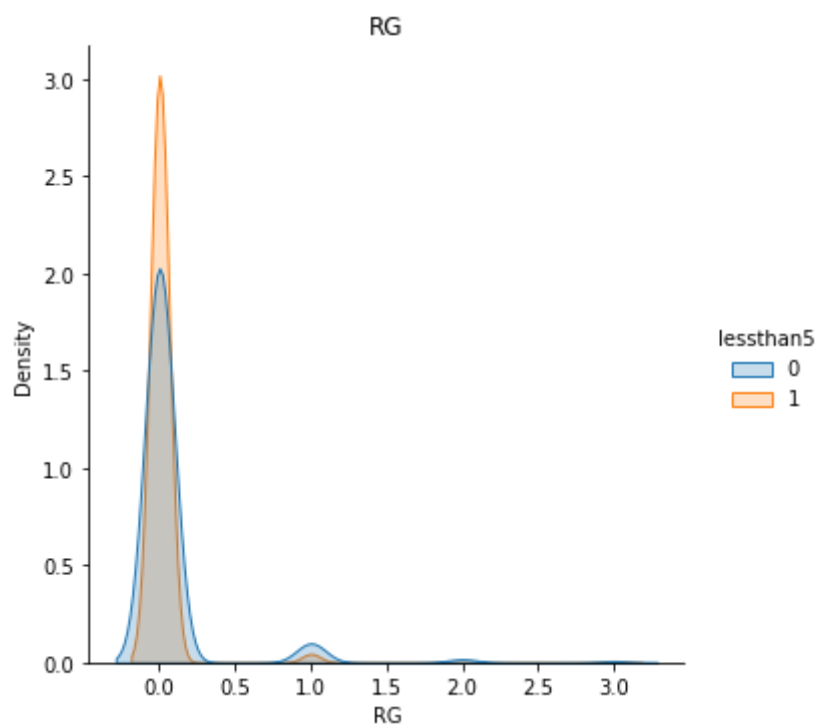
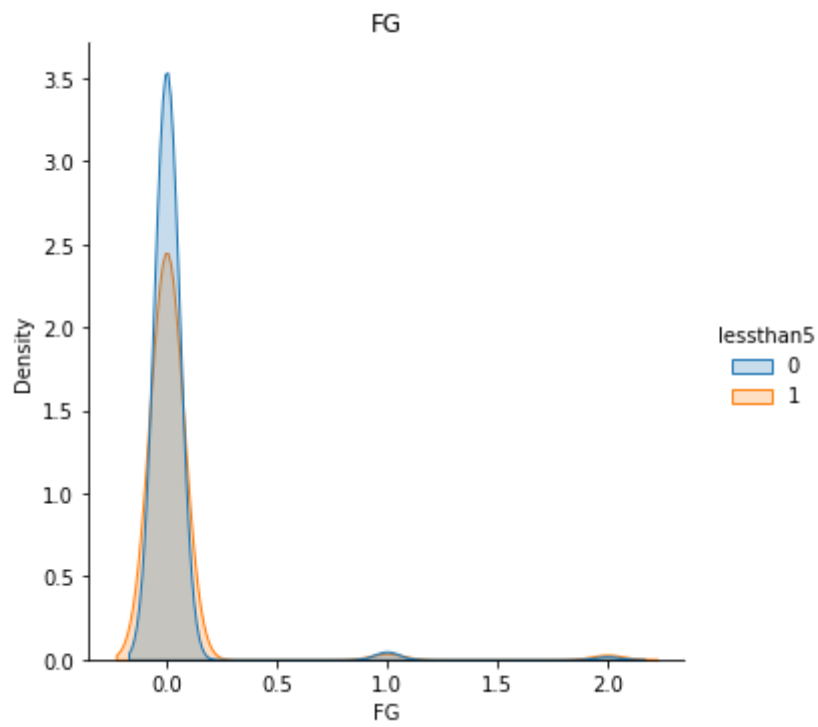


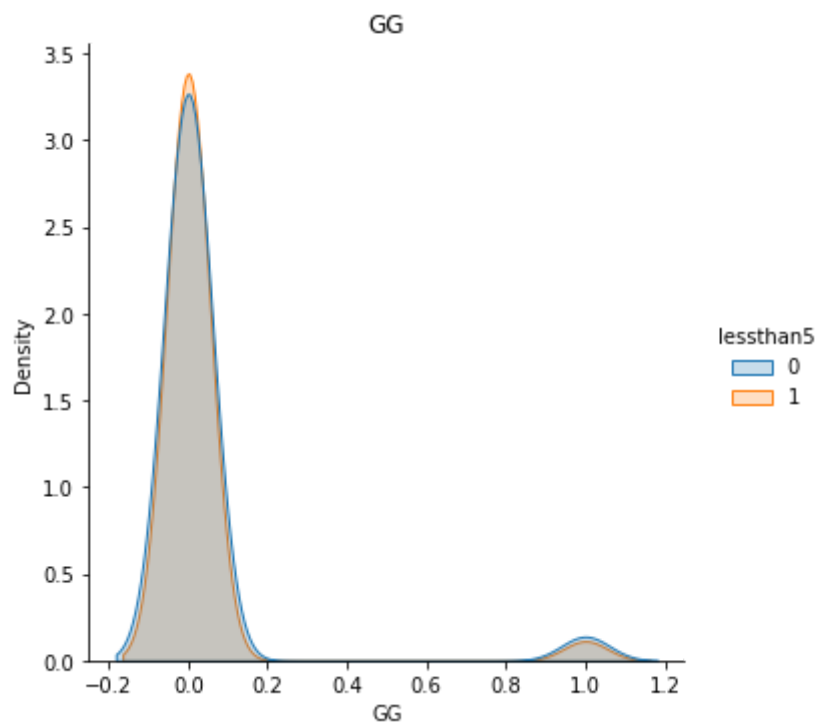
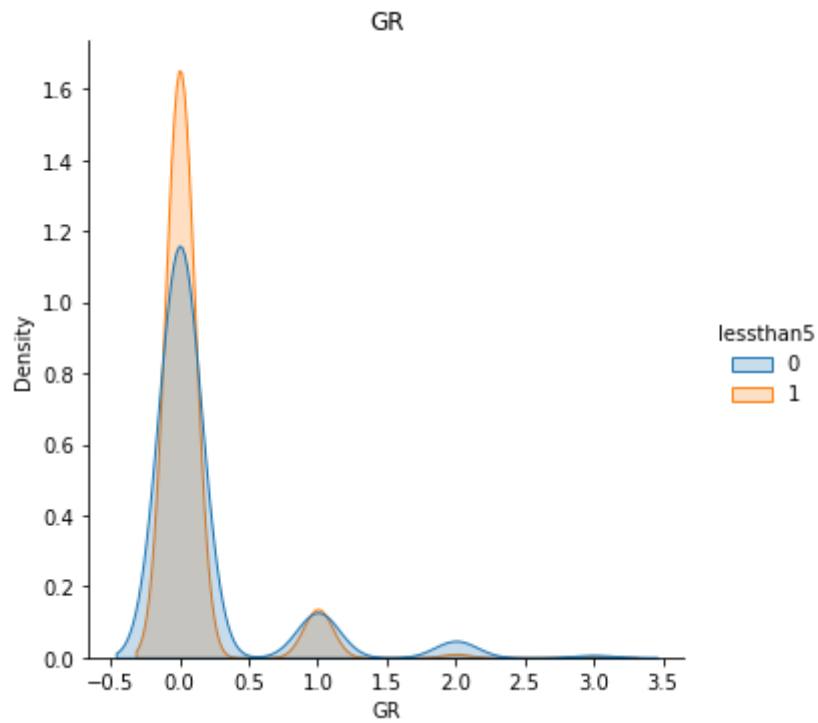


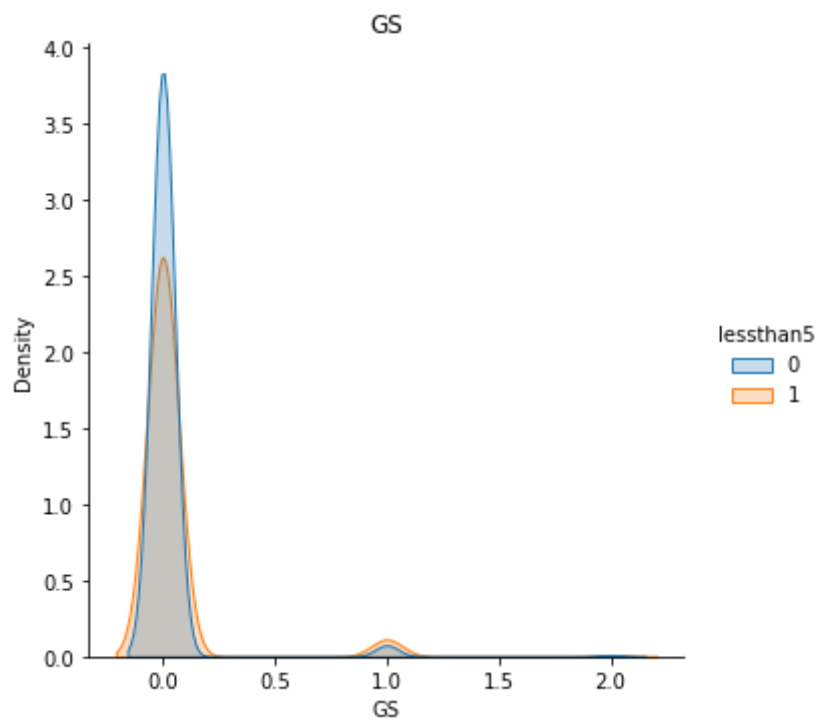
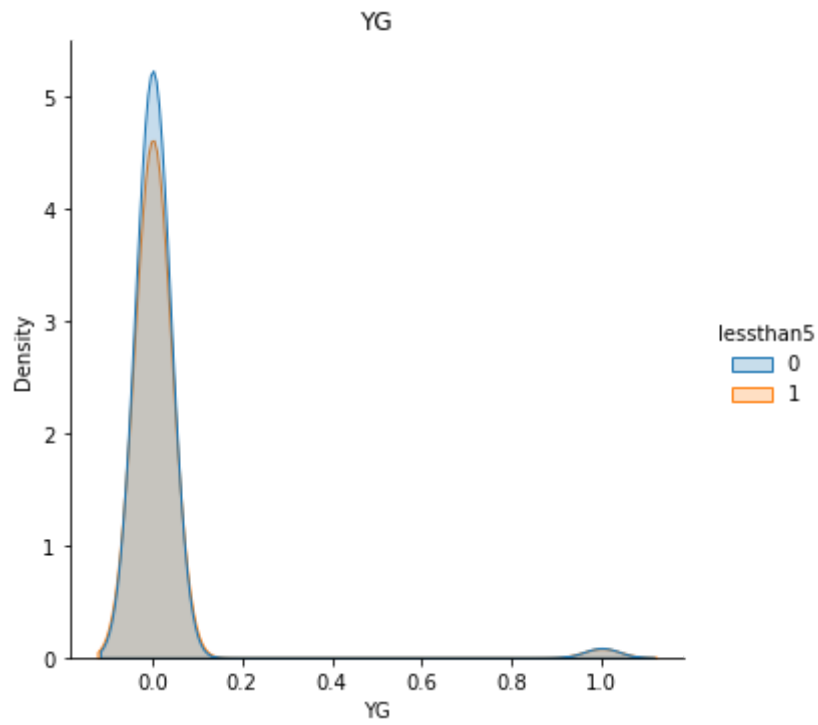


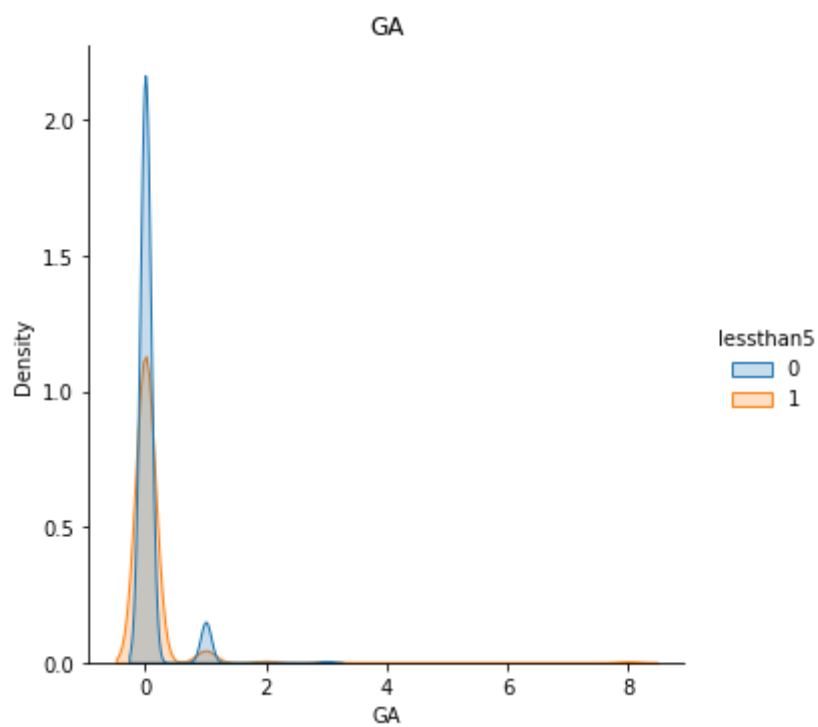
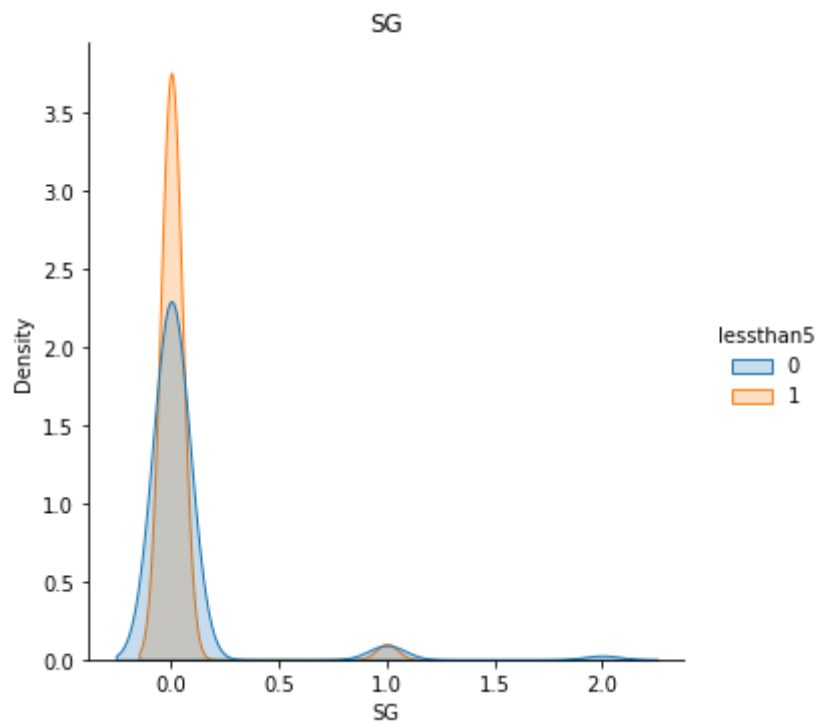


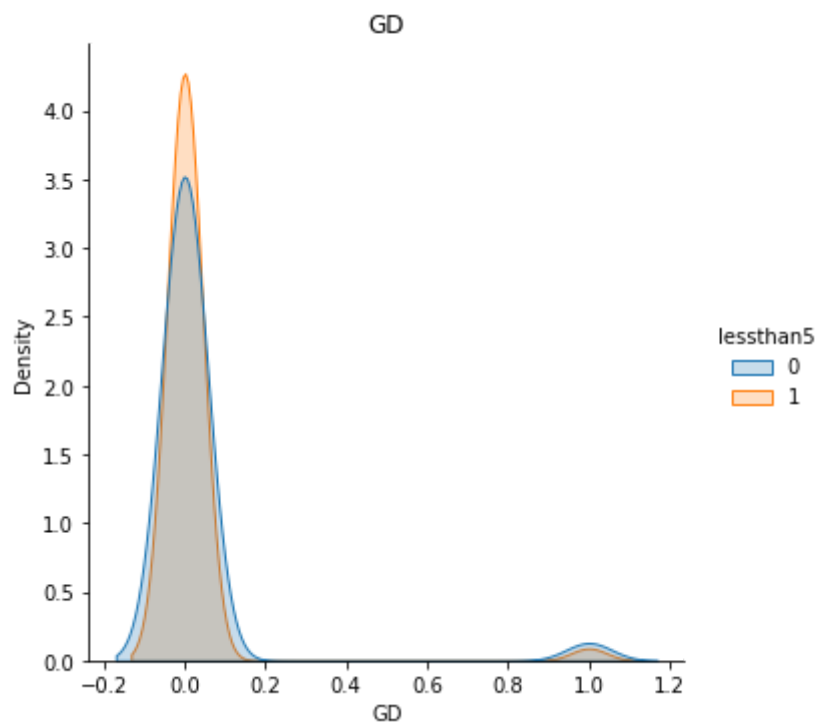
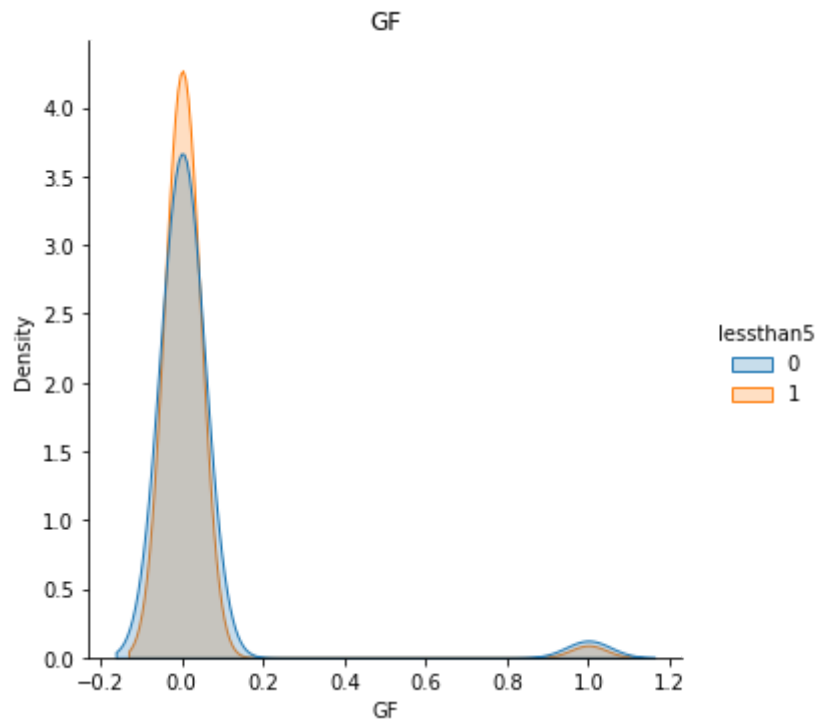


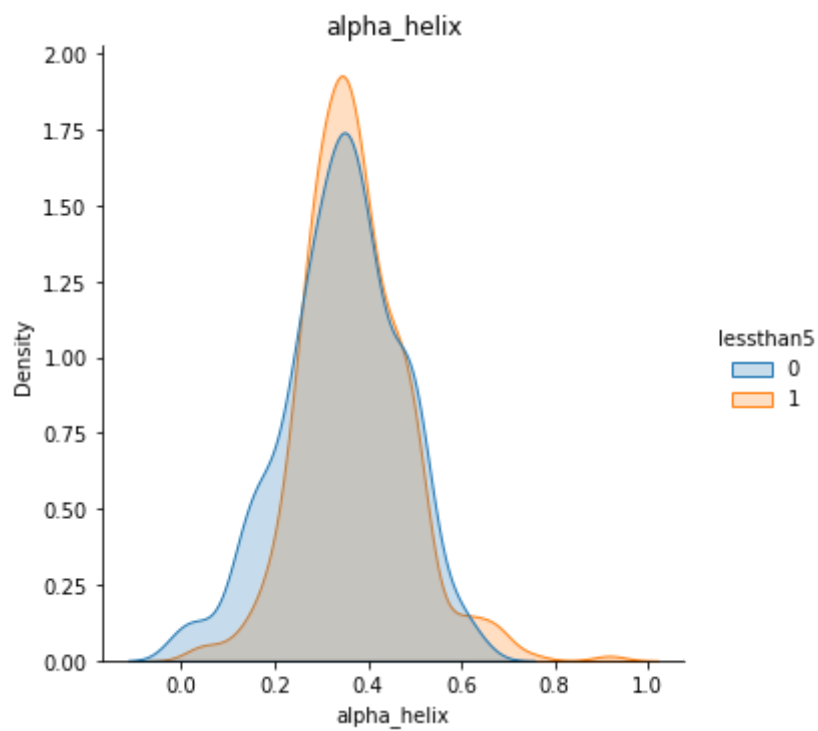
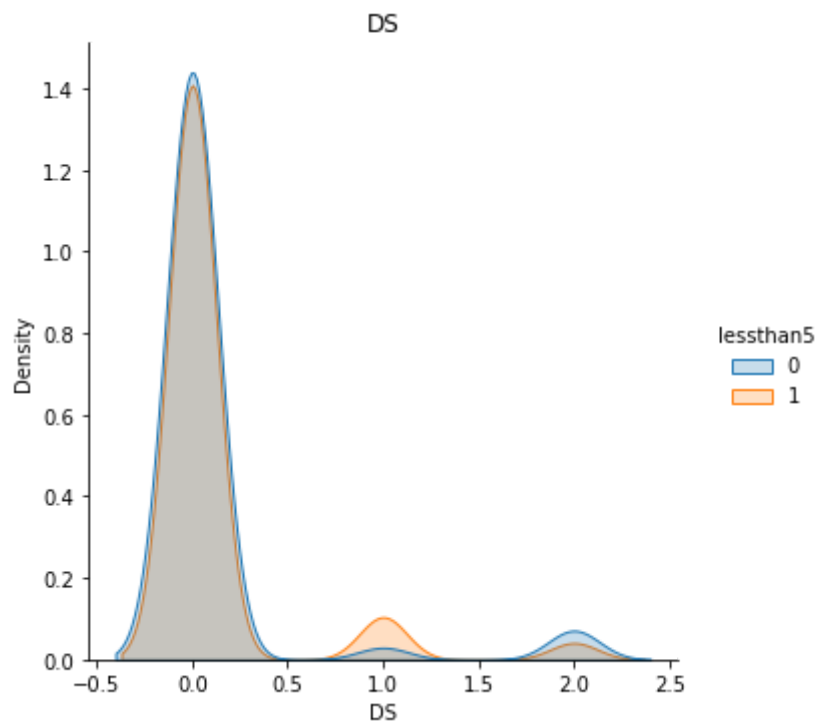


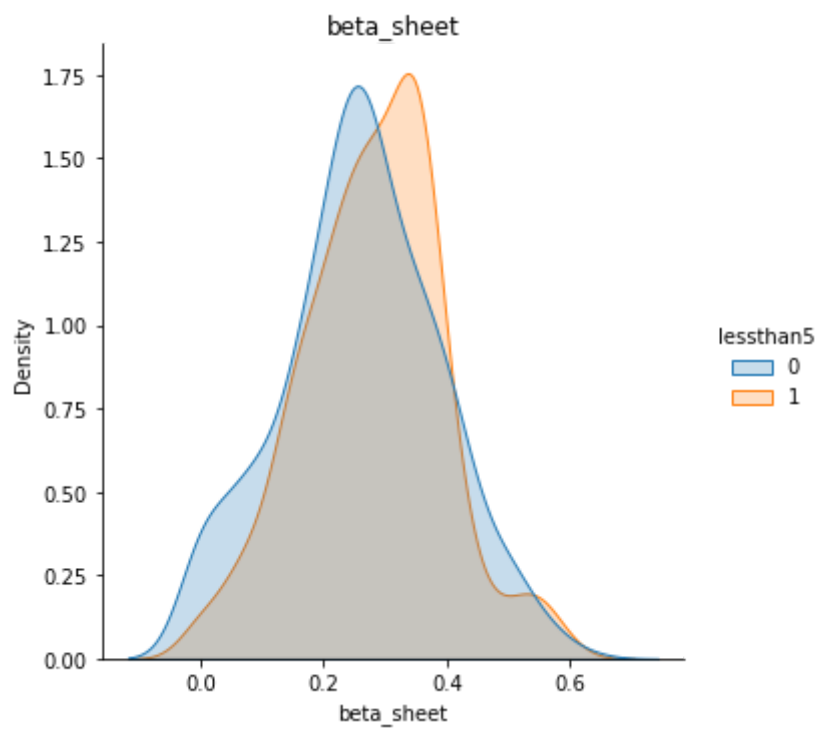
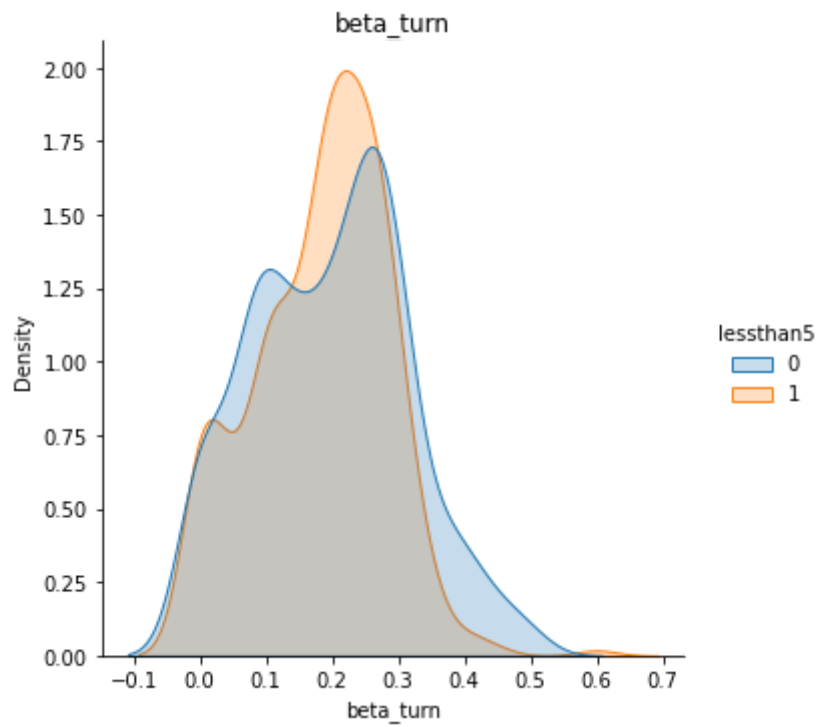


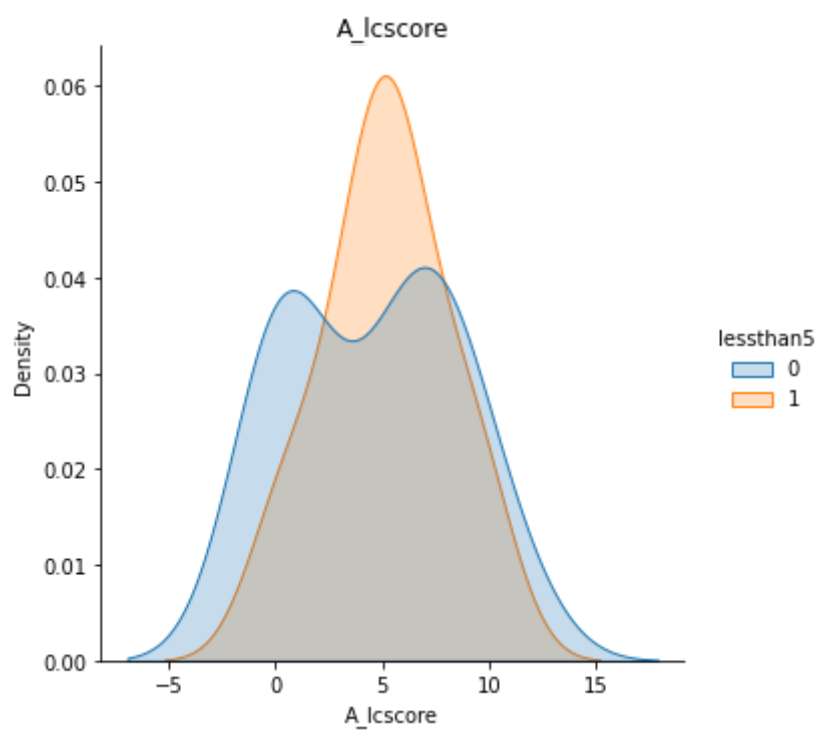
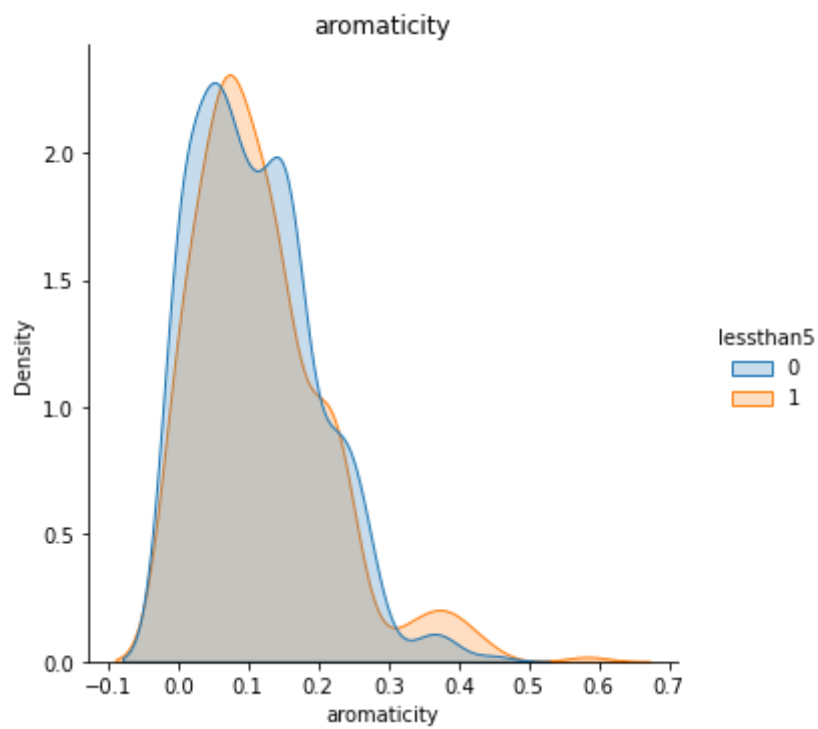


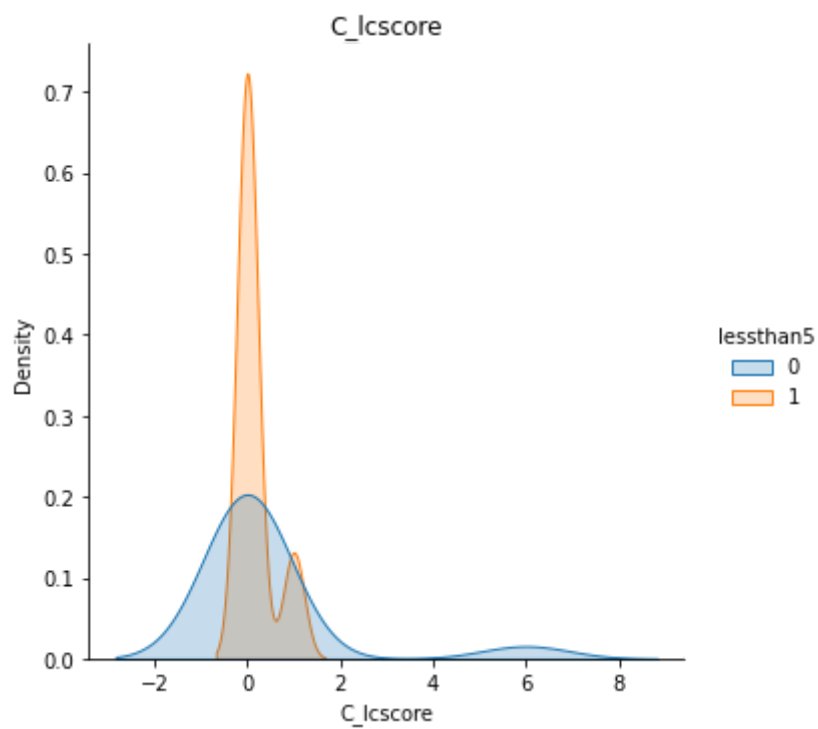
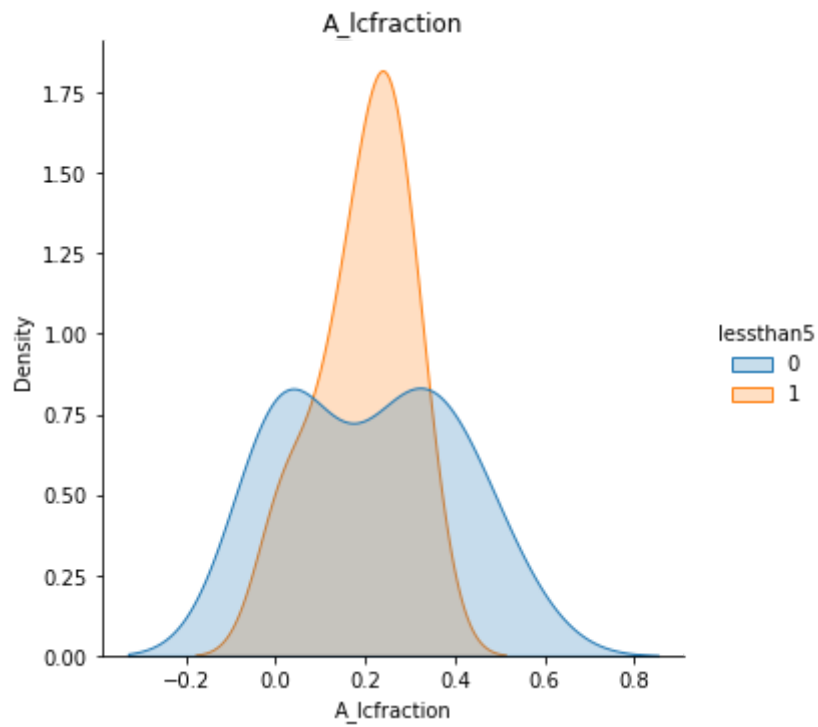


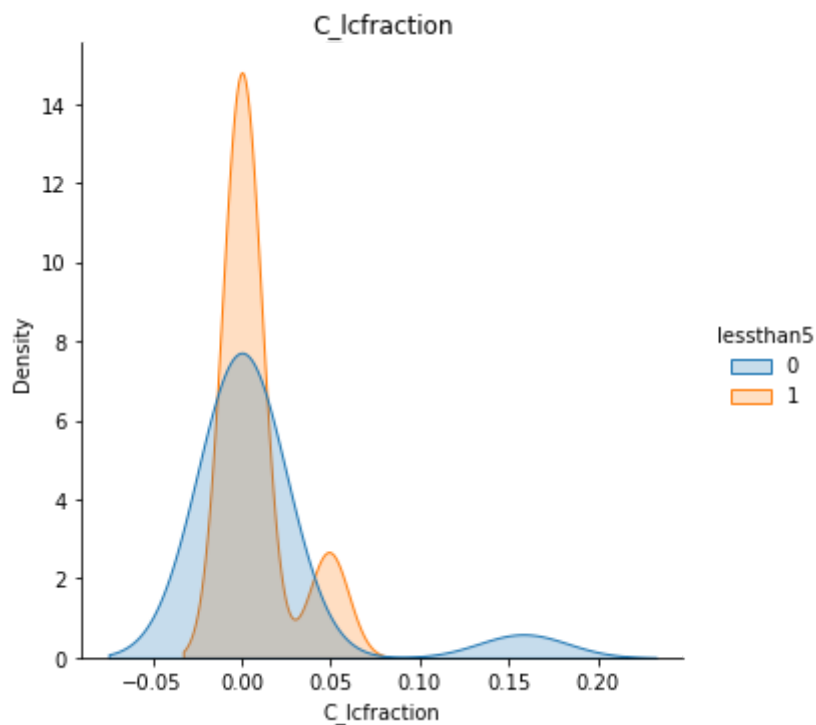




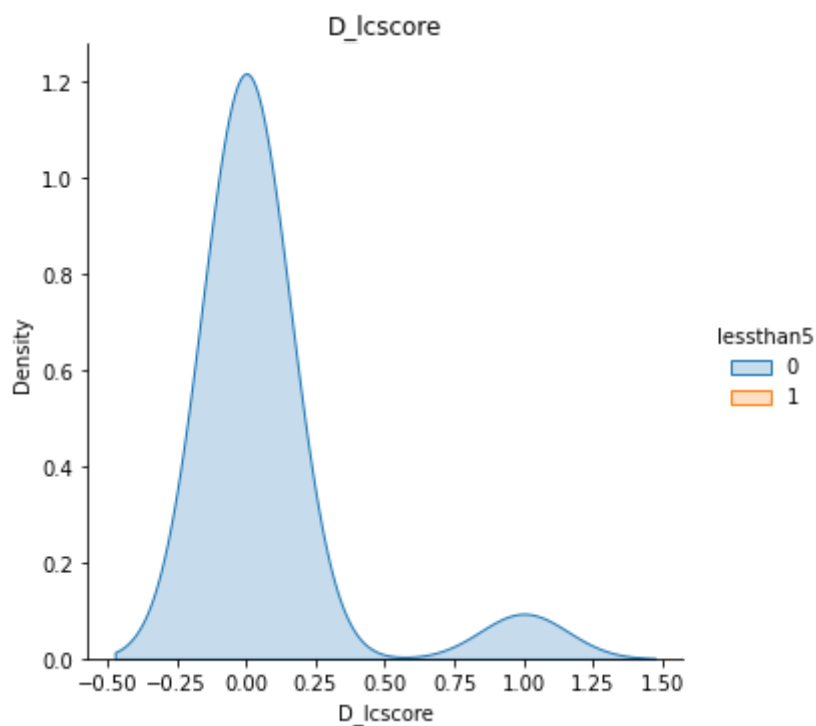




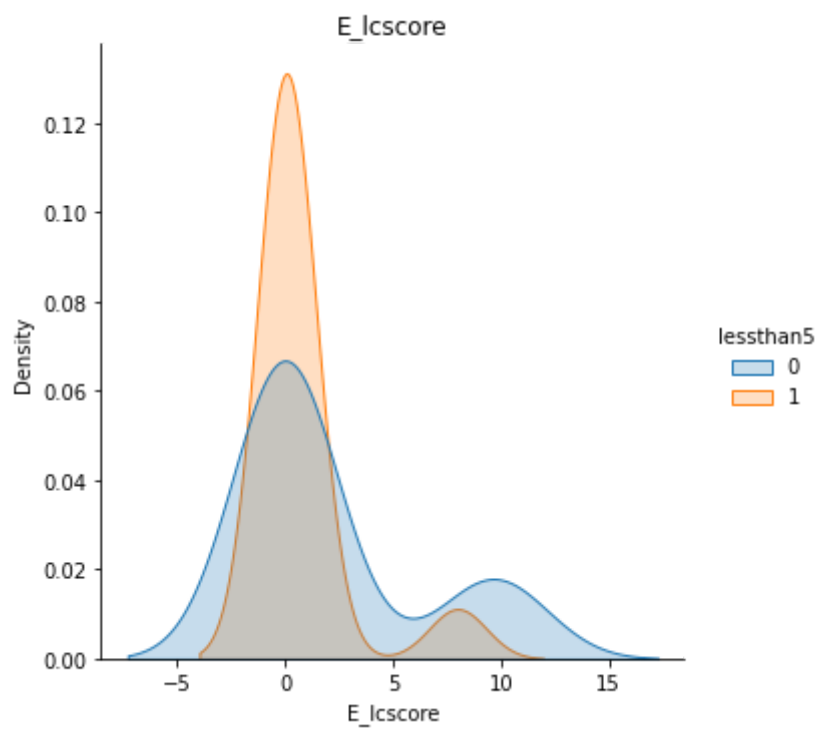
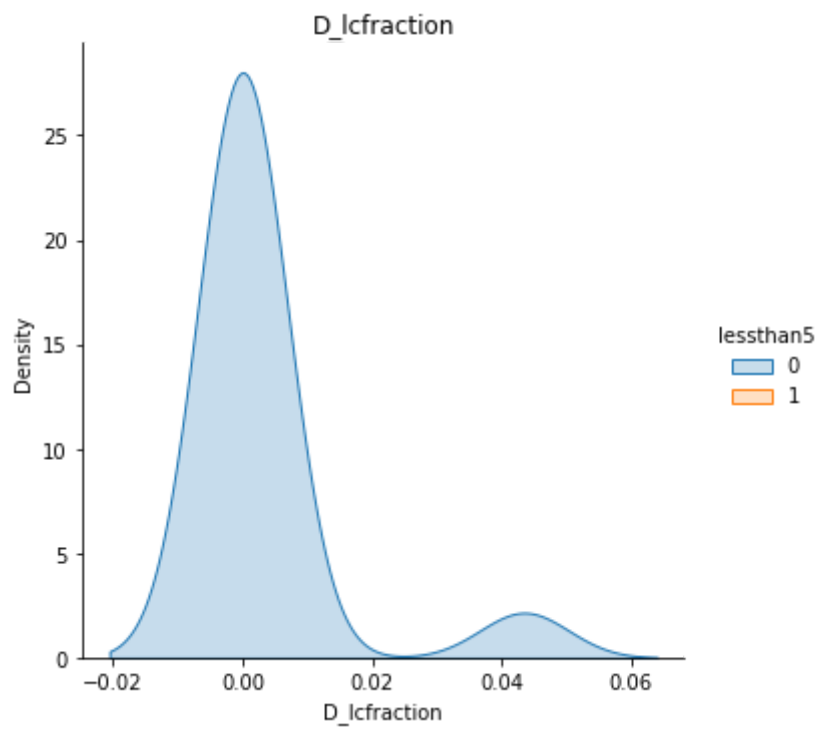


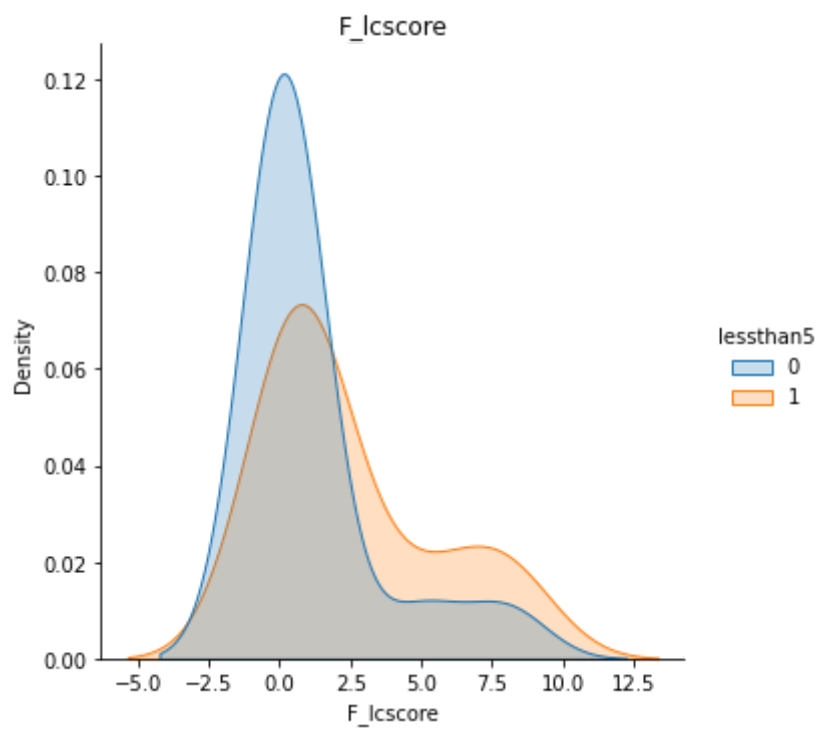
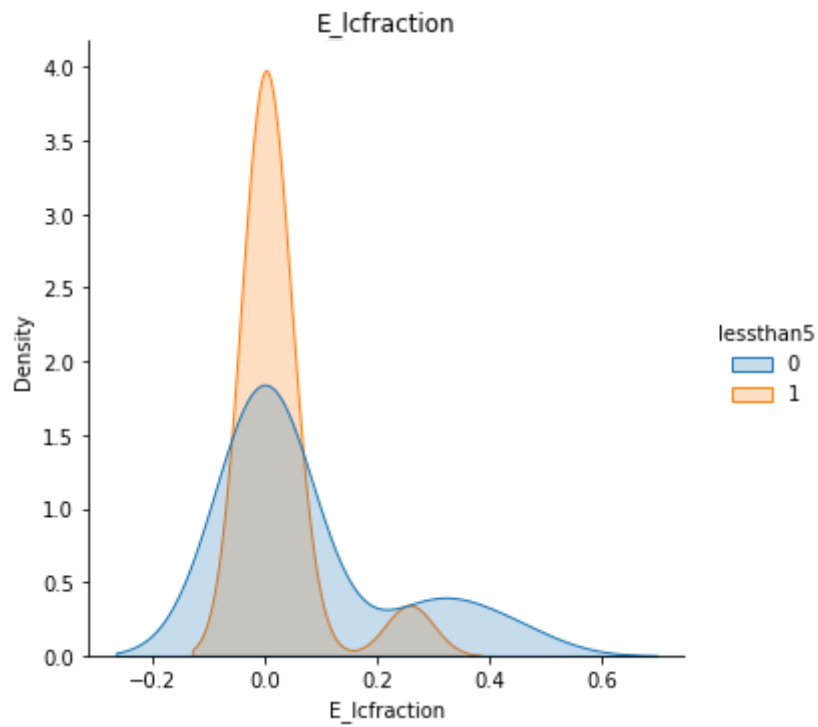


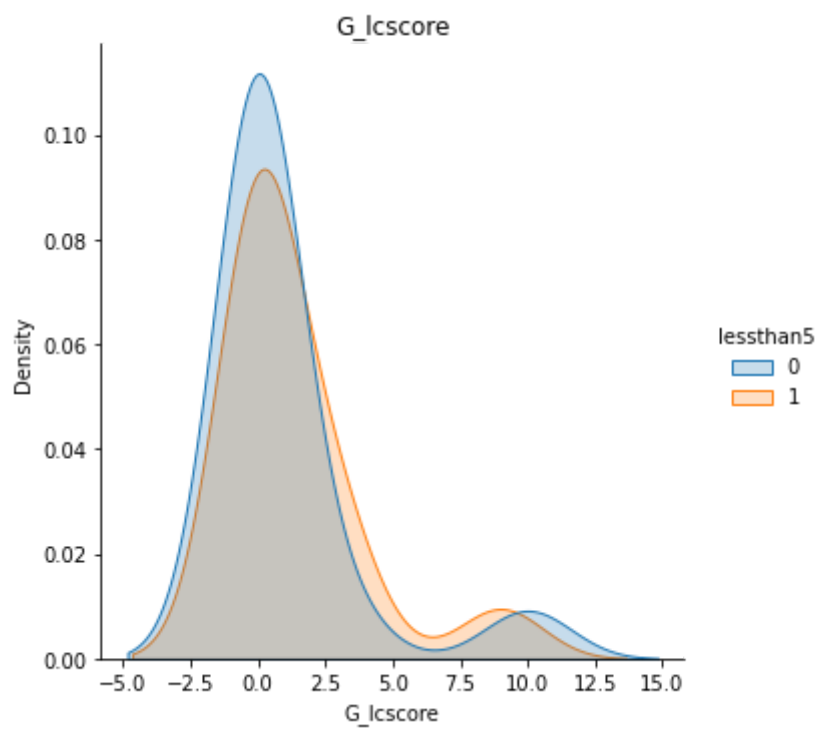
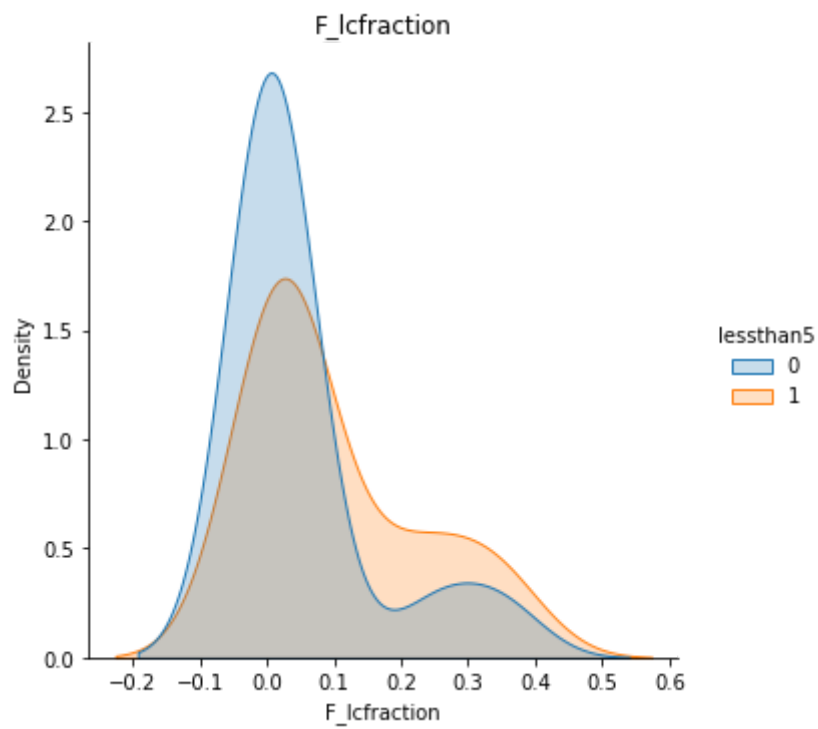
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warnings.warn(msg, UserWarning)
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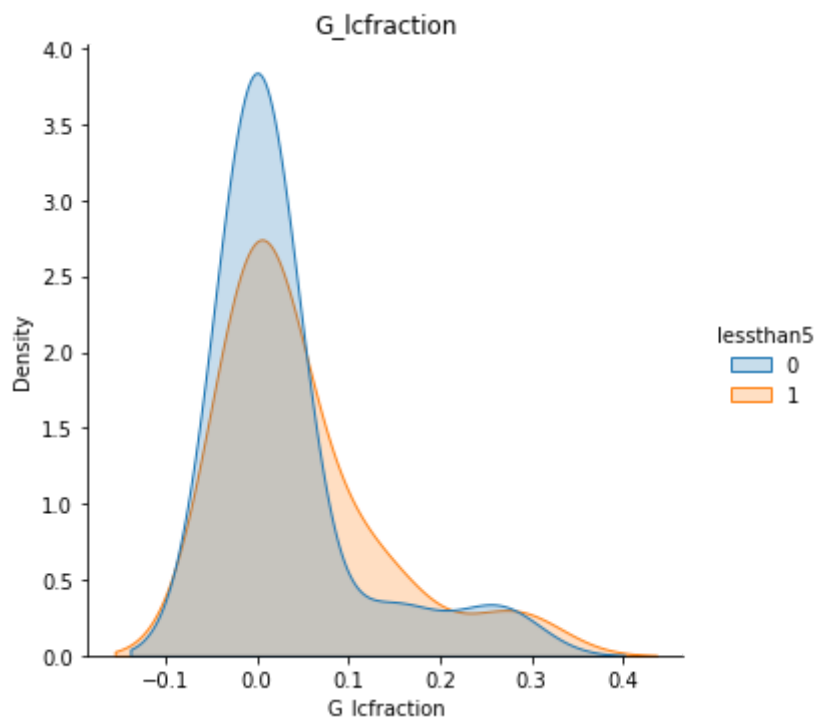


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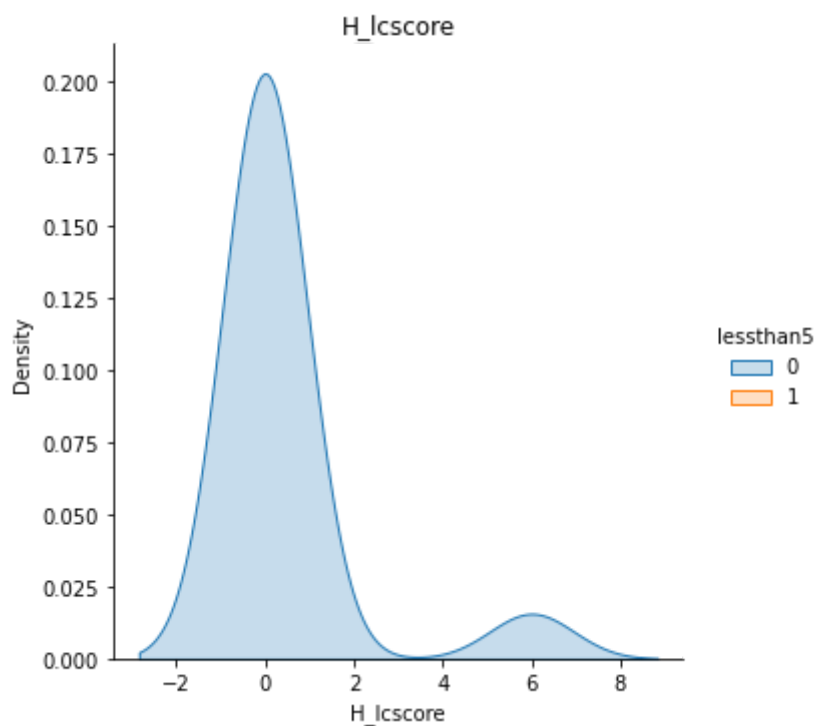




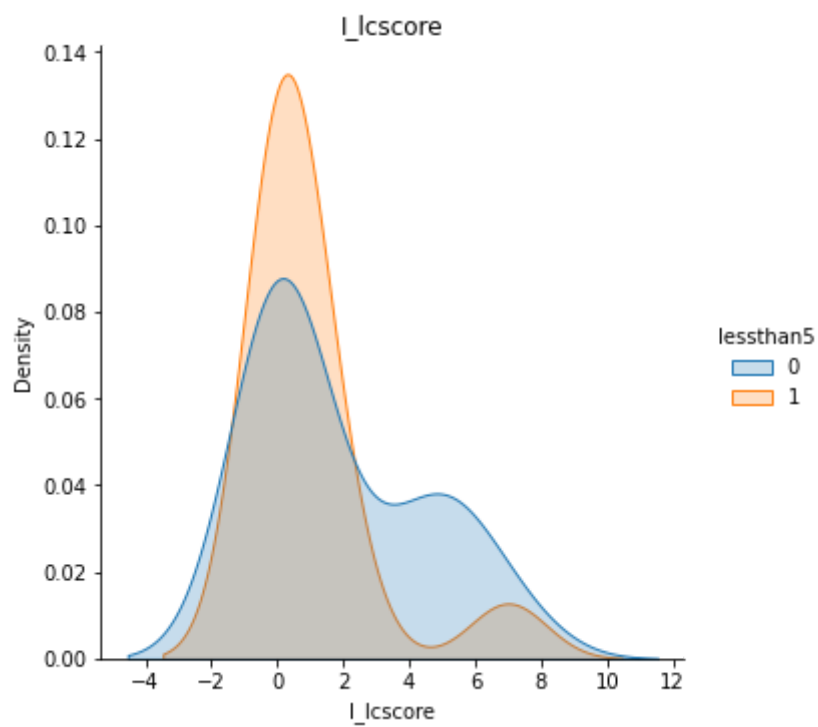
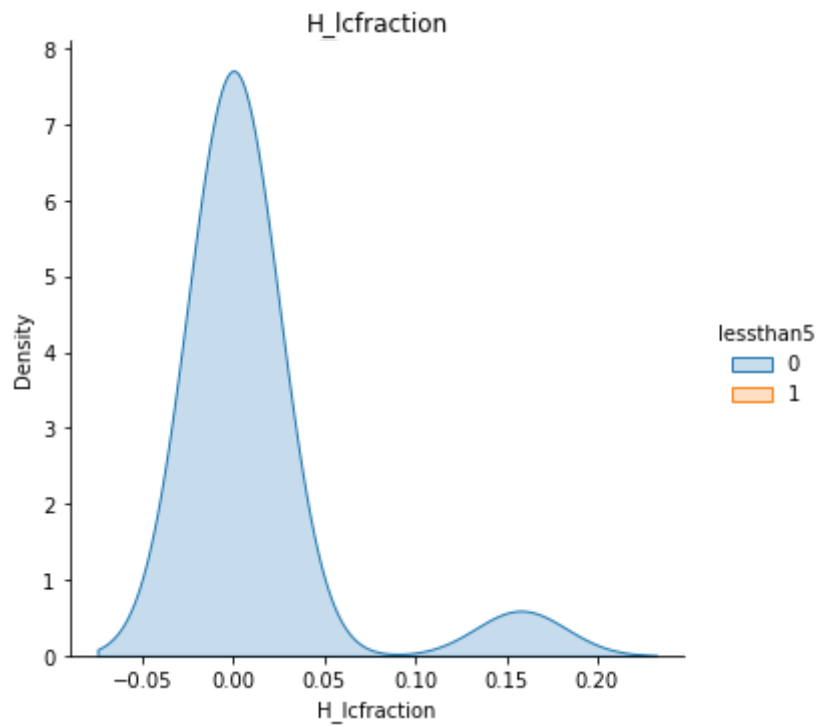


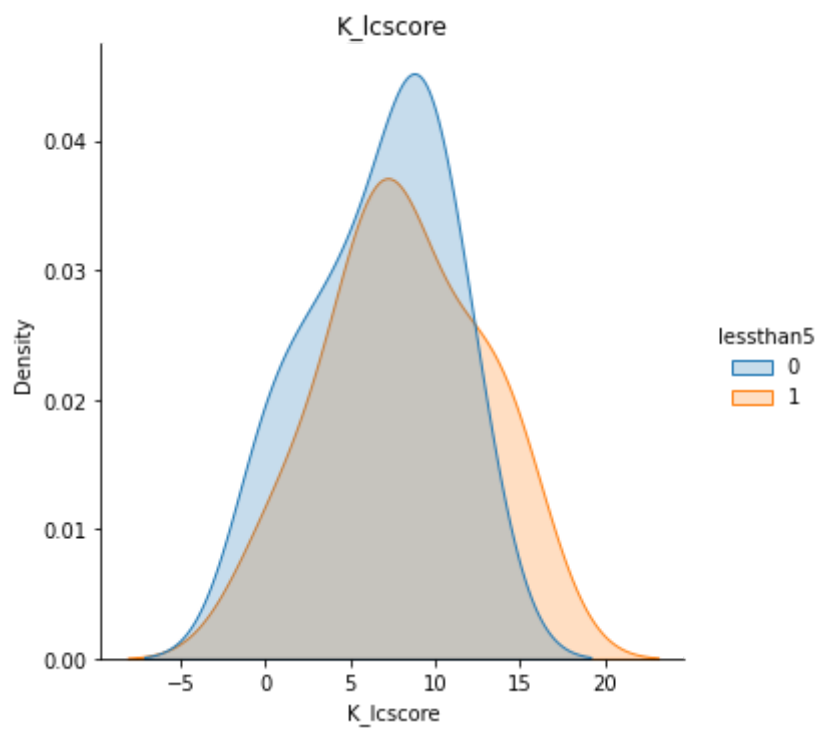
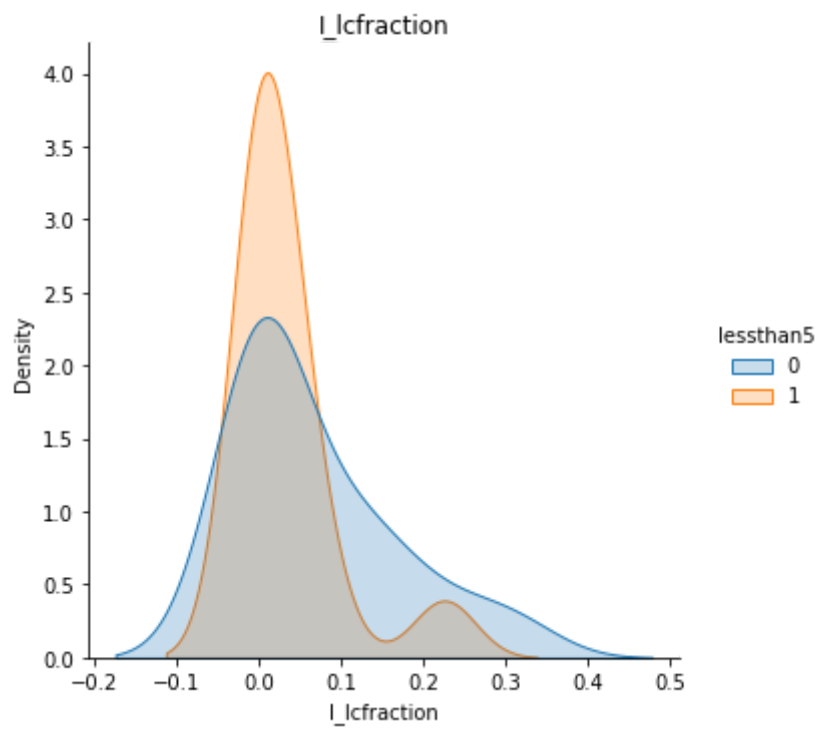


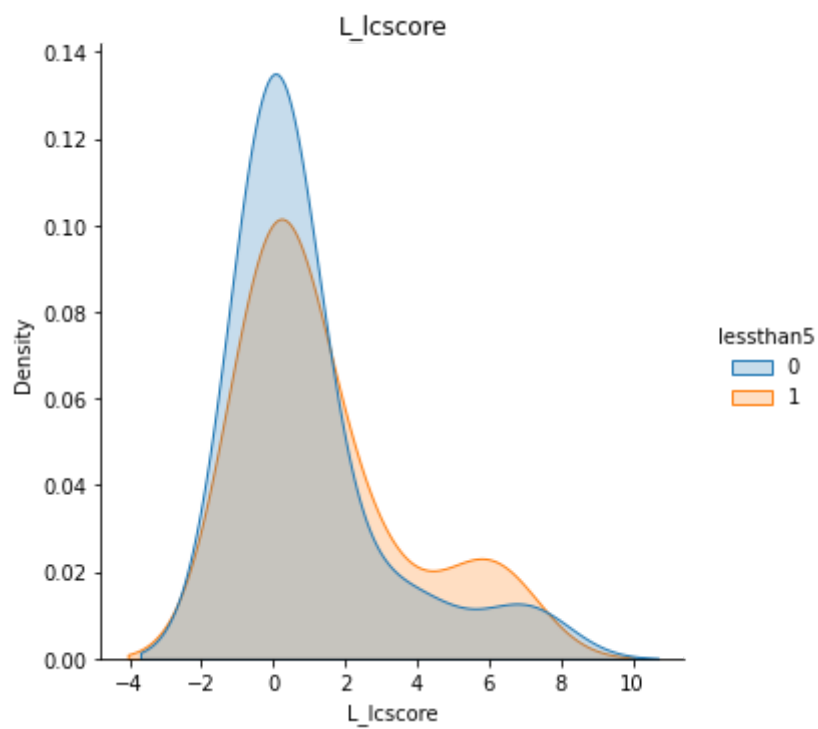
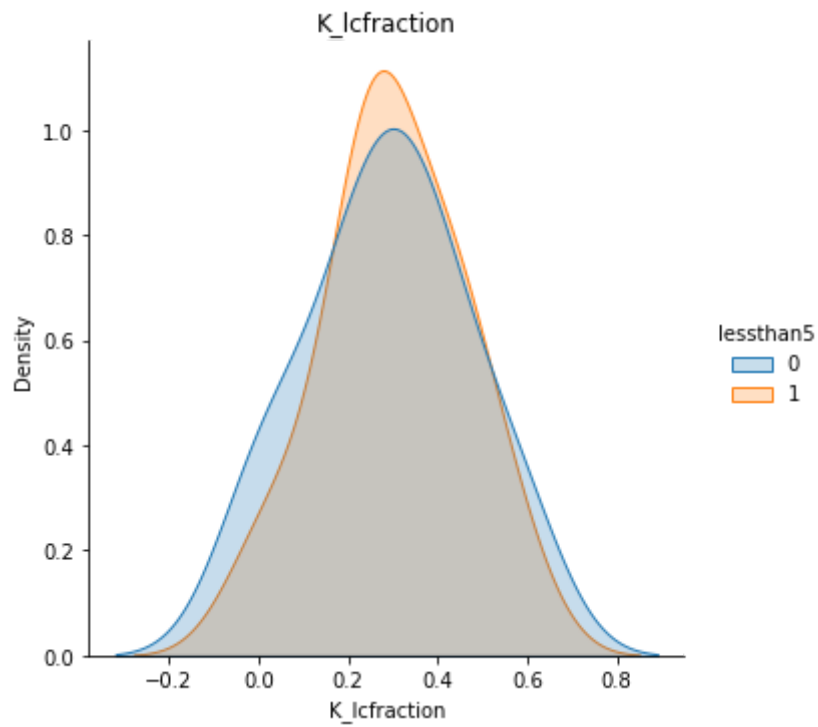
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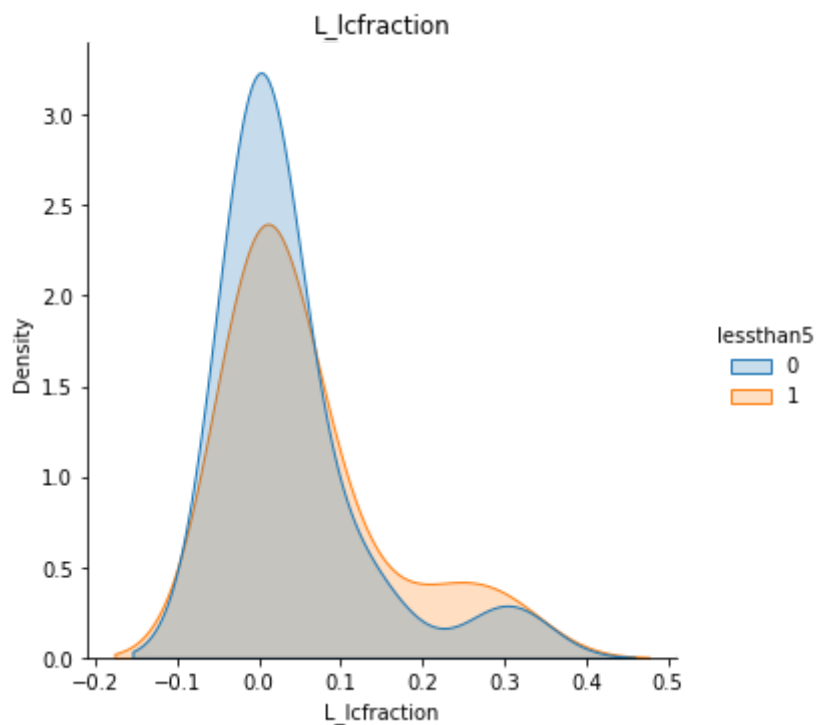


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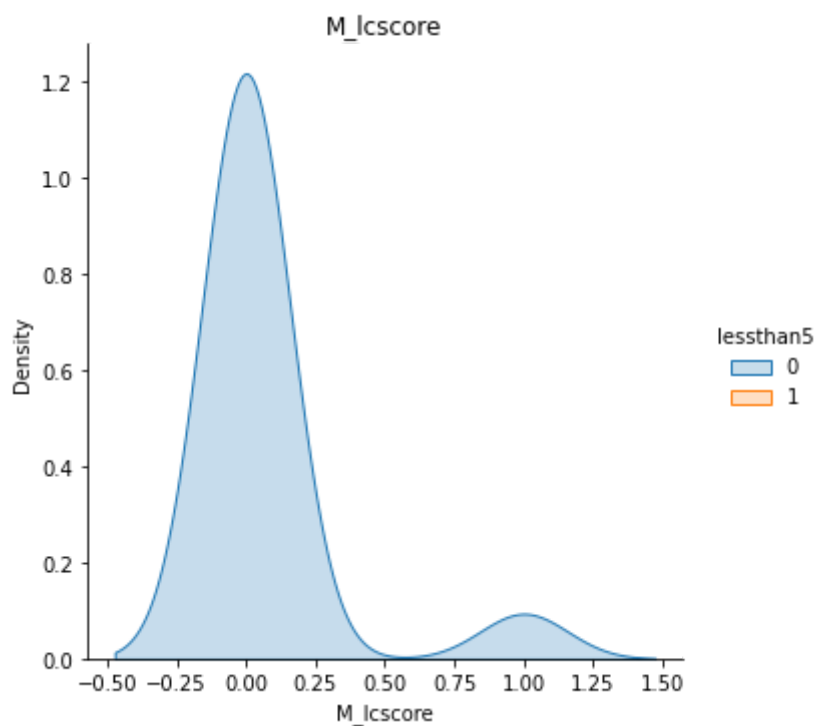




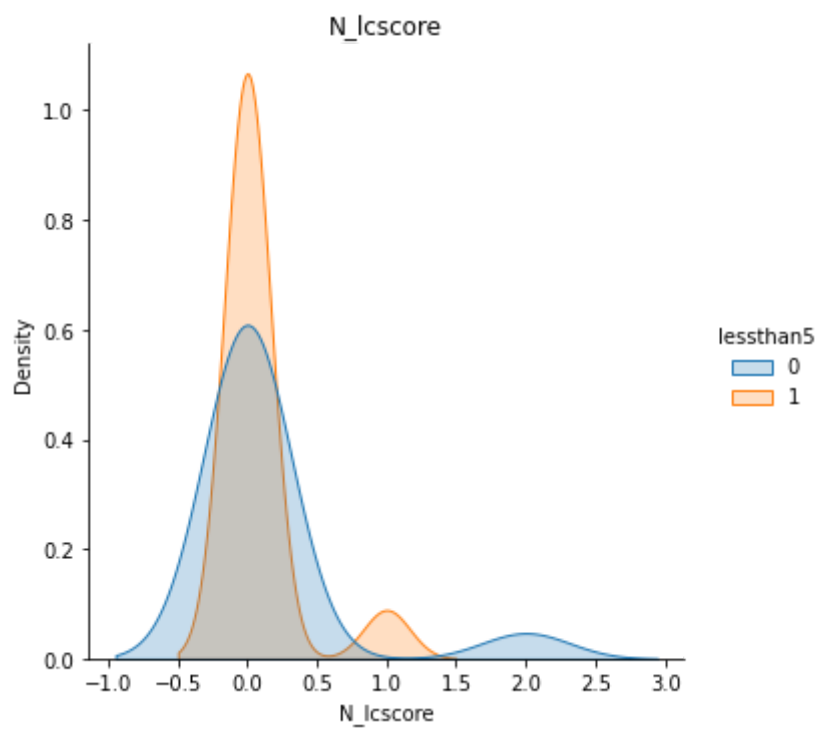
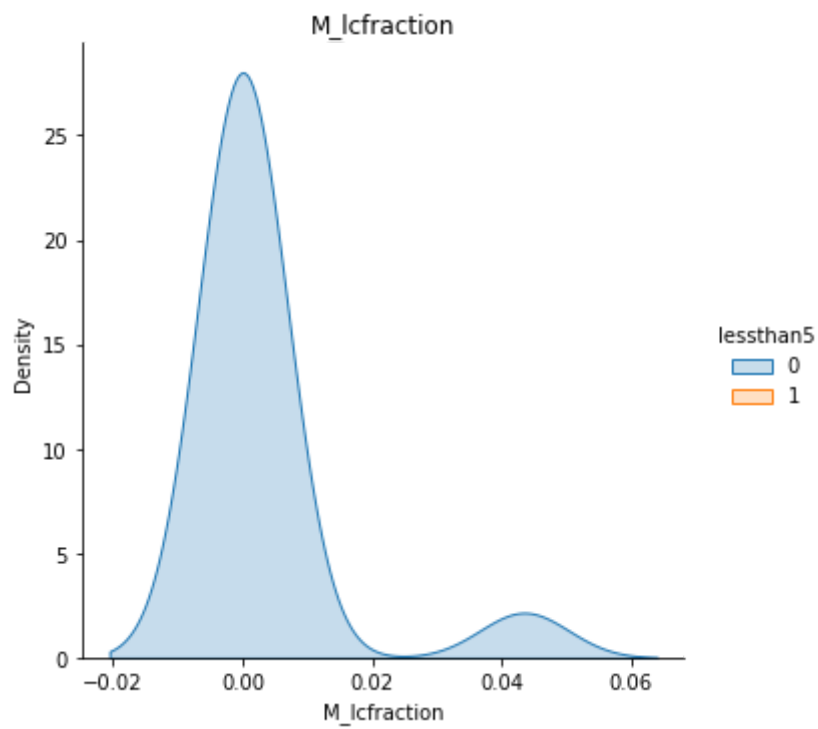


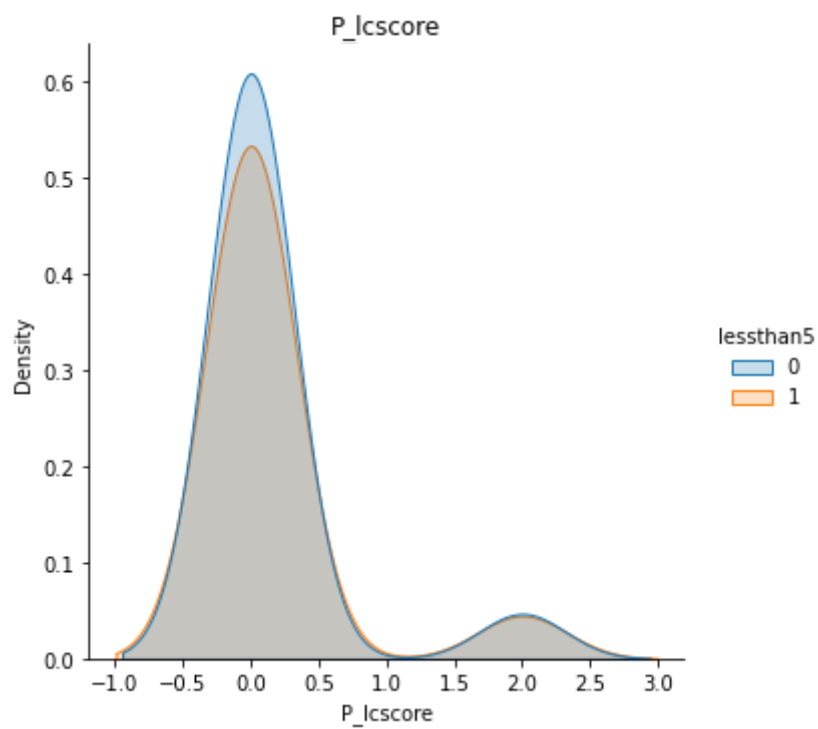
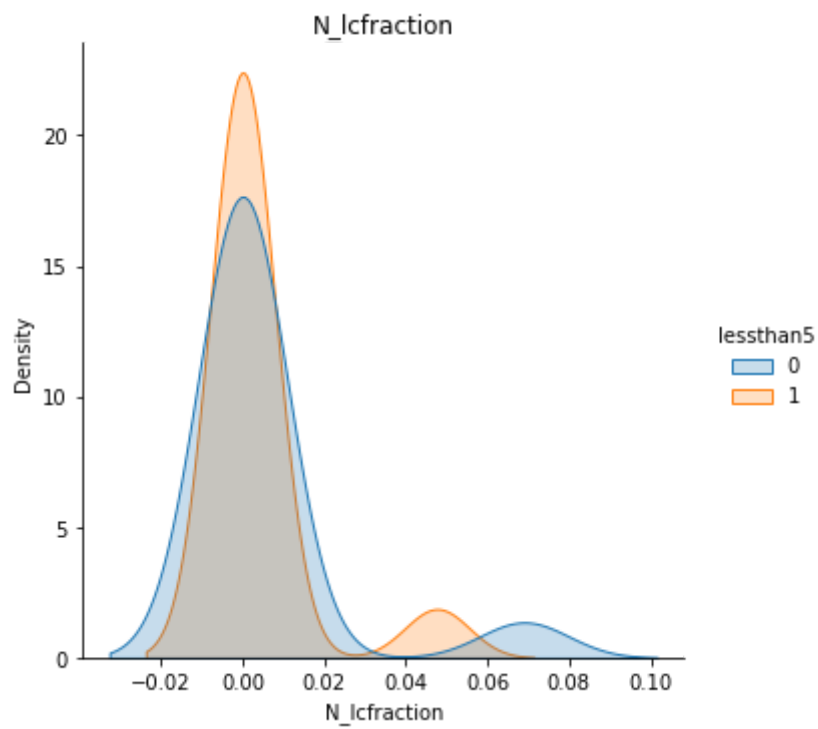


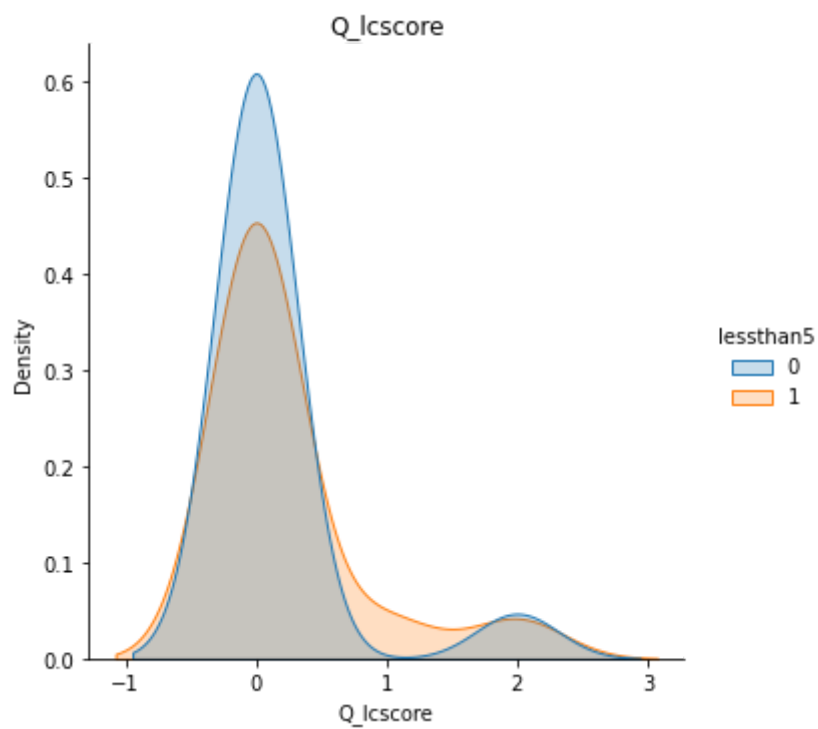
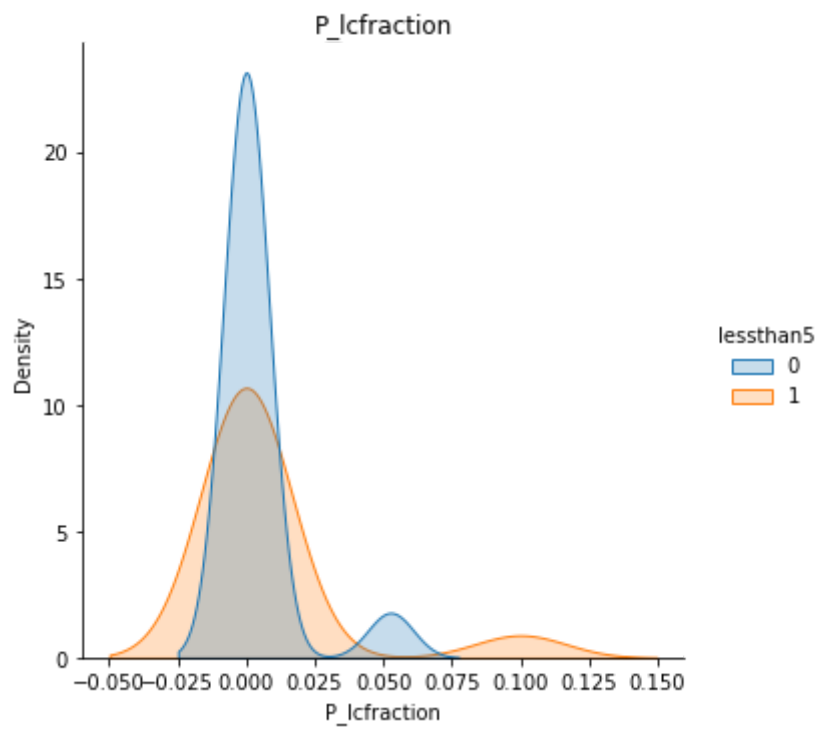
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```

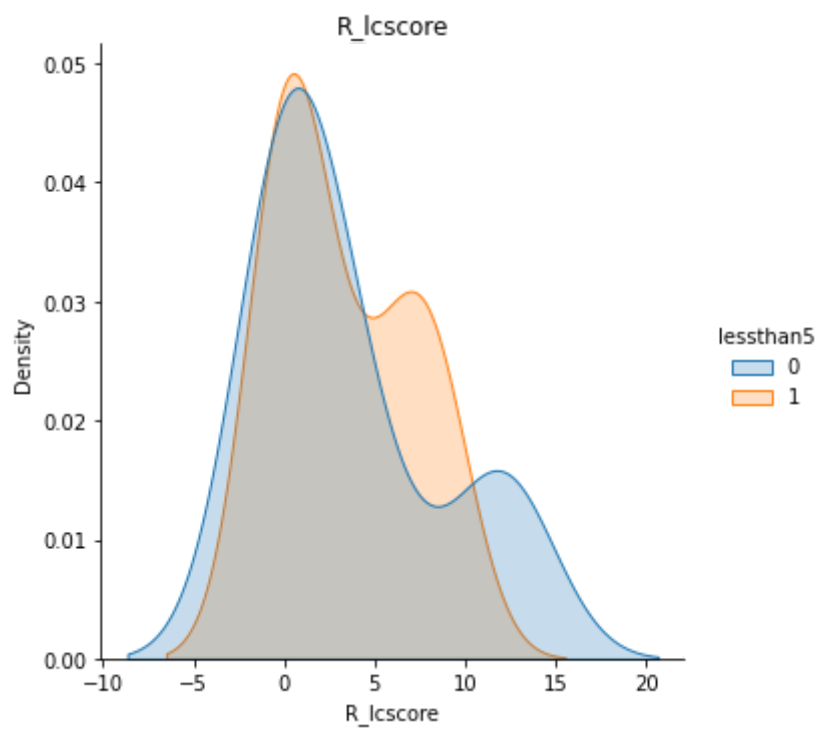
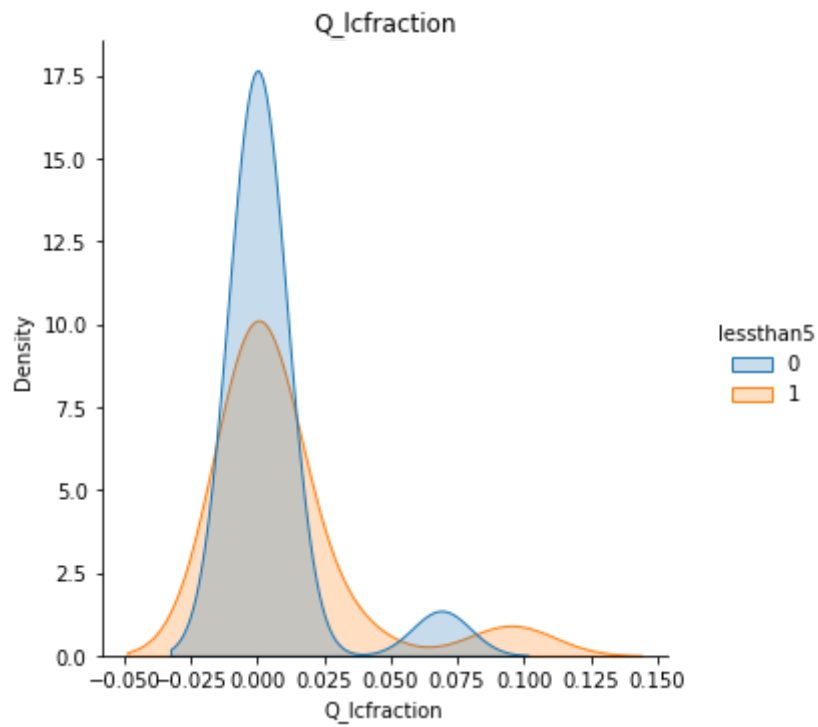


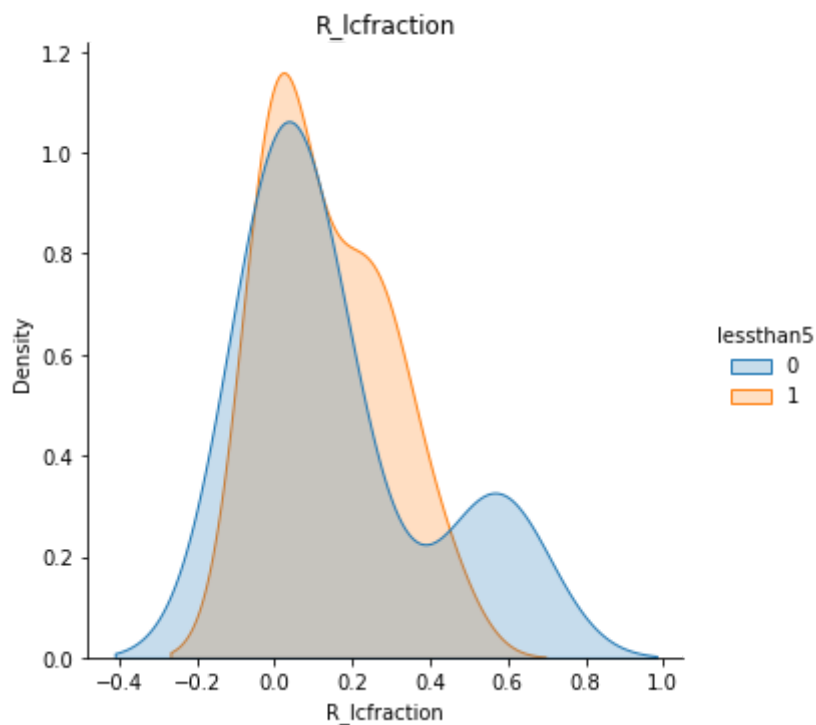
```
/Users/in-divye.singh/anaconda3/envs/life-science/lib/python3.6/site-packages/seaborn/distributions.py:305: UserWarning: Dataset has 0 variance; skipping density estimate.  
warnings.warn(msg, UserWarning)
```



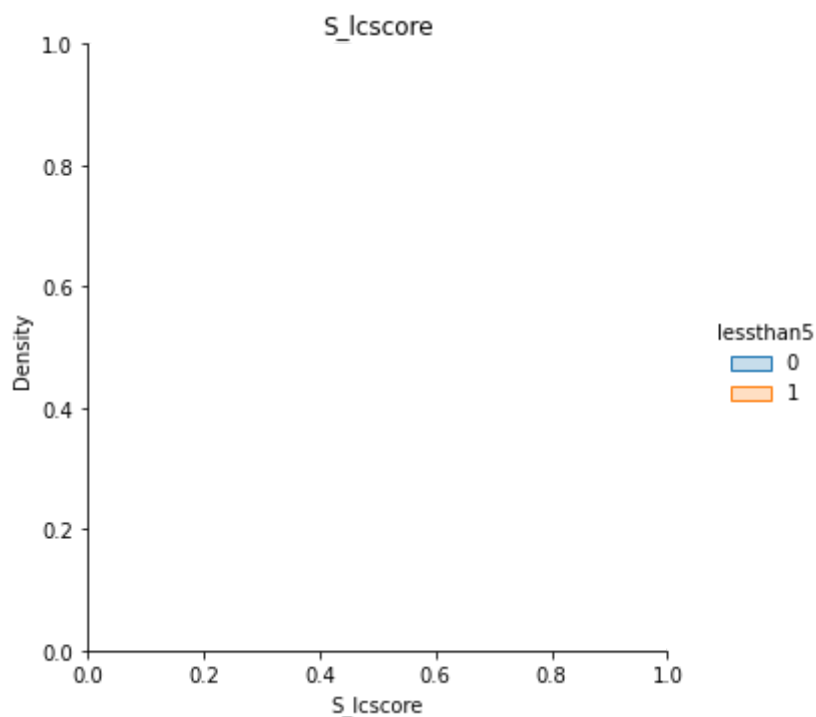








```
/Users/in-divye.singh/anaconda3/envs/life-science/lib/python3.6/site-packages/seaborn/distributions.py:305: UserWarning: Dataset has 0 variance; skipping density estimate.  
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```
/Users/in-divye.singh/anaconda3/envs/life-science/lib/python3.6/site-packages/seaborn/distributions.py:305: UserWarning: Dataset has 0 variance; skipping density estimate.  
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