INTRODUCTION

- This document provides a summary of the housing survey collected by the ACRL and the Housing Office on February 2018
- This document is a python jupyther notebook which includes the code used to generate the data analyses, as well as the associated results
- See the comments in the code for details on the figure labels and codes
- Unfortunately, due to privacy reasons, the data cannot be shared.

In [2]:
```python
# take out warnings about changes in future python versions
import warnings
warnings.filterwarnings('ignore')

import numpy as np
import pandas as pd

import matplotlib as mpl
import matplotlib.pyplot as plt
%matplotlib inline

import seaborn as sns
sns.set(style="whitegrid", color_codes=True)
```

In [3]:
```python
df = pd.read_excel('data_ANONYMOUS_survey_2018.xls')
```

In [4]:
```python
#recode some variables
df[df=="Strongly NOT interested"] = 1
df[df=="Moderately NOT interested"] = 2
df[df=="Not sure"] = 3
df[df=="Moderately interested"] = 4
df[df=="Strongly interested"] = 5

df[df=="Freshman"]  = 1
df[df=="Sophomore"] = 2
df[df=="Junior"]    = 3
df[df=="Senior"]    = 4
df[df=="Super Senior"] = 4

df[df=="Private non-Caltech housing"] = "off-private"
df[df=="Off-campus Caltech housing"] = "off-cit"
```
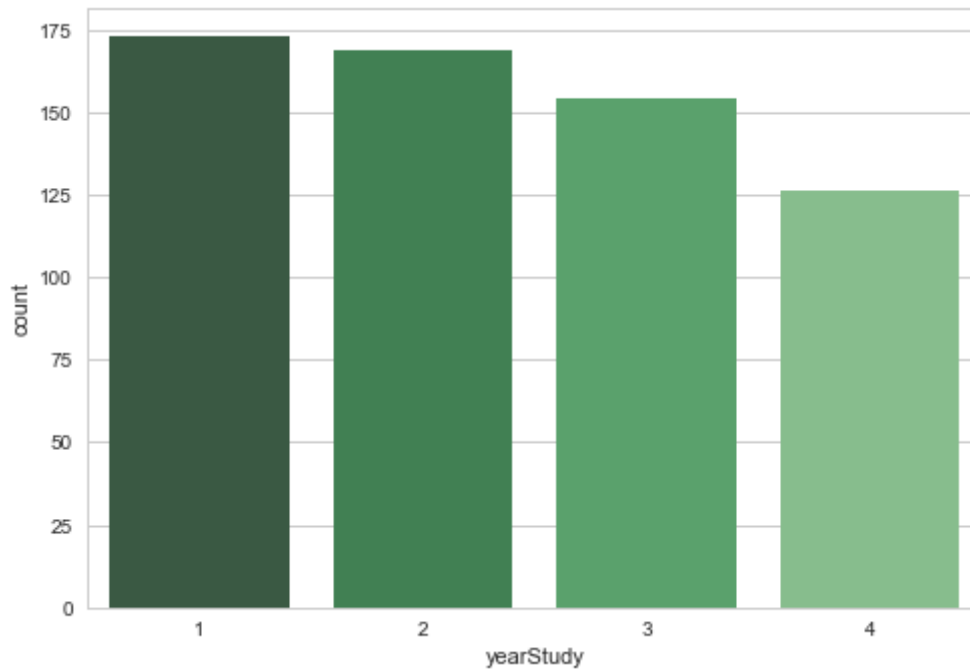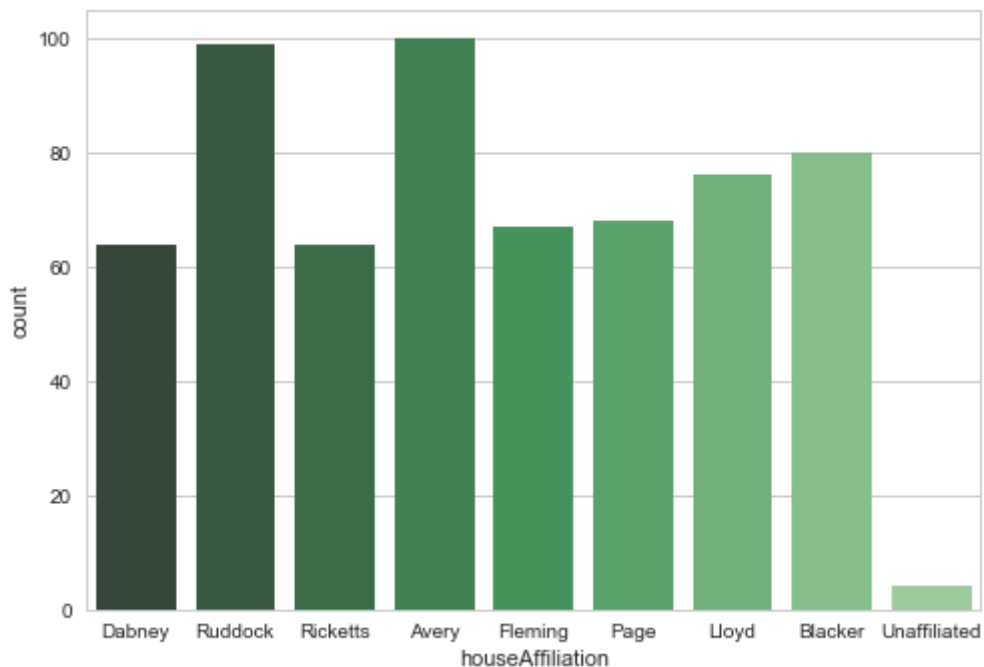
Basic response statistics

In [6]:
```
# responses by current year of study
#
# NOTE:
# >> freshman are encoded as 1
# >> super-seniors and seniors encoded as 4
#
sns.countplot(x="yearStudy", data=df, palette="Greens_d")
```

Out[6]: <matplotlib.axes._subplots.AxesSubplot at 0x1101ff9b0>
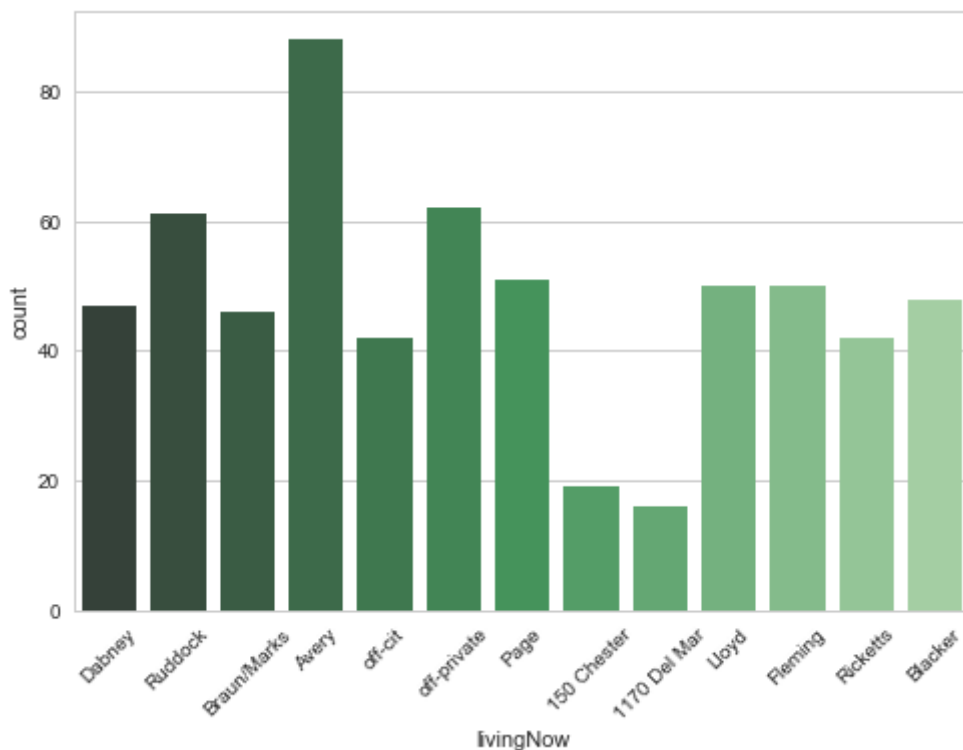
```
In [5]:   # responses by house affiliation
          df.groupby('houseAffiliation').houseAffiliation.count()
          sns.countplot(x="houseAffiliation", data=df, palette="Greens_d")
```

Out[5]: <matplotlib.axes._subplots.AxesSubplot at 0x10dd53f60>


```
In [7]:   # responses by living now
          sns.countplot(x="livingNow", data=df, palette="Greens_d")
          plt.xticks(rotation = 45)
```

Out[7]: (array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]),
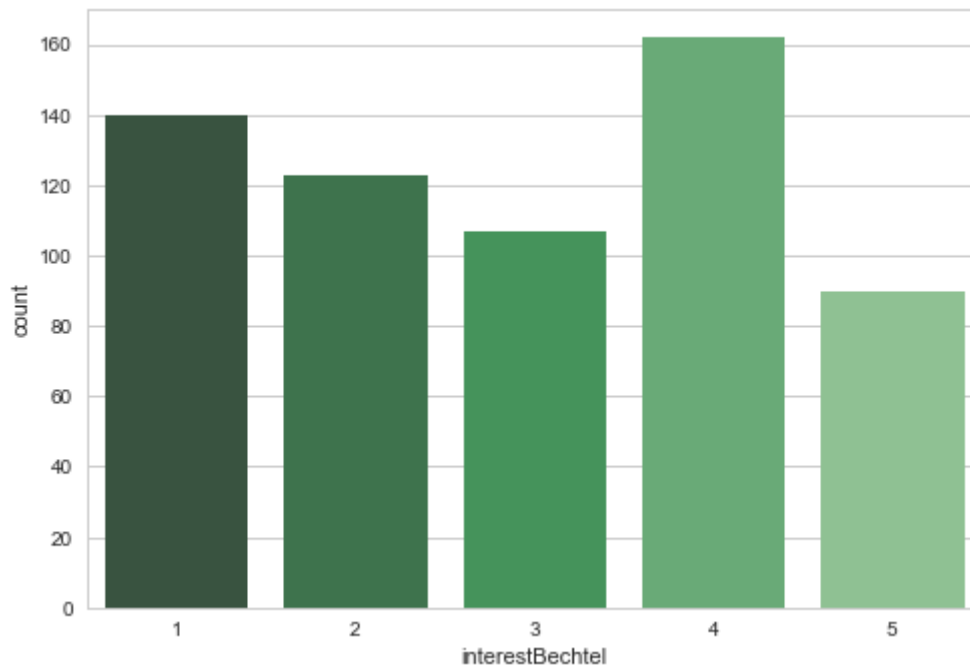   <a list of 13 Text xticklabel objects>)

Interest in Bechtel

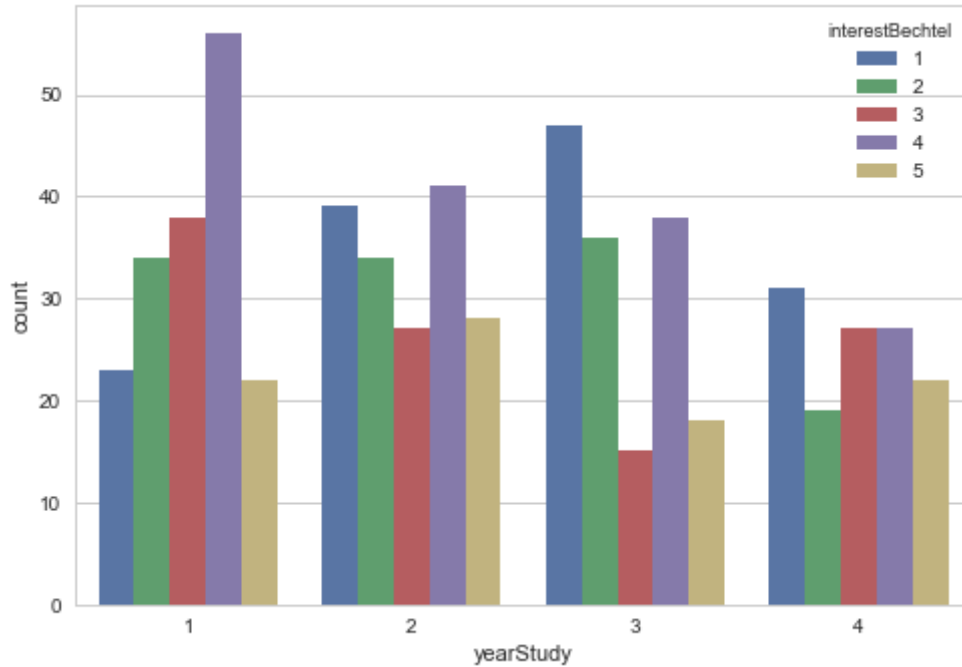- In the plots below, the interest scale goes from 1=strongly-NOT-interested to 5=strongly-interested

```
In [9]:  # overall interest
         sns.countplot(x="interestBechtel", data=df, palette="Greens_d")
```

```
Out[9]:  <matplotlib.axes._subplots.AxesSubplot at 0x1105b7710>
```
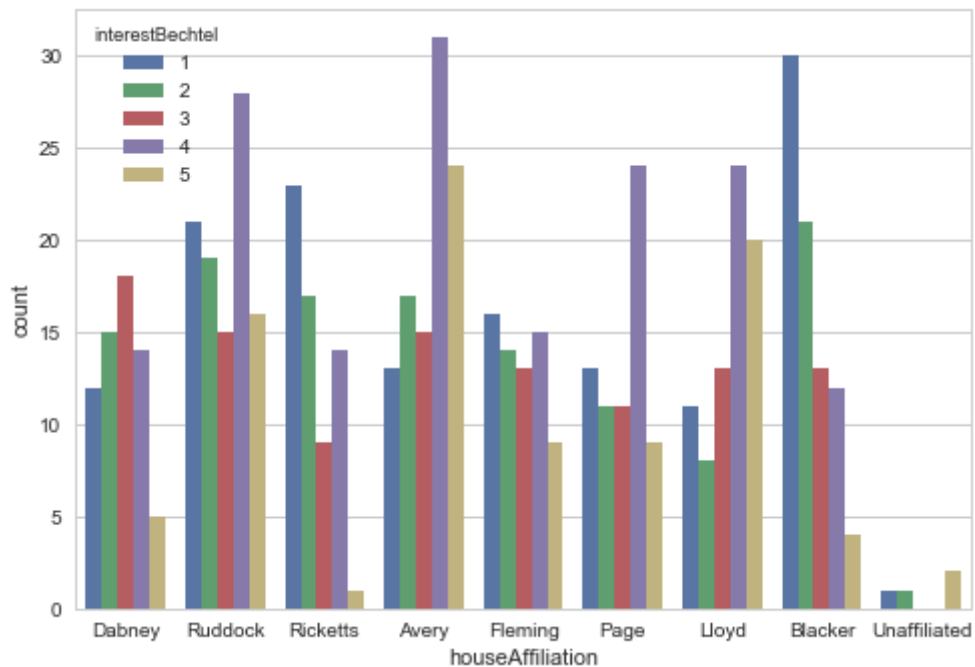
In [10]:   *# interest by year of study*
```
sns.countplot(x='yearStudy', hue="interestBechtel", data = df)
```

Out[10]:   `<matplotlib.axes._subplots.AxesSubplot at 0x1105f2550>`

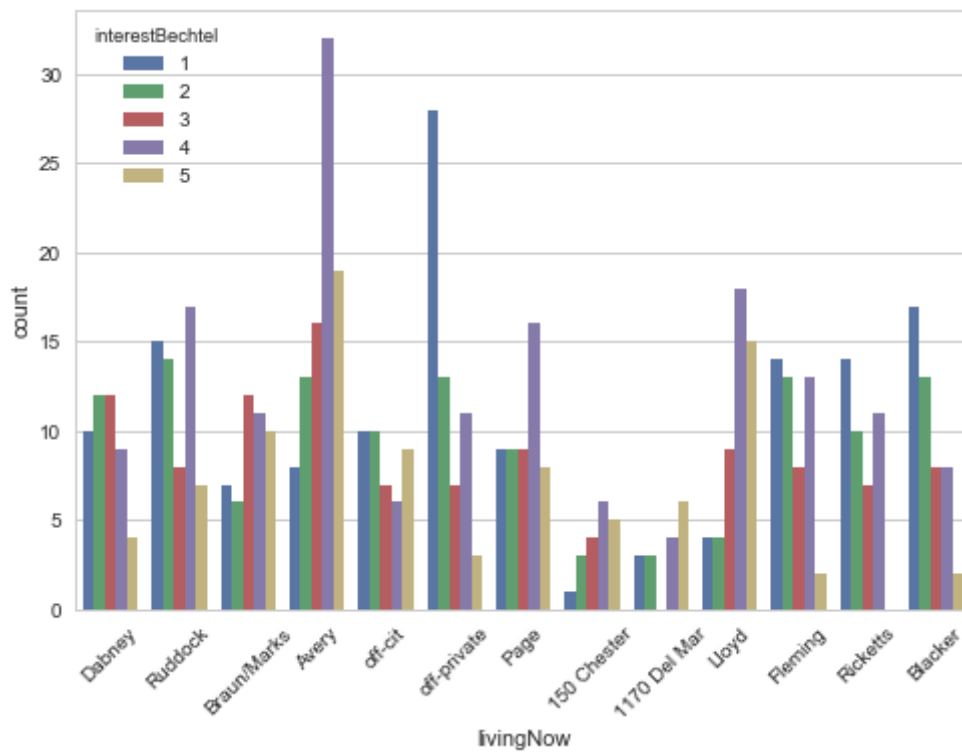
In [11]:   *# interest by house affilination of study*
```
sns.countplot(x='houseAffiliation', hue="interestBechtel", data = df)
```

Out[11]:   `<matplotlib.axes._subplots.AxesSubplot at 0x11083cfd0>`

```
In [12]:  # interest by current living location
          sns.countplot(x='livingNow', hue="interestBechtel", data = df)
          plt.xticks(rotation = 45)
```
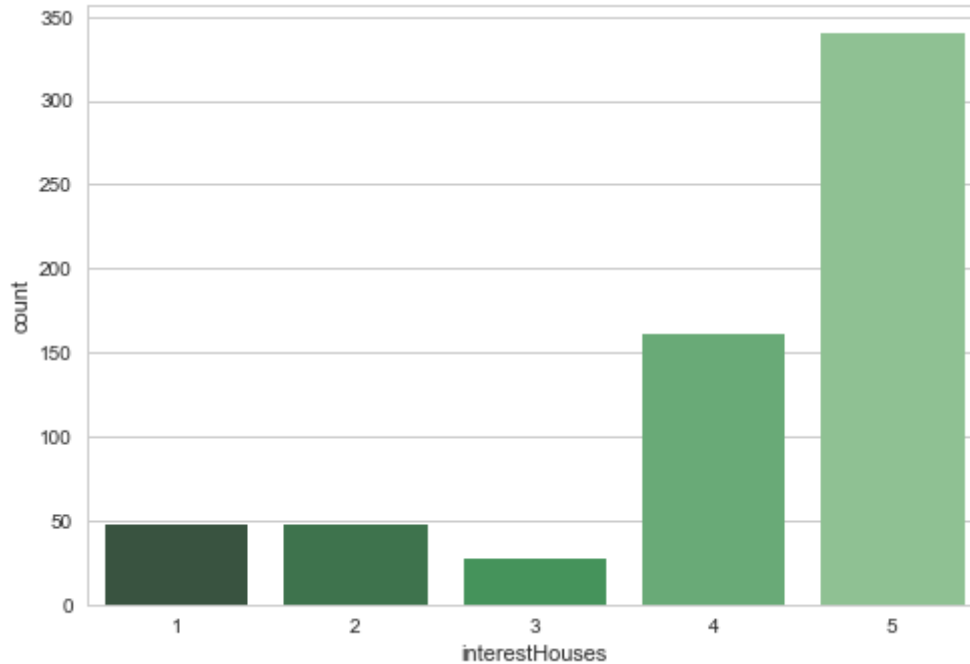
Out[12]: (array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]),
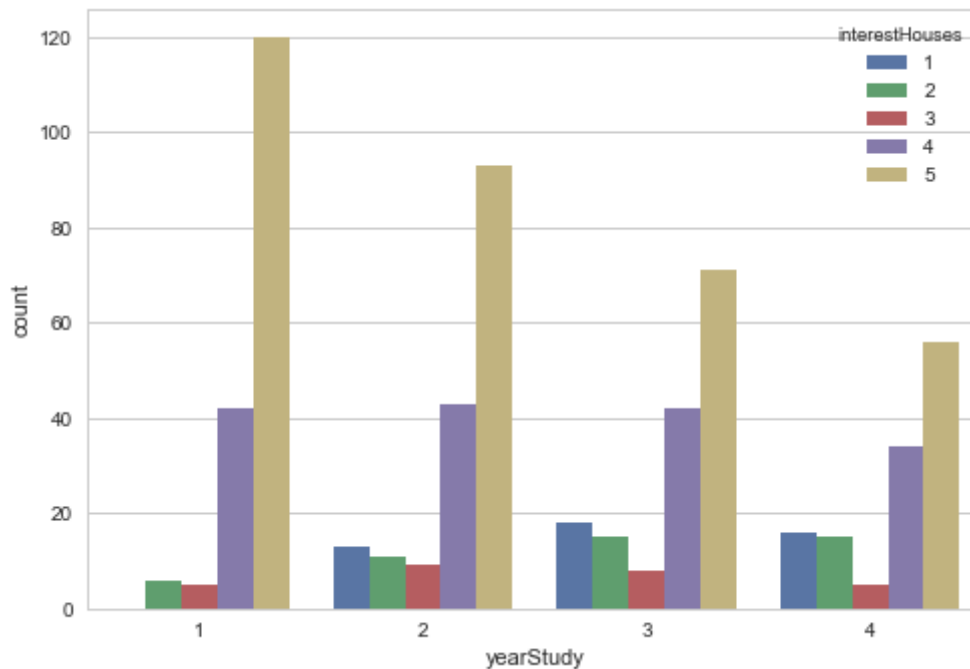   <a list of 13 Text xticklabel objects>)

Interest in Houses

In [13]:
```
# overall interest
sns.countplot(x="interestHouses", data=df, palette="Greens_d")
```

Out[13]: <matplotlib.axes._subplots.AxesSubplot at 0x110d7ccf8>
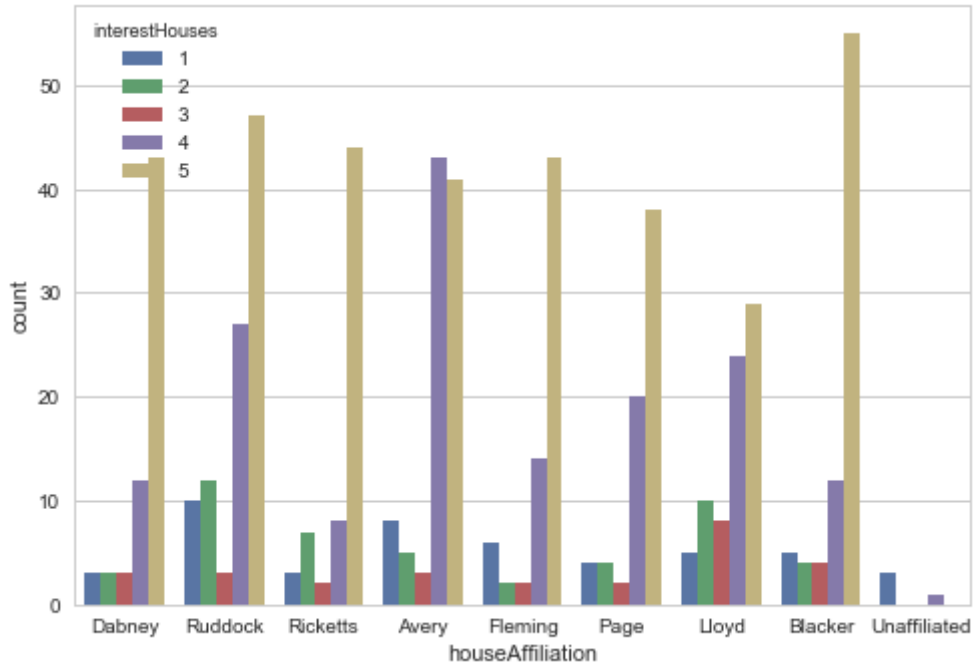

In [14]:
```
# interest by year of study
sns.countplot(x='yearStudy', hue="interestHouses", data = df)
```

Out[14]: <matplotlib.axes._subplots.AxesSubplot at 0x110e7ca90>
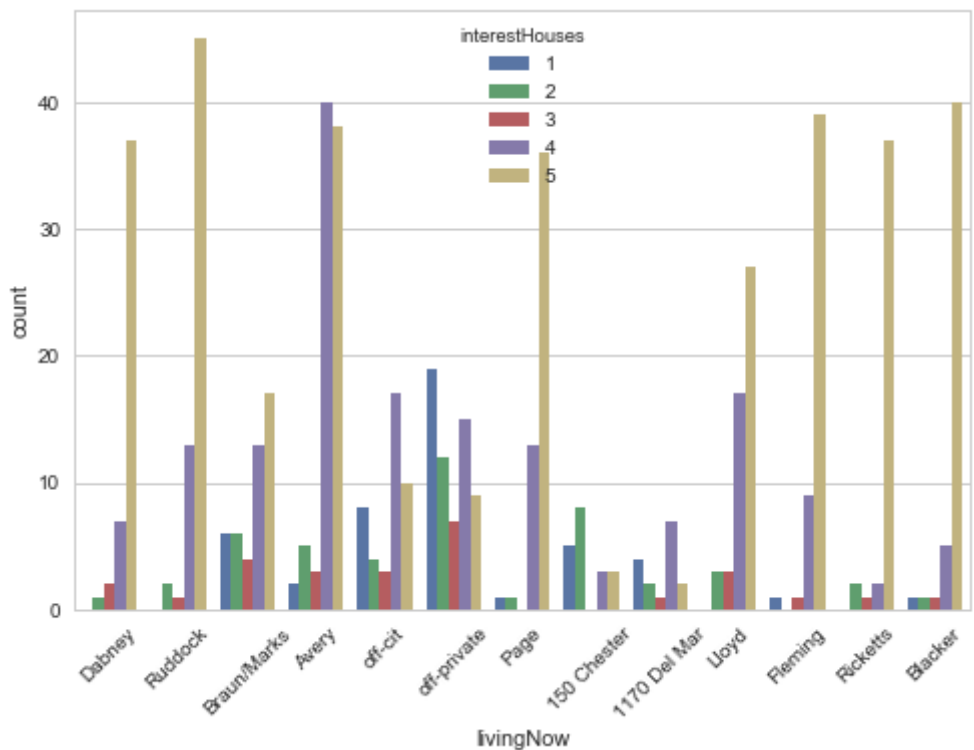
```
In [15]:  # interest by house affilination of study
          sns.countplot(x='houseAffiliation', hue="interestHouses", data = df)
```

Out[15]: <matplotlib.axes._subplots.AxesSubplot at 0x111109c18>


```
In [16]:  # interest by current living location
          sns.countplot(x='livingNow', hue="interestHouses", data = df)
          plt.xticks(rotation = 45)
```

Out[16]: (array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]),
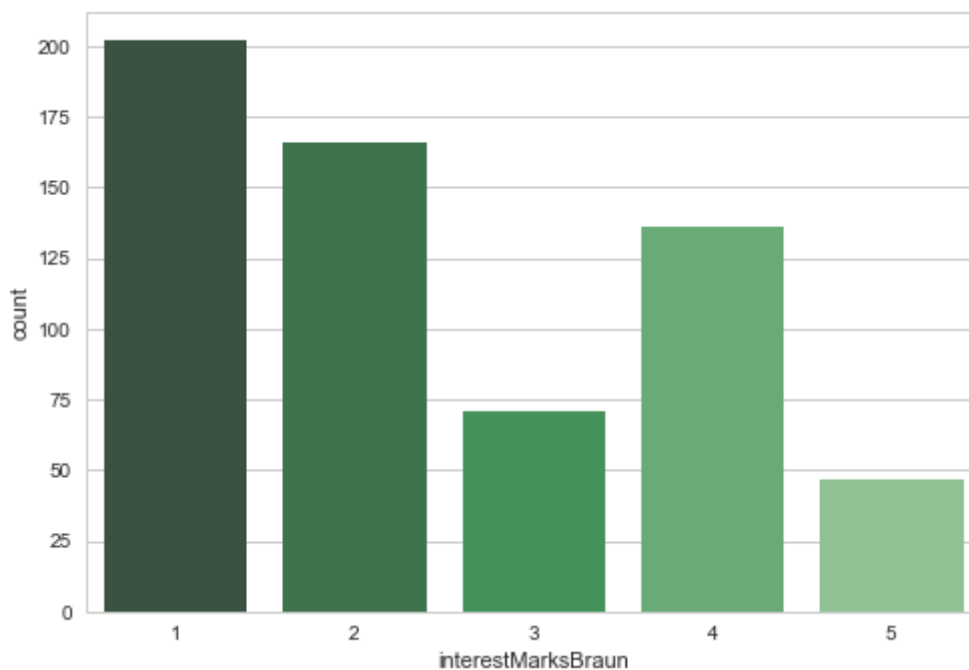   <a list of 13 Text xticklabel objects>)

Interest in Marks/Braun

```
In [17]:   # overall interest
           sns.countplot(x="interestMarksBraun", data=df, palette="Greens_d")
```
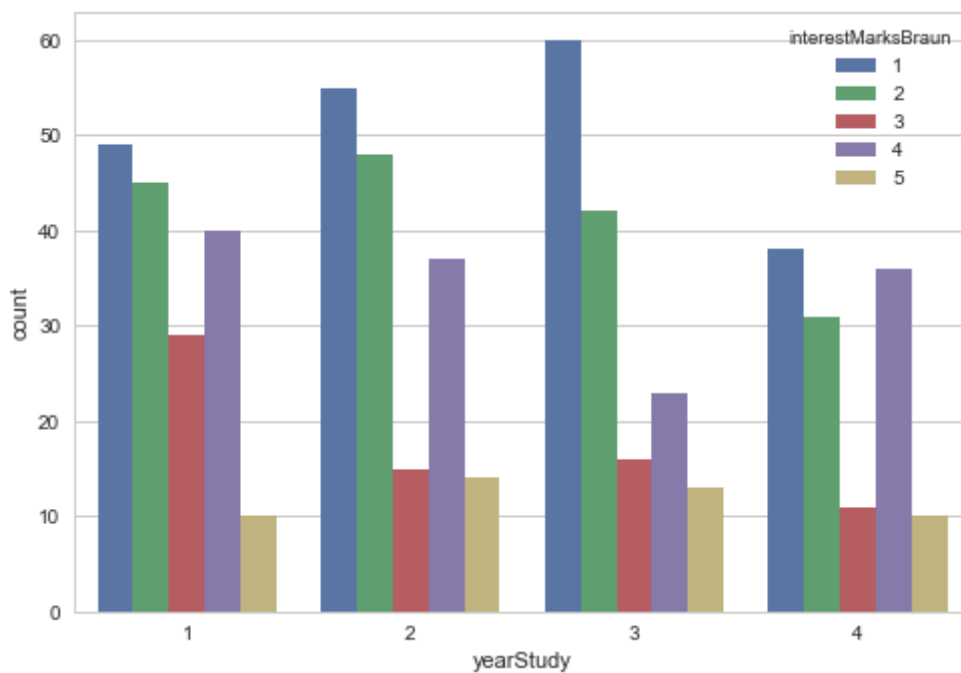
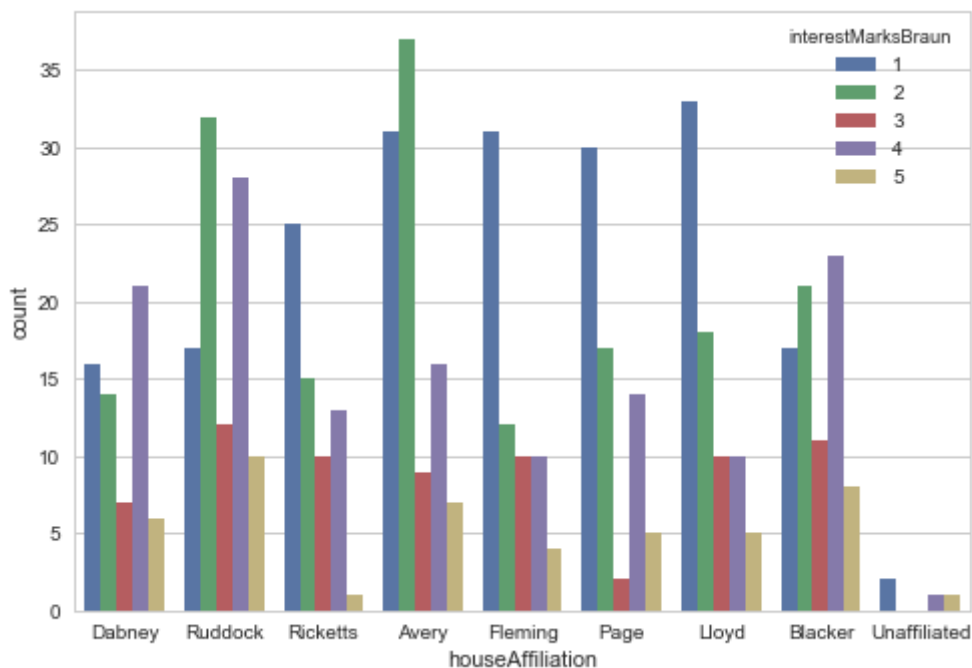Out[17]:   `<matplotlib.axes._subplots.AxesSubplot at 0x1114e3b70>`


```
In [18]:   # interest by year of study
           sns.countplot(x='yearStudy', hue="interestMarksBraun", data = df)
```

Out[18]:   `<matplotlib.axes._subplots.AxesSubplot at 0x1115bfef0>`
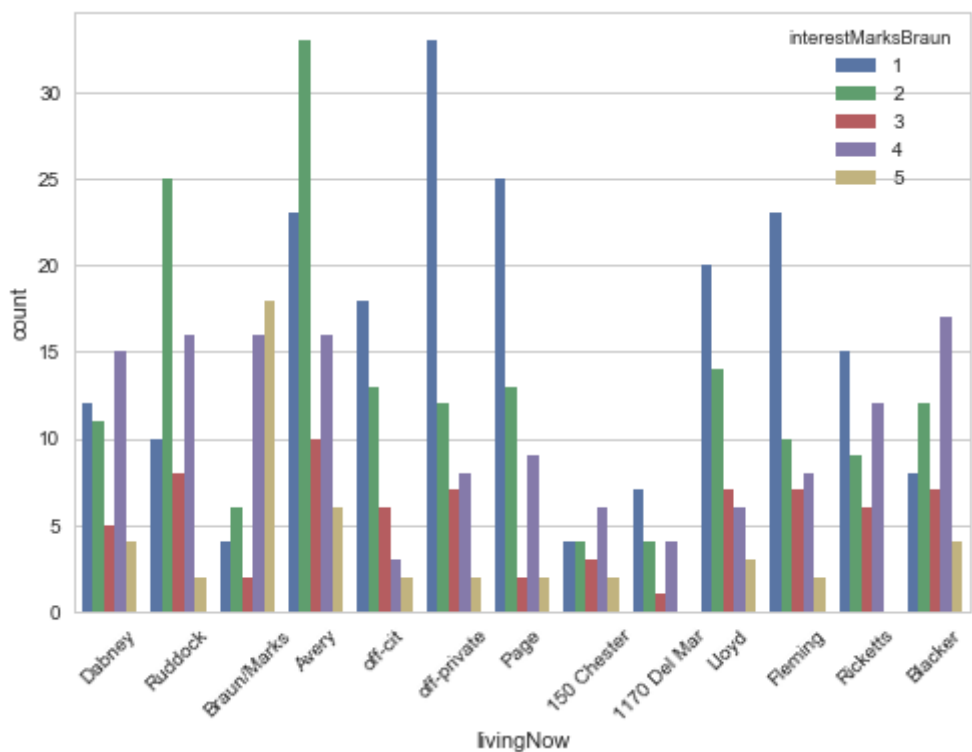
```
In [19]:  # interest by house affilination of study
          sns.countplot(x='houseAffiliation', hue="interestMarksBraun", data = df)
```

Out[19]: `<matplotlib.axes._subplots.AxesSubplot at 0x111727198>`


```
In [20]:  # interest by current living location
          sns.countplot(x='livingNow', hue="interestMarksBraun", data = df)
          plt.xticks(rotation = 45)
```
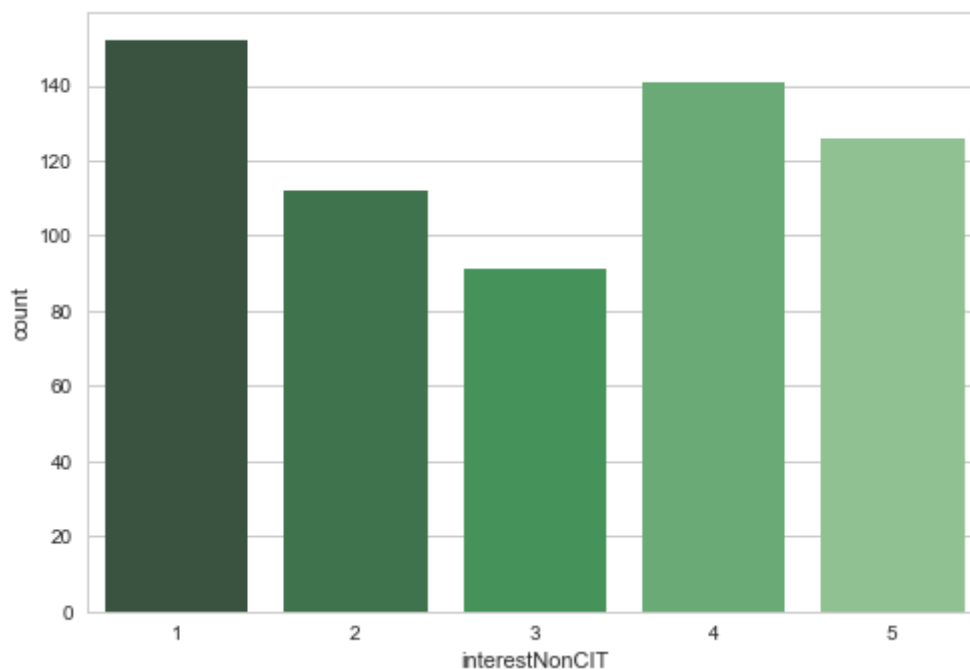
Out[20]: (array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]),
          `<a list of 13 Text xticklabel objects>`)

Interest non-CIT Housing

```
In [21]:  # overall interest
          sns.countplot(x="interestNonCIT", data=df, palette="Greens_d")
```
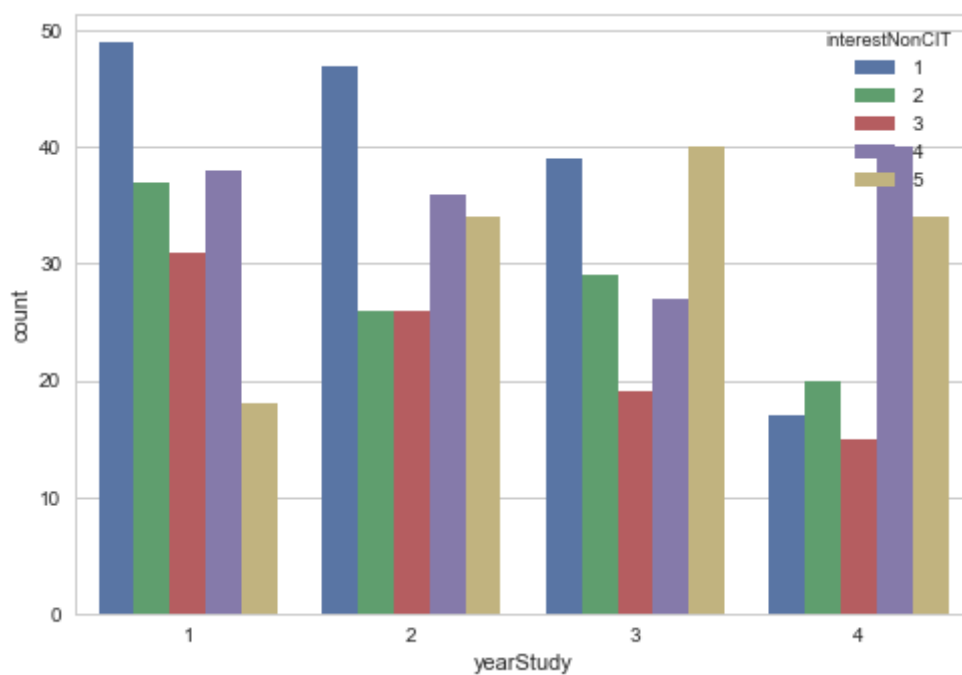
Out[21]: <matplotlib.axes._subplots.AxesSubplot at 0x111d83a90>
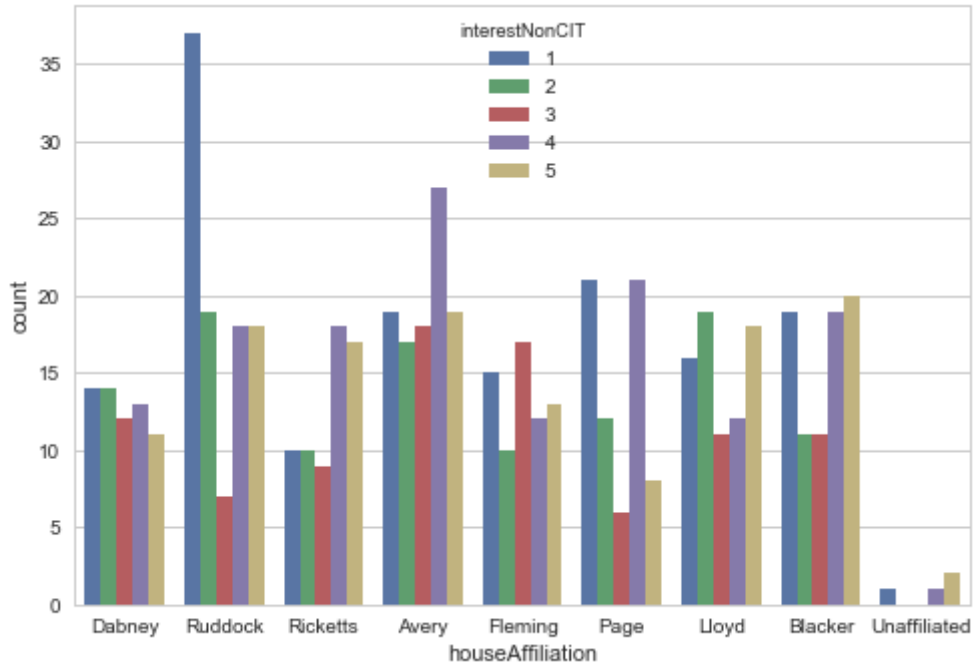


```
In [22]:  # interest by year of study
          sns.countplot(x='yearStudy', hue="interestNonCIT", data = df)
```
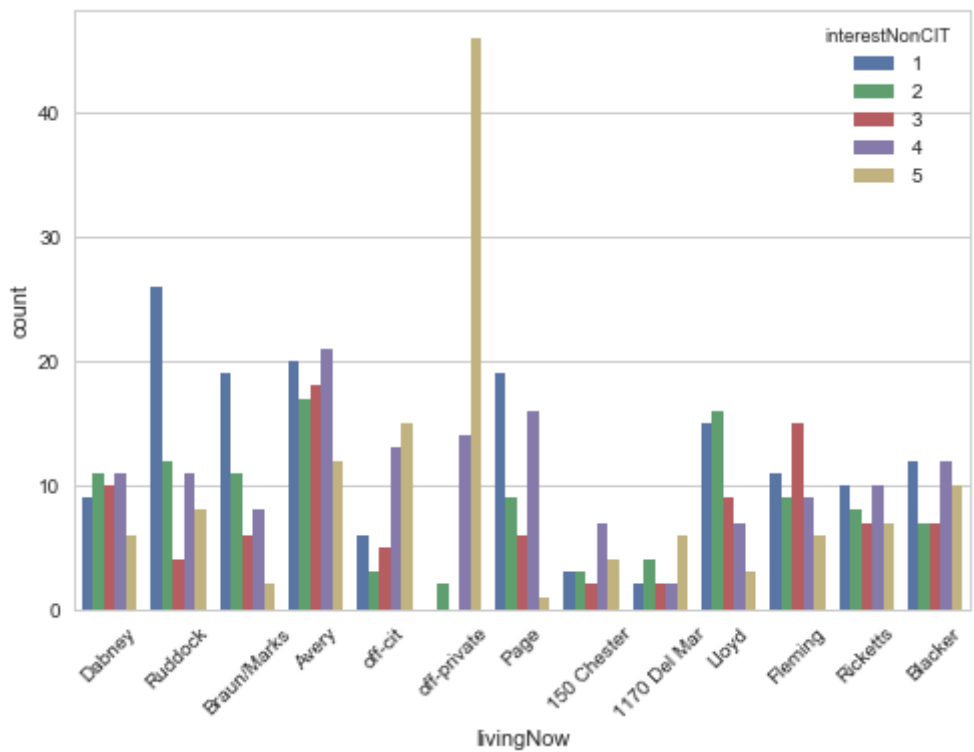
Out[22]: <matplotlib.axes._subplots.AxesSubplot at 0x111dc85c0>

```
In [23]:  # interest by house affilination of study
          sns.countplot(x='houseAffiliation', hue="interestNonCIT", data = df)
```

Out[23]: <matplotlib.axes._subplots.AxesSubplot at 0x111f085c0>


```
In [24]:  # interest by current living location
          sns.countplot(x='livingNow', hue="interestNonCIT", data = df)
          plt.xticks(rotation = 45)
```
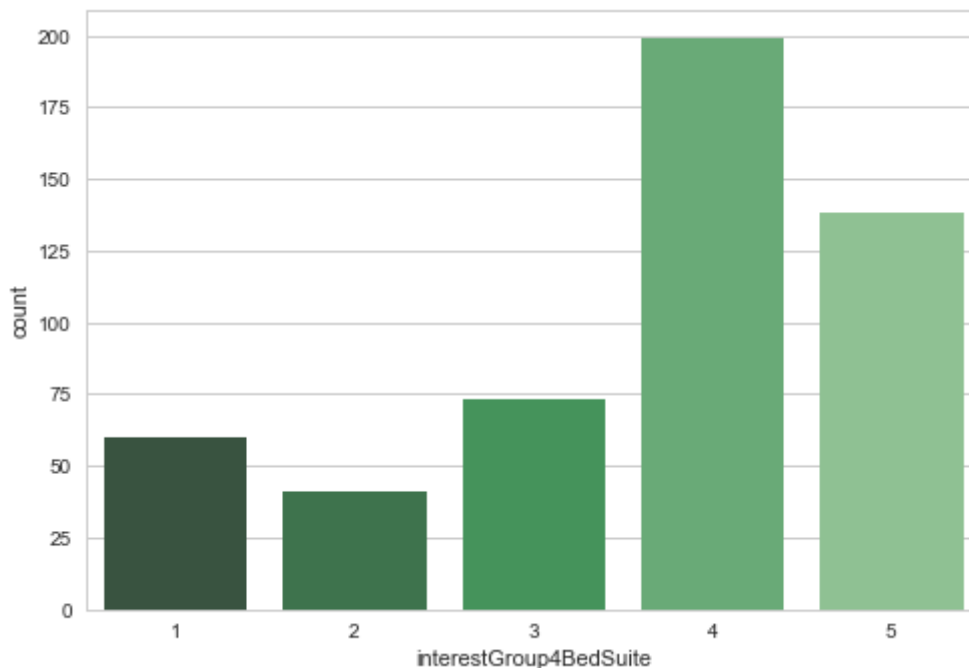
Out[24]: (array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]),
          <a list of 13 Text xticklabel objects>)

Interest in different Bechtel room types

```
In [45]:   # Group application to a 4 bed suite
           sns.countplot(x="interestGroup4BedSuite", data=df, palette="Greens_d",
                         order=[1,2,3,4,5])
```

Out[45]: <matplotlib.axes._subplots.AxesSubplot at 0x113a7e6d8>
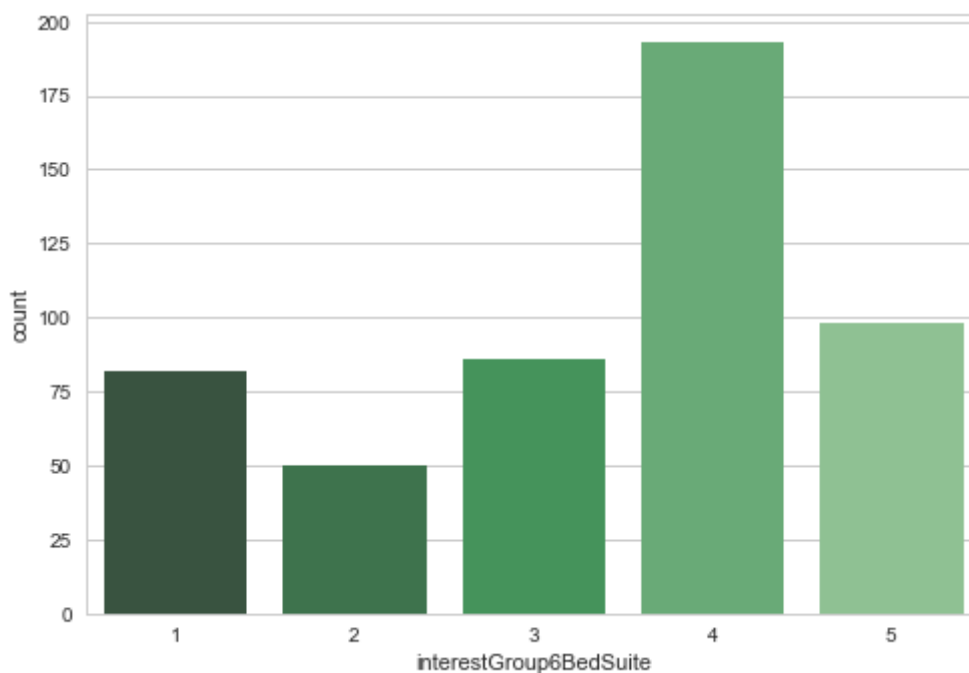


```
In [47]:   # Group application to a 6 bed suite
           sns.countplot(x="interestGroup6BedSuite", data=df,
                         palette="Greens_d",order=[1,2,3,4,5])
```

Out[47]: <matplotlib.axes._subplots.AxesSubplot at 0x113c66128>
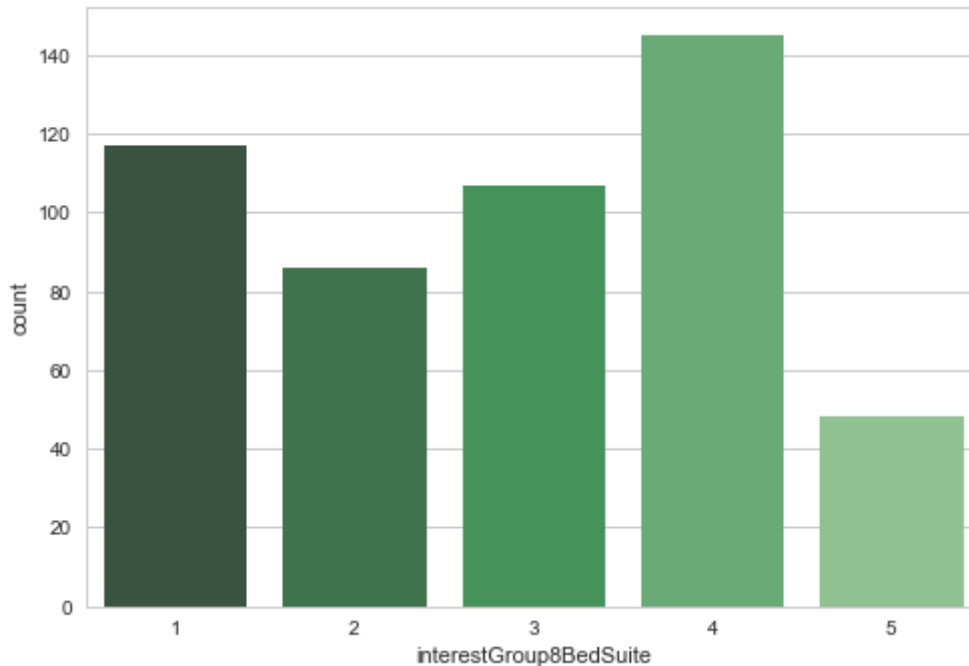
```
In [48]: # Group application to a 8 bed suite
         sns.countplot(x="interestGroup8BedSuite", data=df,
                      palette="Greens_d",order=[1,2,3,4,5])
```

Out[48]: <matplotlib.axes._subplots.AxesSubplot at 0x113ef8550>
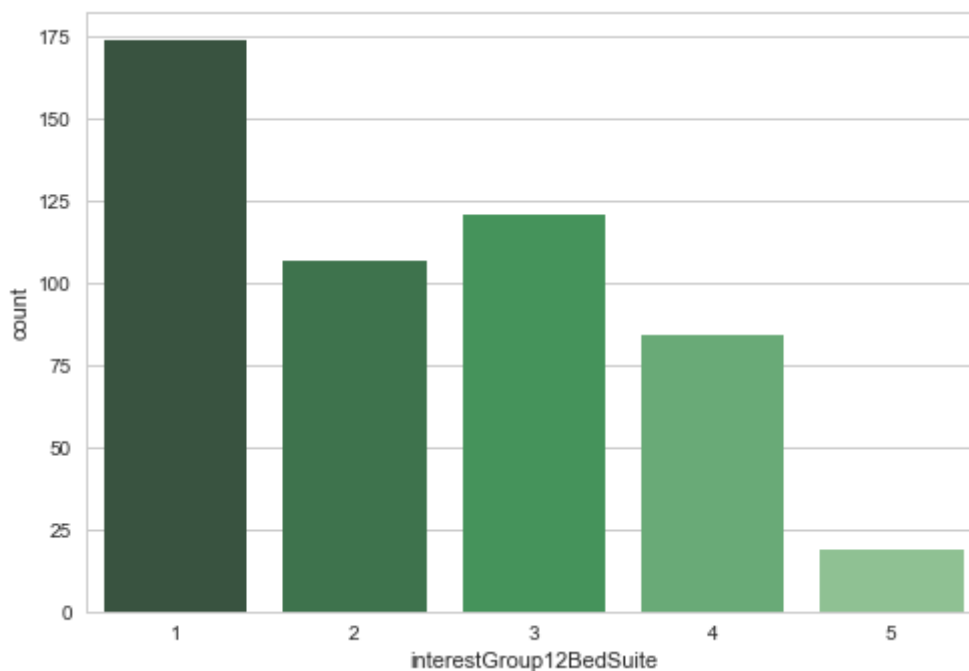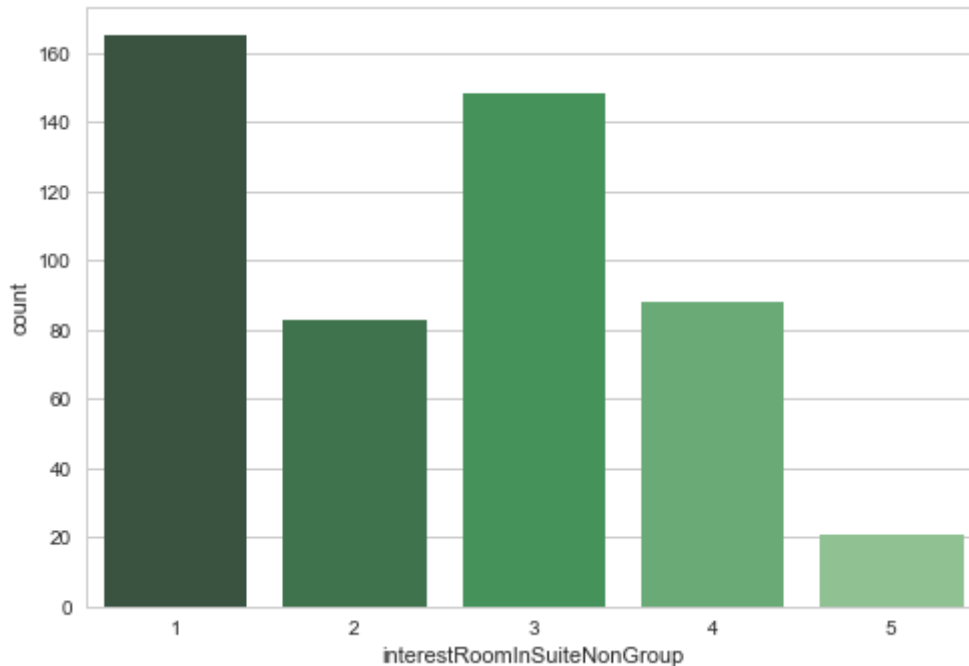


```
In [49]: # Group application to a 12 bed suite
         sns.countplot(x="interestGroup12BedSuite", data=df,
                      palette="Greens_d",order=[1,2,3,4,5])
```

Out[49]: <matplotlib.axes._subplots.AxesSubplot at 0x113cf4080>
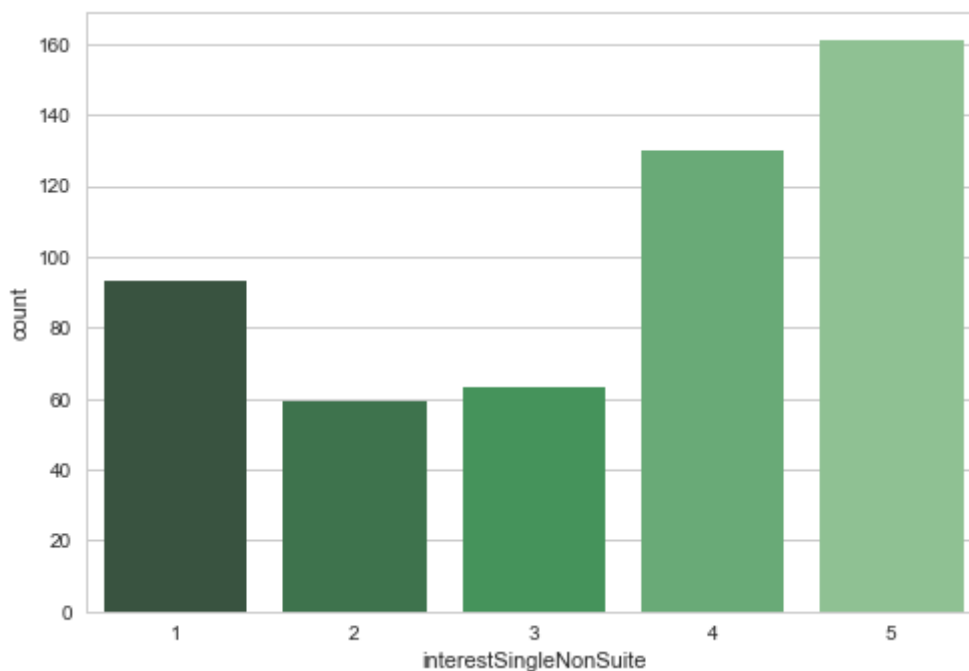
```
In [50]:  # Room in a Suite (but not applying as part of the group)
          sns.countplot(x="interestRoomInSuiteNonGroup", data=df,
                        palette="Greens_d",order=[1,2,3,4,5])
```
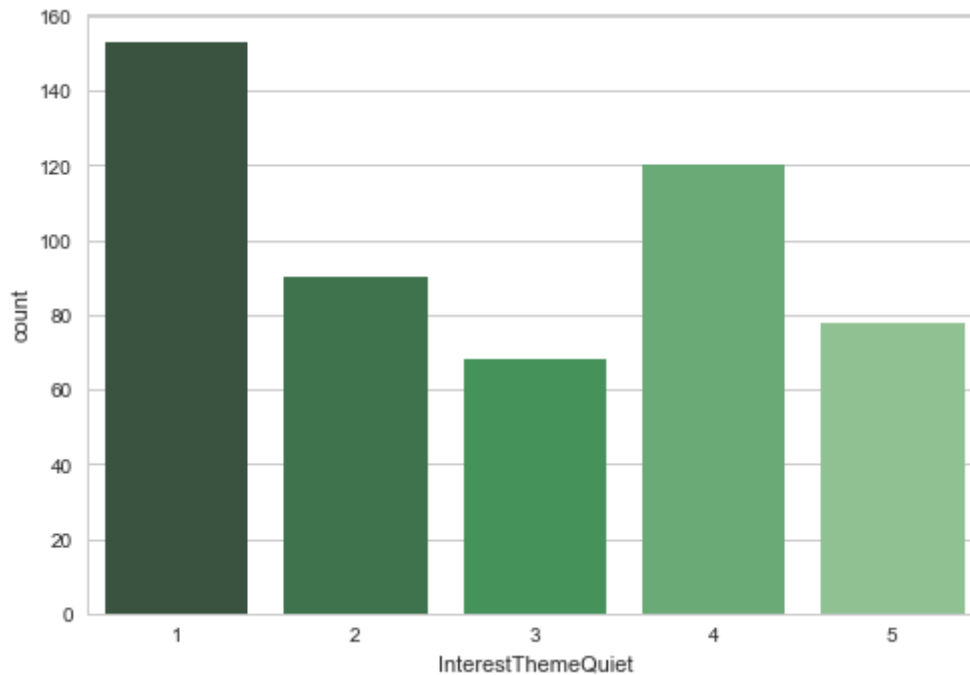
Out[50]: <matplotlib.axes._subplots.AxesSubplot at 0x11417b4e0>


```
In [51]:  # Non-suite single
          sns.countplot(x="interestSingleNonSuite", data=df,
                        palette="Greens_d",order=[1,2,3,4,5])
```
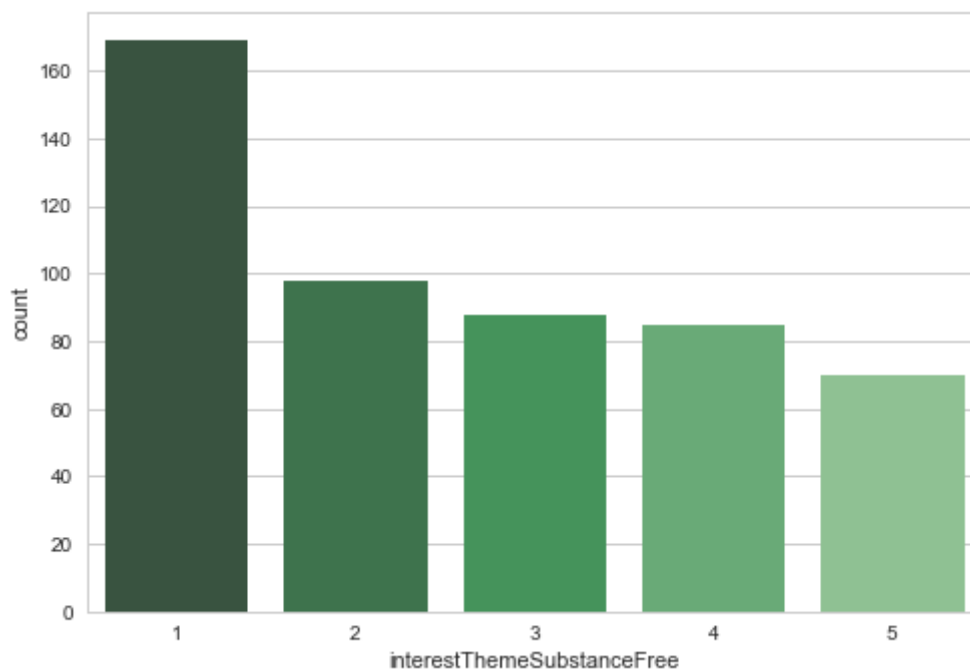
Out[51]: <matplotlib.axes._subplots.AxesSubplot at 0x1141875f8>

In [52]:   ```
            # Interest Theme = quiet
            sns.countplot(x="InterestThemeQuiet", data=df,
                          palette="Greens_d",order=[1,2,3,4,5])
            ```

Out[52]:    `<matplotlib.axes._subplots.AxesSubplot at 0x114216c18>`



In [53]:    ```
            # Interest Theme = Substance Free
            sns.countplot(x="interestThemeSubstanceFree", data=df,
                          palette="Greens_d", order=[1,2,3,4,5])
            ```

Out[53]:   `<matplotlib.axes._subplots.AxesSubplot at 0x1144b0f60>`

```
In [54]: # Interest Theme = Other
         sns.countplot(x="interestThemeOther", data=df, palette="Greens_d", order=[1,
```

Out[54]: <matplotlib.axes._subplots.AxesSubplot at 0x114577c18>