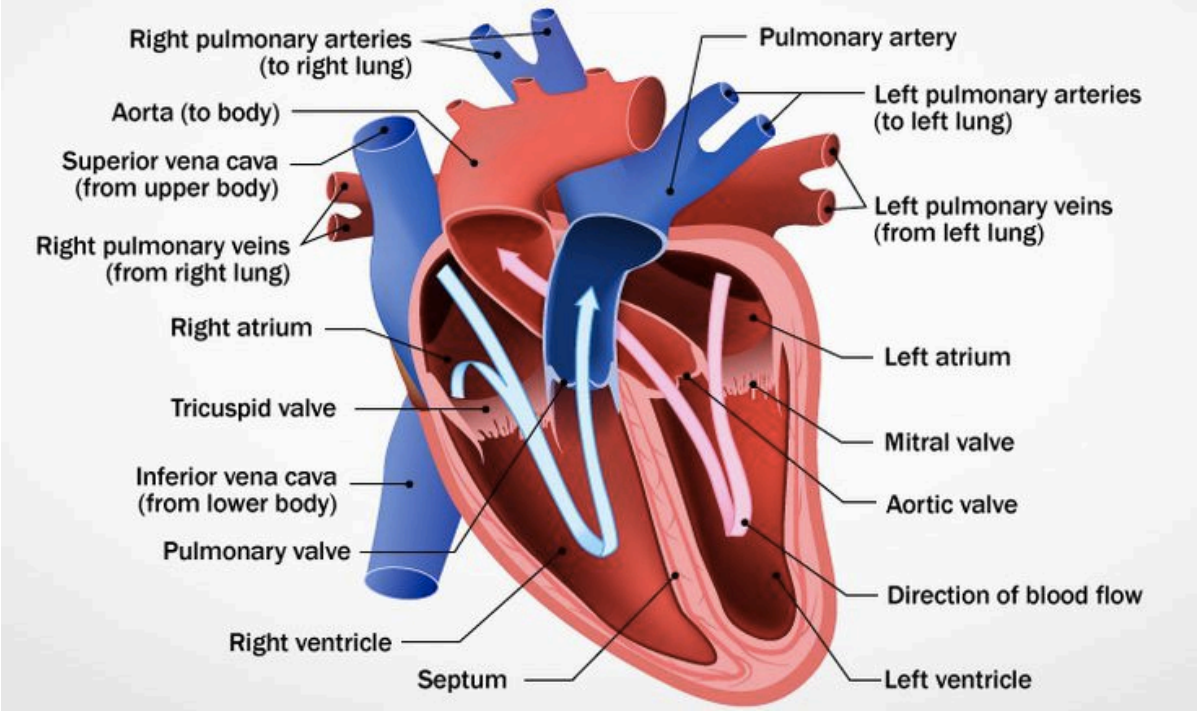
Task 1 - Plot heat map to visualize percentage of blood leaving the heart at each contraction of a smoking and non smoking person

In [43]:
```
#predefine code for image
from IPython.display import Image
Image(filename='heart.png')
#predefine code end
```

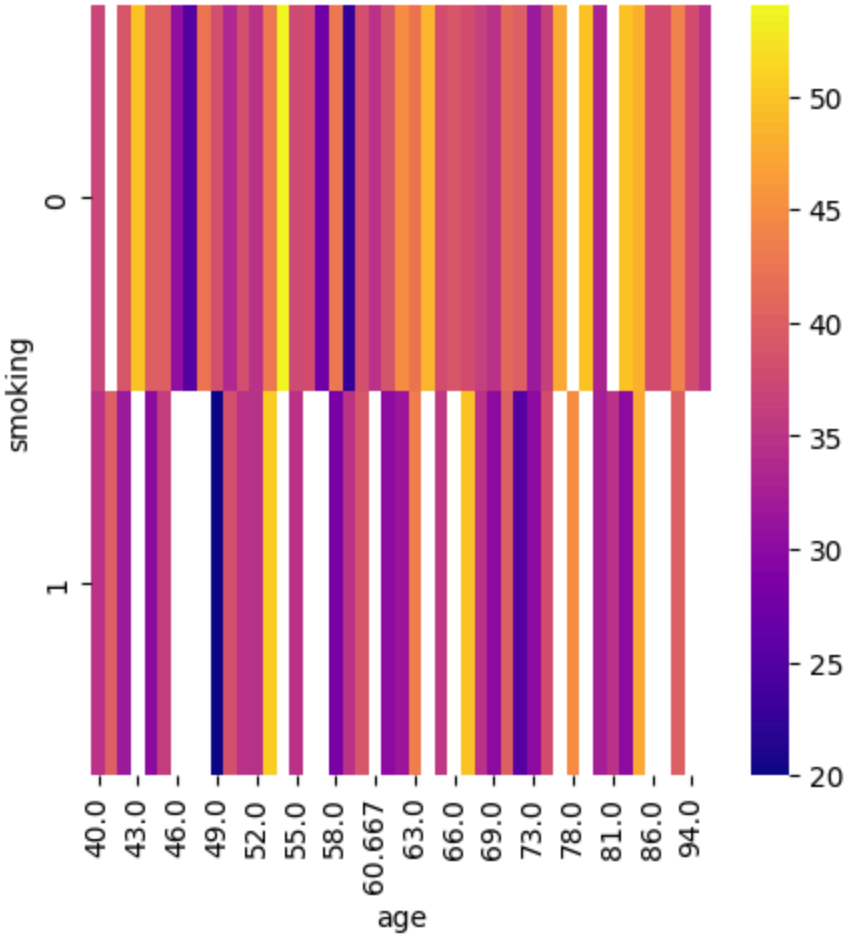
Out[43]:



In [5]:
```
# Import all the libraries and read heart_failure_clinical_records_dataset.csv
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sb

df = pd.read_csv("heart_failure_clinical_records_dataset.csv")
smoking_heart_dataframe = df.groupby(["age","smoking"])["ejection_fraction"].mean()
plt.figure(figsize=(5,5))
sb.heatmap(pd.pivot_table(values="ejection_fraction", index="smoking", columns="age
```

Out[5]:
```
<Axes: xlabel='age', ylabel='smoking'>
```

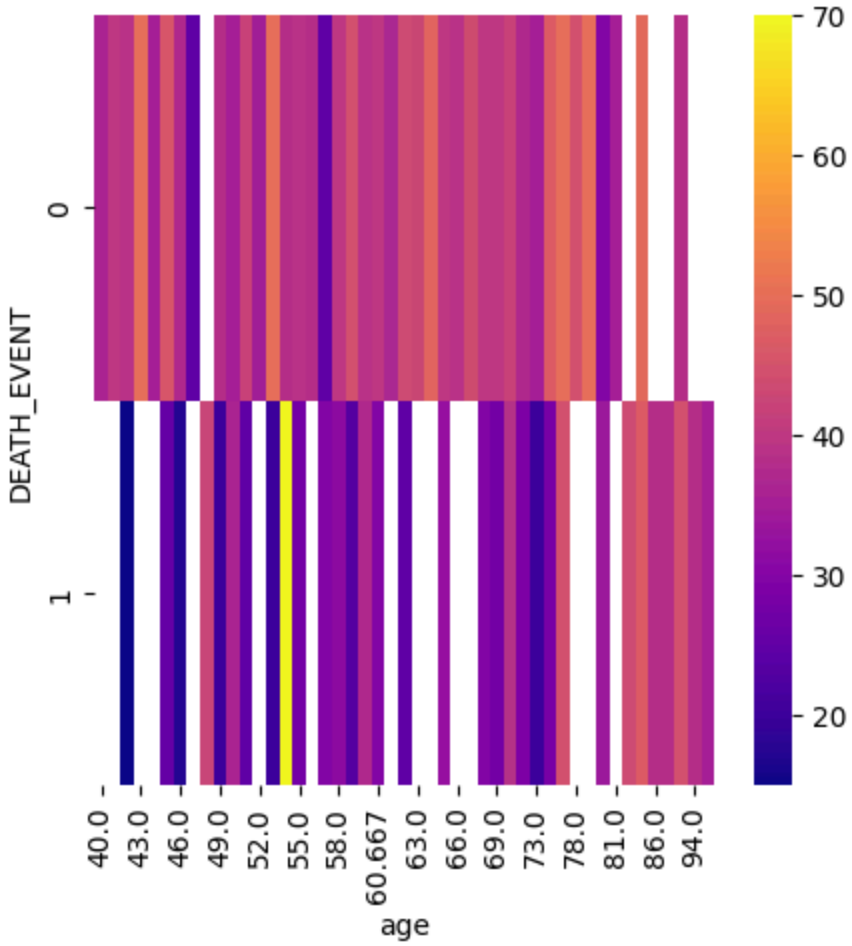


Task 2 Plot a heatmap to visualize percentage of blood leaving the heart at each contraction of people who died due to cardio vascular disease

In [6]:
```
#Group by death events and ejection fraction rate and find the average ejection fra
import numpy as np
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sb

df = pd.read_csv("heart_failure_clinical_records_dataset.csv")
death_dataframe = df.groupby(["age","DEATH_EVENT"])["ejection_fraction"].mean().res
plt.figure(figsize=(5,5))
sb.heatmap(pd.pivot_table(values="ejection_fraction", index="DEATH_EVENT", columns=
```

Out[6]:
```
<Axes: xlabel='age', ylabel='DEATH_EVENT'>
```


DEATH_EVENT
0
1
40.0
43.0
46.0
49.0
52.0
55.0
58.0
60.667
63.0
66.0
69.0
73.0
78.0
81.0
86.0
94.0
age
70
60
50
40
30
20

In [ ]: