In [1]:
```
import pandas as pd
import numpy as np
import datetime as dt
import matplotlib.pyplot as plt
import seaborn as sns
```

In [4]:
```
pd.set_option("display.max_columns",100)
```

In [5]:
```
df=pd.read_csv(r"C:\Users\berid\OneDrive\Desktop\mydata\melb_data.csv")
```

In [92]:
```
df
```

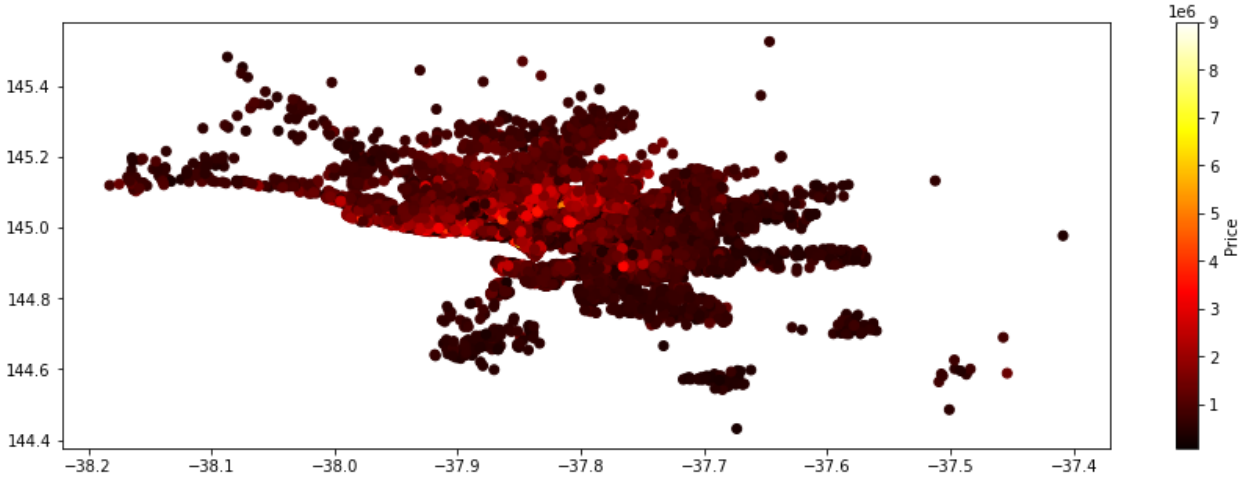
Out[92]:

	Suburb	Address	Rooms	Type	Price	Method	SellerG	Date	Distance	Postcode	Bedroom
0	Abbotsford	85 Turner St	2	h	1480000.0	S	Biggin	2016-03-12	2.5	3067.0	2.
1	Abbotsford	25 Bloomburg St	2	h	1035000.0	S	Biggin	2016-04-02	2.5	3067.0	2.
2	Abbotsford	5 Charles St	3	h	1465000.0	SP	Biggin	2017-04-03	2.5	3067.0	3.
3	Abbotsford	40 Federation La	3	h	850000.0	PI	Biggin	2017-04-03	2.5	3067.0	3.
4	Abbotsford	55a Park St	4	h	1600000.0	VB	Nelson	2016-04-06	2.5	3067.0	3.
...	...	...	...	...	...	...	...	...	...	...	.
13575	Wheelers Hill	12 Strada Cr	4	h	1245000.0	S	Barry	2017-08-26	16.7	3150.0	4.
13576	Williamstown	77 Merrett Dr	3	h	1031000.0	SP	Williams	2017-08-26	6.8	3016.0	3.
13577	Williamstown	83 Power St	3	h	1170000.0	S	Raine	2017-08-26	6.8	3016.0	3.
13578	Williamstown	96 Verdon St	4	h	2500000.0	PI	Sweeney	2017-08-26	6.8	3016.0	4.
13579	Yarraville	6 Agnes St	4	h	1285000.0	SP	Village	2017-08-26	6.3	3013.0	4.

13580 rows × 21 columns

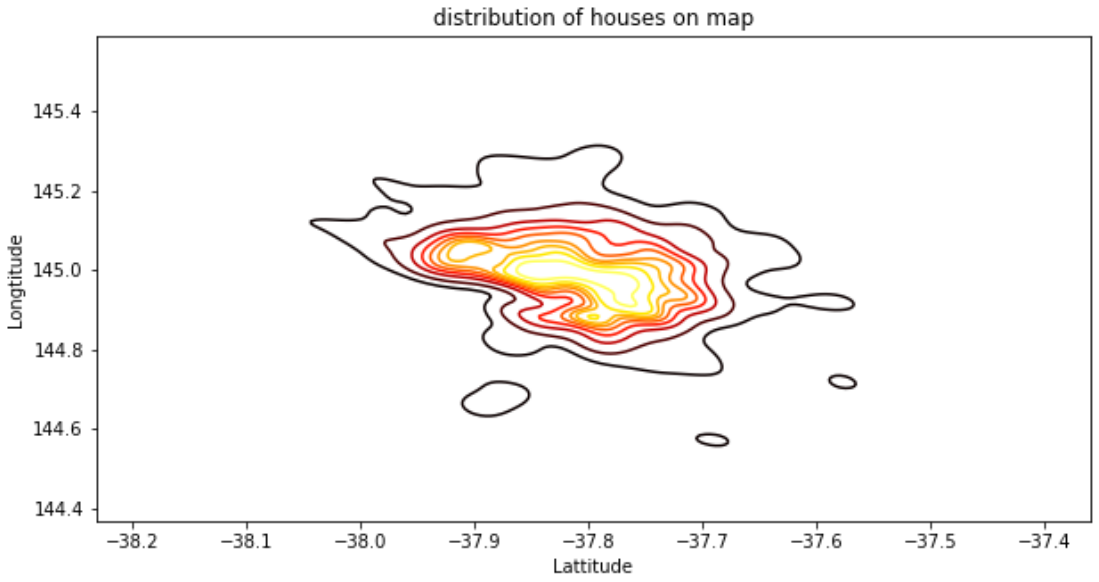
Distribution of houses

In [20]:
```
plt.figure(figsize=(15,5))
plt.scatter(df.Lattitude,df.Longtitude,c=df.Price,cmap="hot")
plt.colorbar().set_label("Price")
plt.show()
```



In [79]:
```
plt.figure(figsize=(10,5))
sns.kdeplot(df.Lattitude,df.Longtitude,c=df.Price,cmap="hot")
plt.title("distribution of houses on map")
plt.show()
```

```
C:\Users\berid\AppData\Local\Programs\Python\Python39\lib\site-packages\seaborn\_decorator
s.py:36: FutureWarning: Pass the following variable as a keyword arg: y. From version 0.12,
the only valid positional argument will be `data`, and passing other arguments without an e
xplicit keyword will result in an error or misinterpretation.
  warnings.warn(
C:\Users\berid\AppData\Local\Programs\Python\Python39\lib\site-packages\seaborn\distributio
ns.py:1210: UserWarning: The following kwargs were not used by contour: 'c'
  cset = contour_func(
```

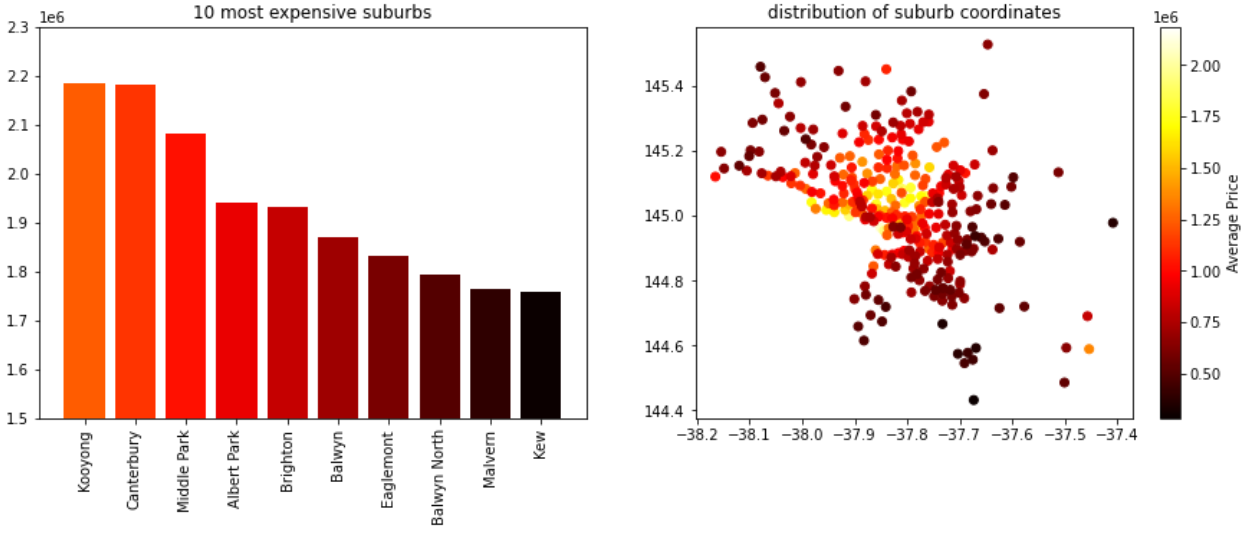


Find most expensive suburbs and their distribution on map

In [94]:
```
grouped=df.groupby("Suburb").agg({"Price":"mean","Lattitude":"mean","Longtitude":"mean"})\
.reset_index().sort_values("Price",ascending=False)
fig,axes=plt.subplots(1,2,figsize=(15,5))
colors=reversed(list(plt.get_cmap("hot")(np.linspace(0,0.5,10))))

plt.subplot(1,2,1)
plt.bar(grouped.Suburb.head(10),grouped.Price.head(10),color=[c for c in colors])
plt.title("10 most expensive suburbs")
plt.xticks(rotation=90)
plt.ylim(1500000,2300000)


plt.subplot(1,2,2)
plt.scatter(grouped.Lattitude,grouped.Longtitude,c=grouped.Price,cmap="hot")
plt.colorbar().set_label("Average Price")
plt.title("distribution of suburb coordinates")
plt.show()
```



Distribution of prices

In [90]:
```
plt.figure(figsize=(15,5))
plt.hist(df.Price,ec="k",bins=30,color="grey")
plt.axvline(df.Price.mean(),label="mean price",color="r")
plt.axvline(df.Price.median(),label="median price",color="g")
plt.xticks()
plt.title("price distribution")
plt.legend()
plt.show()
```