In [52]:
```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import r2_score, accuracy_score
```

In [53]:
```
data = pd.read_csv('files/house_prices.csv')
data.head()
```

Out[53]:

	Transaction	House age	Distance to MRT station	Number of convenience stores	Latitude	Longitude	House unit price
0	2012.917	32.0	84.87882	10	24.98298	121.54024	37.9
1	2012.917	19.5	306.59470	9	24.98034	121.53951	42.2
2	2013.583	13.3	561.98450	5	24.98746	121.54391	47.3
3	2013.500	13.3	561.98450	5	24.98746	121.54391	54.8
4	2012.833	5.0	390.56840	5	24.97937	121.54245	43.1

In [54]:
```
#Create 15 bins of house prices
data['Class'] = pd.cut(data['House unit price'], bins=15)
data['Class id'] = data['Class'].cat.codes
data.head()
```

Out[54]:

	Transaction	House age	Distance to MRT station	Number of convenience stores	Latitude	Longitude	House unit price	Class	Class id
0	2012.917	32.0	84.87882	10	24.98298	121.54024	37.9	(36.907, 44.233]	4
1	2012.917	19.5	306.59470	9	24.98034	121.53951	42.2	(36.907, 44.233]	4
2	2013.583	13.3	561.98450	5	24.98746	121.54391	47.3	(44.233, 51.56]	5
3	2013.500	13.3	561.98450	5	24.98746	121.54391	54.8	(51.56, 58.887]	6
4	2012.833	5.0	390.56840	5	24.97937	121.54245	43.1	(36.907, 44.233]	4

In [55]:
```
#Prepare training and test data
X = data
y = data['Class id']
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=.15, random_state=42)
```

In [56]:
```
#Train a k-Neighbours Classifier
model = KNeighborsClassifier()
model.fit(X_train[['Latitude', 'Longitude']], y_train)
y_pred = model.predict(X_test[['Latitude', 'Longitude']])
accuracy_score(y_test, y_pred)
```

Out[56]:
```
0.42857142857142855
```

In [57]:
```
#Make prediction of categories
df_pred = pd.DataFrame(y_pred, columns=['Pred cat'])
df_pred['Pred'] = df_pred['Pred cat'].apply(lambda x: X_test['Class'].cat.categories[x].mid)
```

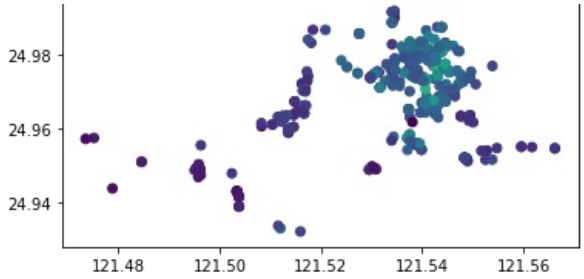
In [58]:
```
r2_score(X_test['House unit price'], df_pred['Pred'])
```

Out[58]:
```
0.6935774017709413
```

In [59]:
```
fig, ax = plt.subplots()

ax.scatter(x=X['Longitude'], y=X['Latitude'], c=data['House unit price'])
```

Out[59]:
```
<matplotlib.collections.PathCollection at 0x7fdc800ee5e0>
```



In [ ]: