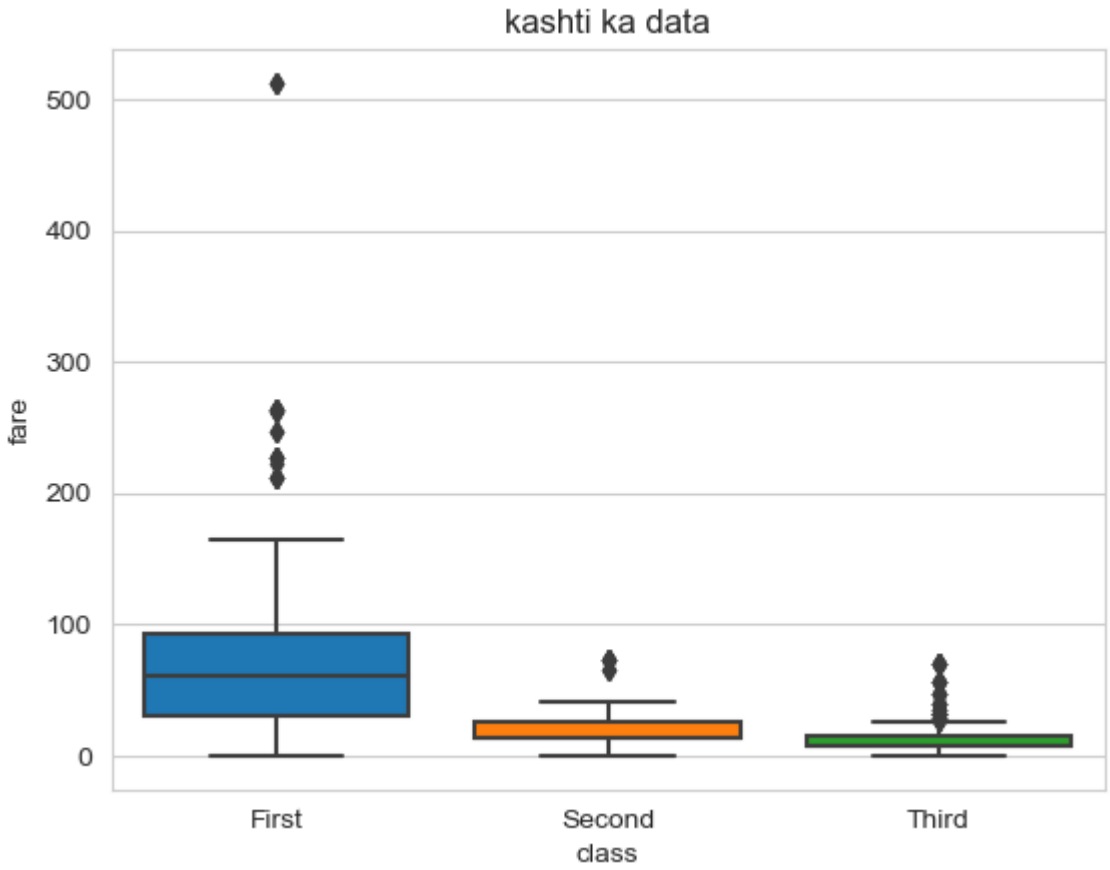
# BOX PLOT

## X & Y variable may contain one numeric and one cetagorical data

In [14]:
```
import seaborn as sns

sns.set_style("whitegrid")

kashti=sns.load_dataset("titanic")

p=sns.boxplot(x="class", y="fare", data=kashti, saturation=1,)
p.set_title("kashti ka data")
```

Out[14]:
```
Text(0.5, 1.0, 'kashti ka data')
```




## how to describe data

In [18]:
```
import seaborn as sns

sns.set_style("whitegrid")

kashti=sns.load_dataset("titanic")
# print(kashti)
```

```
kashti.describe()
```

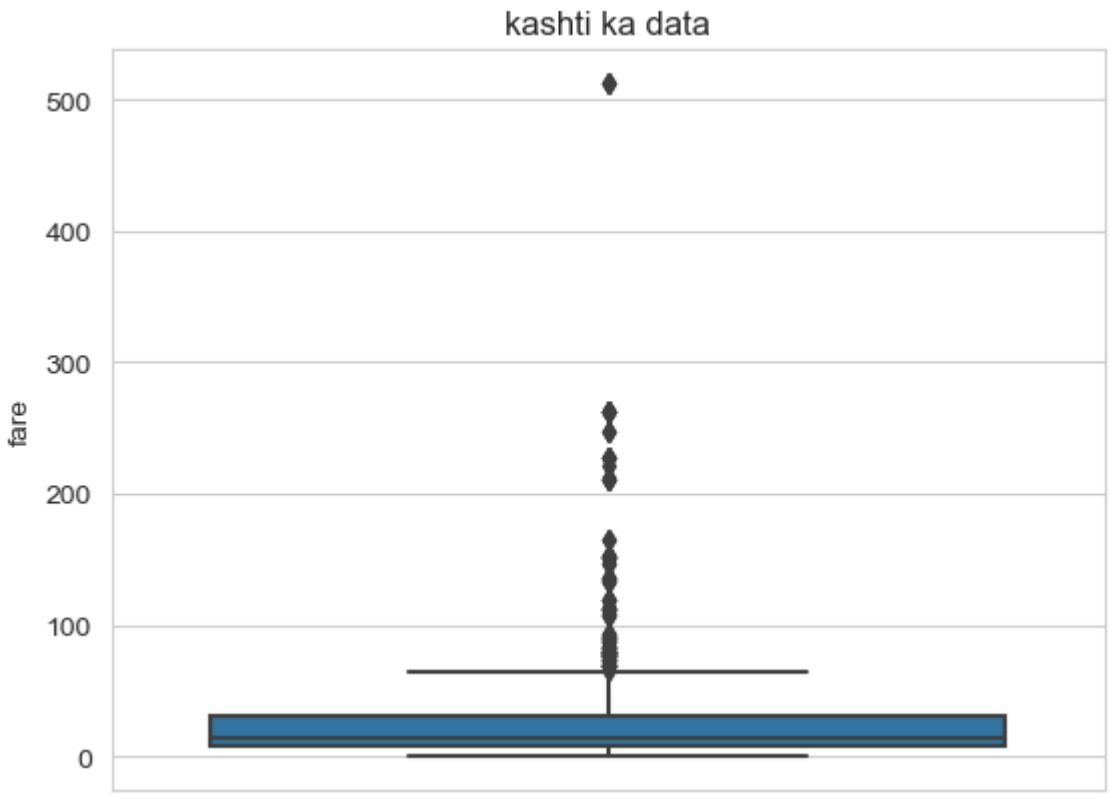
Out[18]:

| | survived | pclass | age | sibsp | parch | fare |
|---|---|---|---|---|---|---|
| **count** | 891.000000 | 891.000000 | 714.000000 | 891.000000 | 891.000000 | 891.000000 |
| **mean** | 0.383838 | 2.308642 | 29.699118 | 0.523008 | 0.381594 | 32.204208 |
| **std** | 0.486592 | 0.836071 | 14.526497 | 1.102743 | 0.806057 | 49.693429 |
| **min** | 0.000000 | 1.000000 | 0.420000 | 0.000000 | 0.000000 | 0.000000 |
| **25%** | 0.000000 | 2.000000 | 20.125000 | 0.000000 | 0.000000 | 7.910400 |
| **50%** | 0.000000 | 3.000000 | 28.000000 | 0.000000 | 0.000000 | 14.454200 |
| **75%** | 1.000000 | 3.000000 | 38.000000 | 1.000000 | 0.000000 | 31.000000 |
| **max** | 1.000000 | 3.000000 | 80.000000 | 8.000000 | 6.000000 | 512.329200 |

## SINGLE VALUE BOXPLOT

In [20]:
```
import seaborn as sns

sns.set_style("whitegrid")

kashti=sns.load_dataset("titanic")

p=sns.boxplot(y=kashti["fare"])
p.set_title("kashti ka data")
```

Out[20]:
```
Text(0.5, 1.0, 'kashti ka data')
```

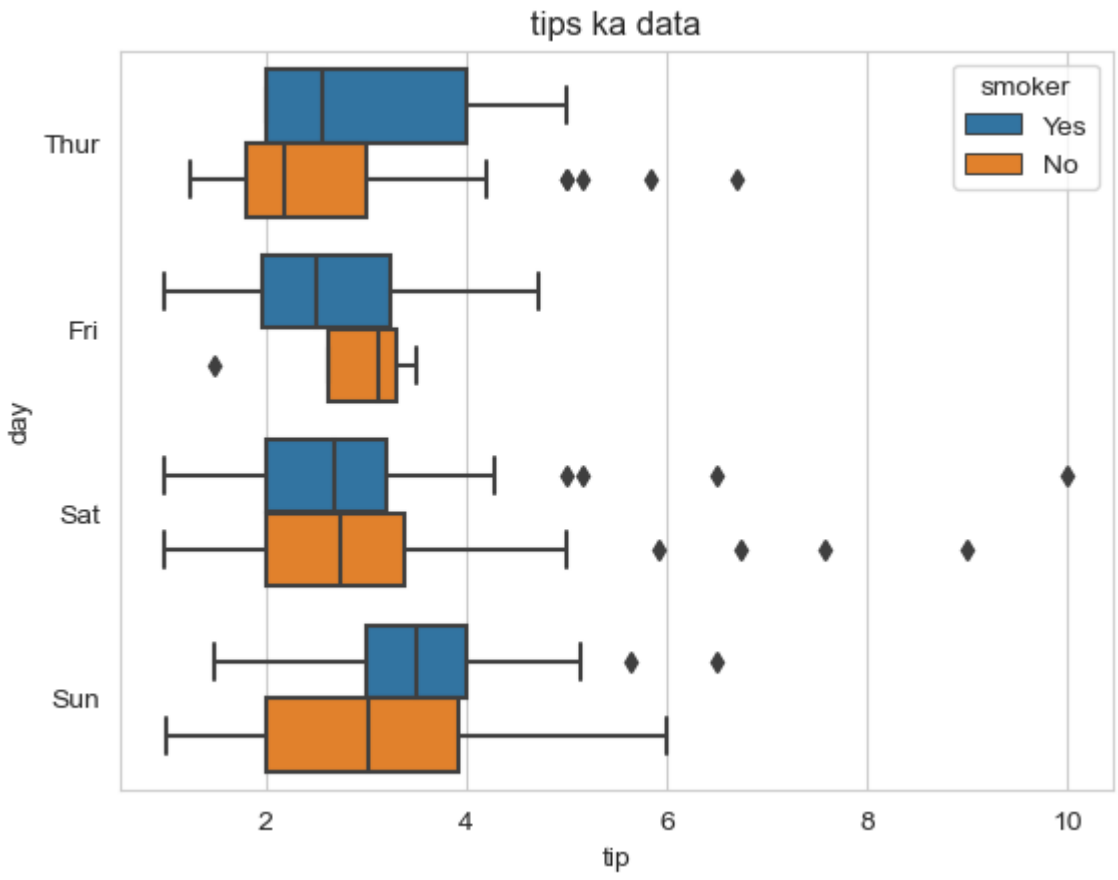


# DOUBLE BOX PLOT IN ONE GRAPH BY USING (HUE)

In [35]:
```
import seaborn as sns

sns.set_style("whitegrid")

tip=sns.load_dataset("tips")
print(tip)

p=sns.boxplot(x="tip", y="day", hue="smoker", data=tip)
p.set_title("tips ka data")
```

```
     total_bill   tip     sex smoker   day    time  size
0         16.99  1.01  Female     No   Sun  Dinner     2
1         10.34  1.66    Male     No   Sun  Dinner     3
2         21.01  3.50    Male     No   Sun  Dinner     3
3         23.68  3.31    Male     No   Sun  Dinner     2
4         24.59  3.61  Female     No   Sun  Dinner     4
..          ...   ...     ...    ...   ...     ...   ...
239       29.03  5.92    Male     No   Sat  Dinner     3
240       27.18  2.00  Female    Yes   Sat  Dinner     2
241       22.67  2.00    Male    Yes   Sat  Dinner     2
242       17.82  1.75    Male     No   Sat  Dinner     2
243       18.78  3.00  Female     No  Thur  Dinner     2

[244 rows x 7 columns]
```

Out[35]:
```
Text(0.5, 1.0, 'tips ka data')
```

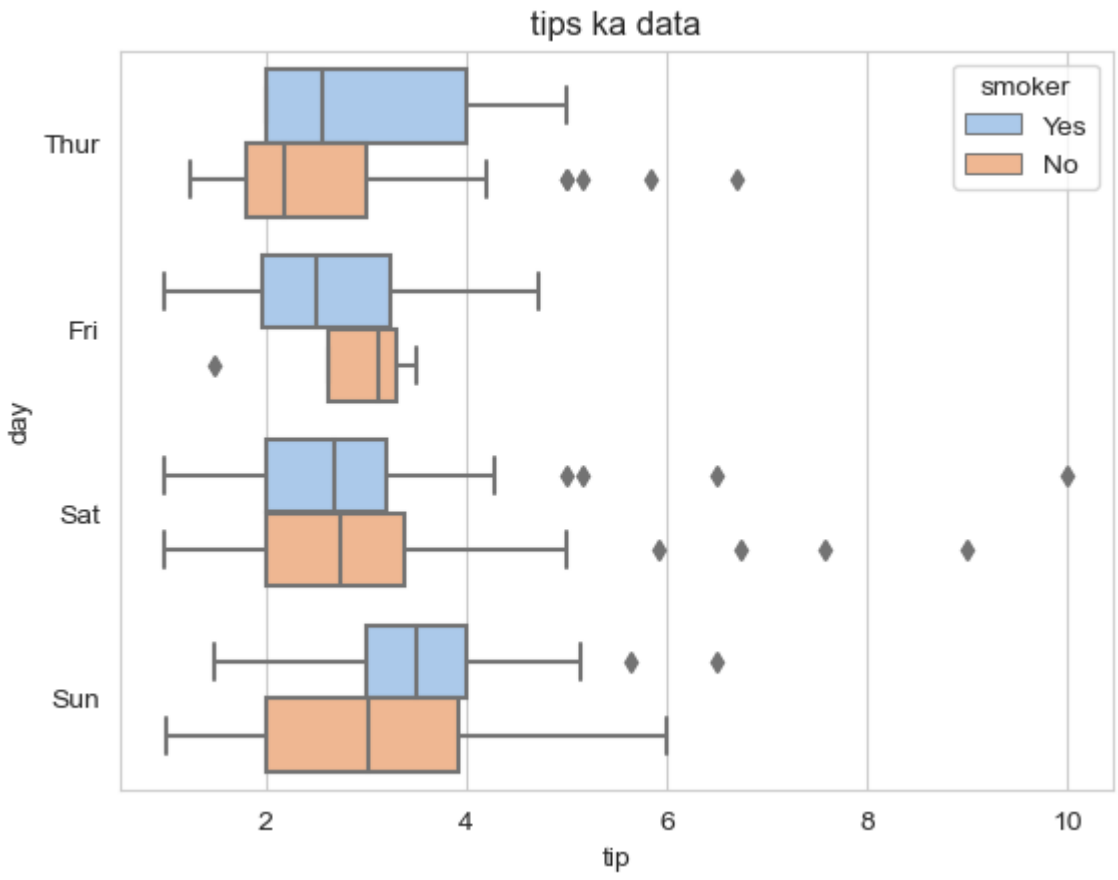


# USE OF PALETTE

In [41]:
```
import seaborn as sns

sns.set_style("whitegrid")

tip=sns.load_dataset("tips")
print(tip)

p=sns.boxplot(x="tip", y="day", hue="smoker", data=tip, palette="pastel")
p.set_title("tips ka data")
```

```
     total_bill   tip     sex smoker   day    time  size
0         16.99  1.01  Female     No   Sun  Dinner     2
1         10.34  1.66    Male     No   Sun  Dinner     3
2         21.01  3.50    Male     No   Sun  Dinner     3
3         23.68  3.31    Male     No   Sun  Dinner     2
4         24.59  3.61  Female     No   Sun  Dinner     4
..          ...   ...     ...    ...   ...     ...   ...
239       29.03  5.92    Male     No   Sat  Dinner     3
240       27.18  2.00  Female    Yes   Sat  Dinner     2
241       22.67  2.00    Male    Yes   Sat  Dinner     2
242       17.82  1.75    Male     No   Sat  Dinner     2
243       18.78  3.00  Female     No  Thur  Dinner     2

[244 rows x 7 columns]
```

Out[41]:
```
Text(0.5, 1.0, 'tips ka data')
```

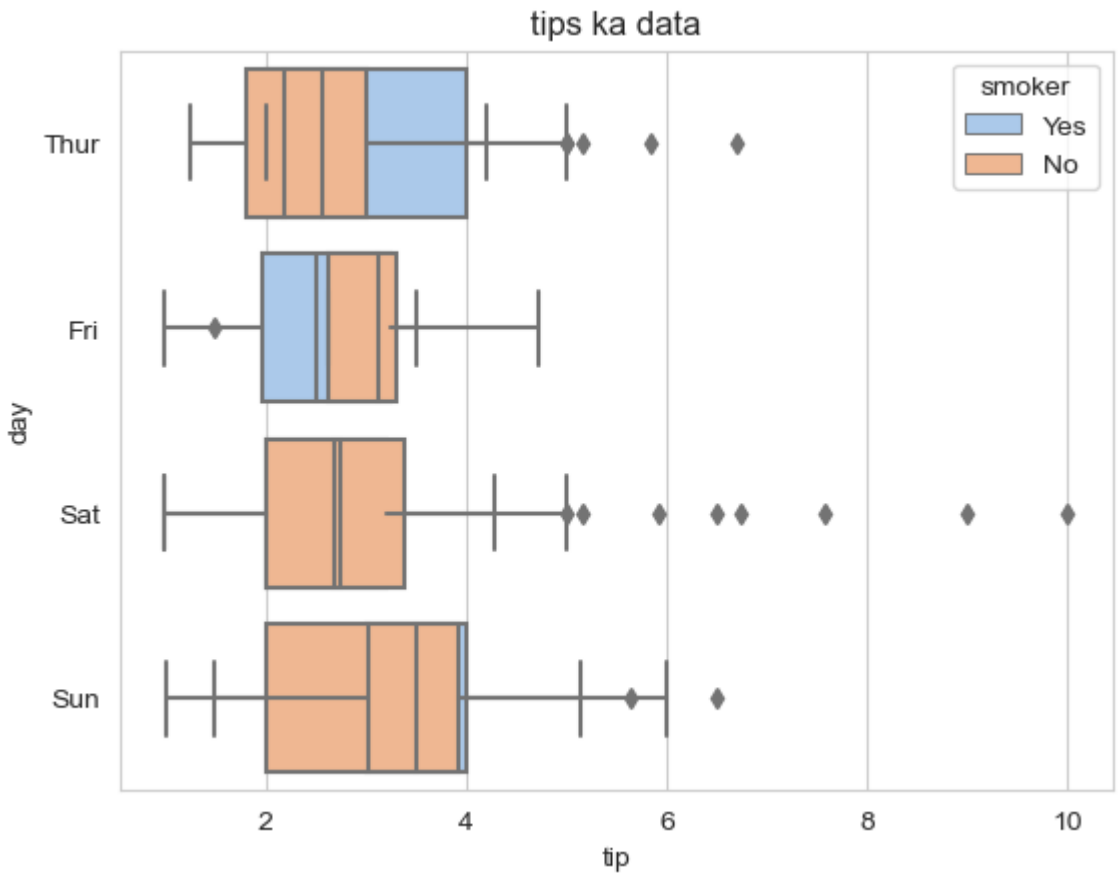


# USE OF DODGE

In [44]:
```
import seaborn as sns

sns.set_style("whitegrid")

tip=sns.load_dataset("tips")
print(tip)

p=sns.boxplot(x="tip", y="day", hue="smoker", data=tip, palette="pastel", dodge=False)
p.set_title("tips ka data")
```

```
     total_bill   tip     sex smoker   day    time  size
0         16.99  1.01  Female     No   Sun  Dinner     2
1         10.34  1.66    Male     No   Sun  Dinner     3
2         21.01  3.50    Male     No   Sun  Dinner     3
3         23.68  3.31    Male     No   Sun  Dinner     2
4         24.59  3.61  Female     No   Sun  Dinner     4
..          ...   ...     ...    ...   ...     ...   ...
239       29.03  5.92    Male     No   Sat  Dinner     3
240       27.18  2.00  Female    Yes   Sat  Dinner     2
241       22.67  2.00    Male    Yes   Sat  Dinner     2
242       17.82  1.75    Male     No   Sat  Dinner     2
243       18.78  3.00  Female     No  Thur  Dinner     2

[244 rows x 7 columns]
```

Out[44]:
```
Text(0.5, 1.0, 'tips ka data')
```

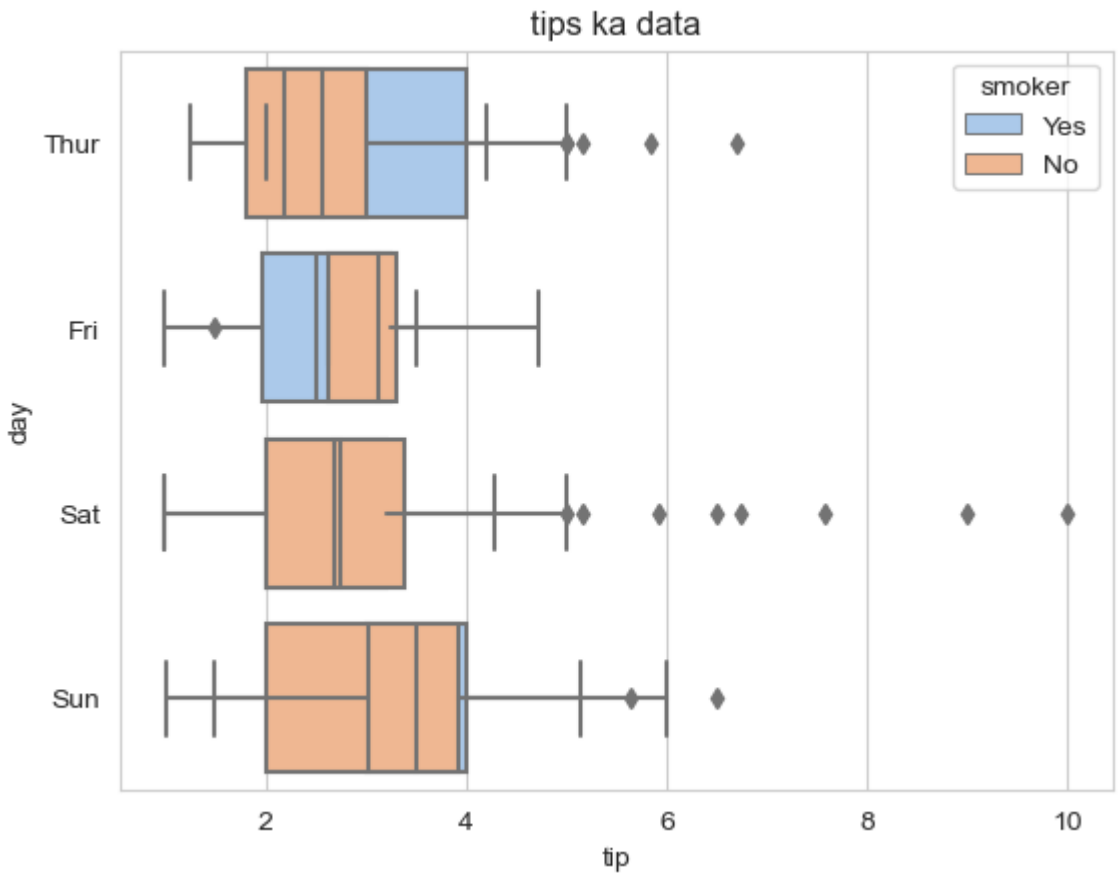


# USE OF ORIENT

In [45]:
```
import seaborn as sns

sns.set_style("whitegrid")

tip=sns.load_dataset("tips")
print(tip)

p=sns.boxplot(x="tip", y="day", hue="smoker", data=tip, palette="pastel", dodge=False,
p.set_title("tips ka data")
```

```
     total_bill   tip     sex smoker   day    time  size
0         16.99  1.01  Female     No   Sun  Dinner     2
1         10.34  1.66    Male     No   Sun  Dinner     3
2         21.01  3.50    Male     No   Sun  Dinner     3
3         23.68  3.31    Male     No   Sun  Dinner     2
4         24.59  3.61  Female     No   Sun  Dinner     4
..          ...   ...     ...    ...   ...     ...   ...
239       29.03  5.92    Male     No   Sat  Dinner     3
240       27.18  2.00  Female    Yes   Sat  Dinner     2
241       22.67  2.00    Male    Yes   Sat  Dinner     2
242       17.82  1.75    Male     No   Sat  Dinner     2
243       18.78  3.00  Female     No  Thur  Dinner     2

[244 rows x 7 columns]
```

Out[45]:
```
Text(0.5, 1.0, 'tips ka data')
```



## USE OF HEAD (for getting info about first 5 values)

In [49]:
```
import seaborn as sns

sns.set_style("whitegrid")

kashti=sns.load_dataset("titanic")
# print(kashti)

kashti.head(10)
```

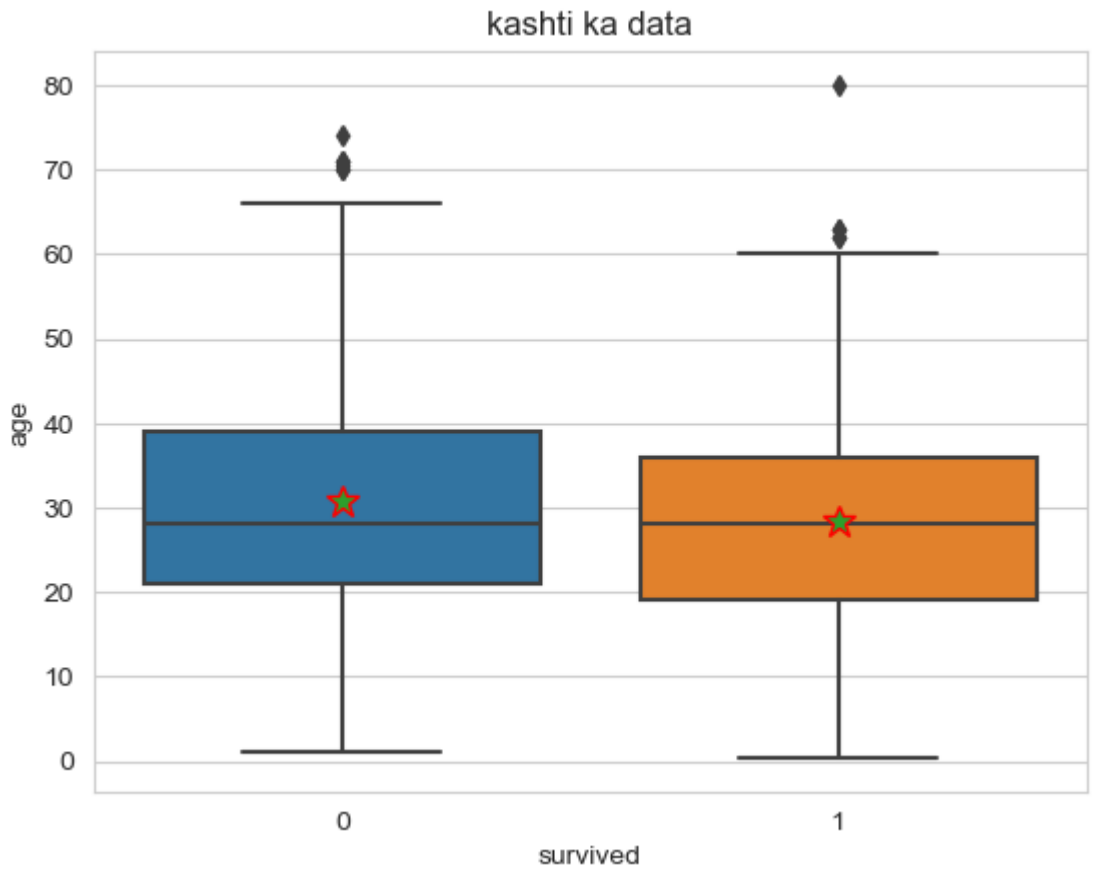
Out[49]:

| | survived | pclass | sex | age | sibsp | parch | fare | embarked | class | who | adult_male | decl |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **0** | 0 | 3 | male | 22.0 | 1 | 0 | 7.2500 | S | Third | man | True | NaN |
| **1** | 1 | 1 | female | 38.0 | 1 | 0 | 71.2833 | C | First | woman | False | C |
| **2** | 1 | 3 | female | 26.0 | 0 | 0 | 7.9250 | S | Third | woman | False | NaN |
| **3** | 1 | 1 | female | 35.0 | 1 | 0 | 53.1000 | S | First | woman | False | C |
| **4** | 0 | 3 | male | 35.0 | 0 | 0 | 8.0500 | S | Third | man | True | NaN |
| **5** | 0 | 3 | male | NaN | 0 | 0 | 8.4583 | Q | Third | man | True | NaN |
| **6** | 0 | 1 | male | 54.0 | 0 | 0 | 51.8625 | S | First | man | True | E |
| **7** | 0 | 3 | male | 2.0 | 3 | 1 | 21.0750 | S | Third | child | False | NaN |
| **8** | 1 | 3 | female | 27.0 | 0 | 2 | 11.1333 | S | Third | woman | False | NaN |
| **9** | 1 | 2 | female | 14.0 | 1 | 0 | 30.0708 | C | Second | child | False | NaN |

## HOW TO SHOW MEAN ON BOXPLOT AND TO CHANGE MARK COLOR AND SIZE

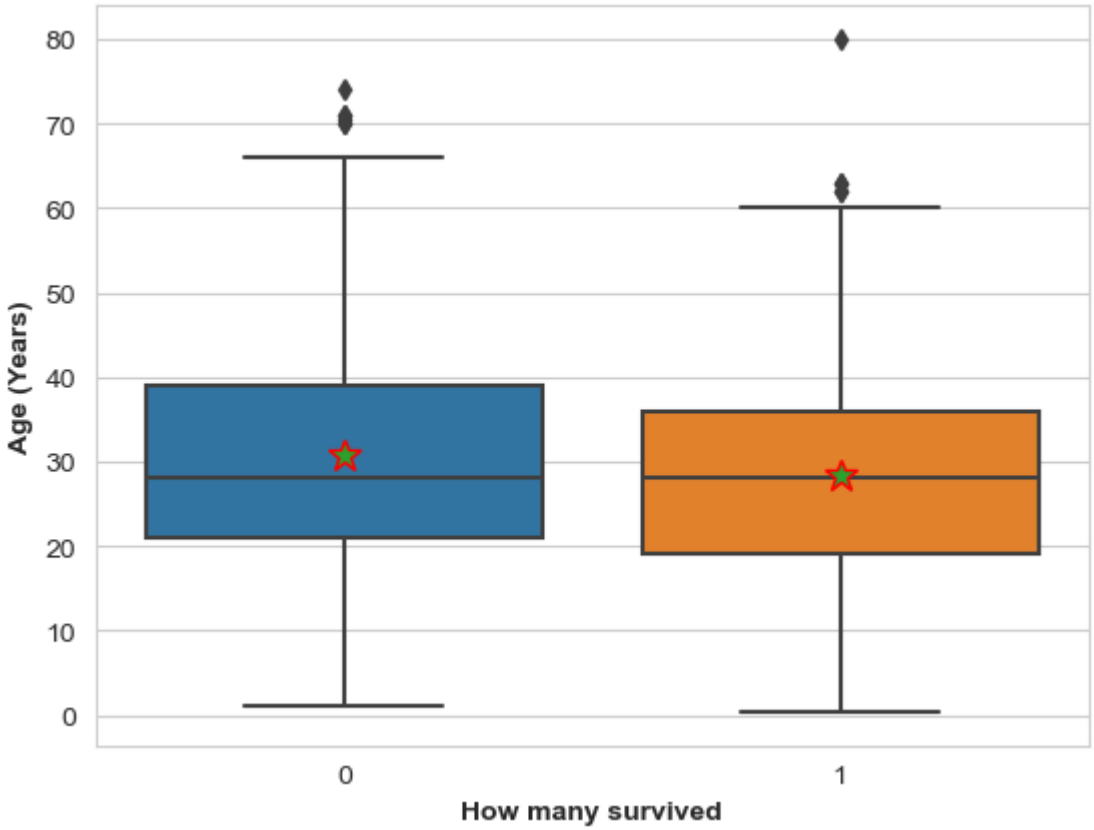
In [55]:
```
import seaborn as sns
import pandas as pd
import numpy as np

sns.set_style("whitegrid")

kashti=sns.load_dataset("titanic")
# print(kashti)

p=sns.boxplot(x="survived", y="age", data=kashti, showmeans=True, meanprops={"marker":
p.set_title("kashti ka data")
```

Out[55]:
```
Text(0.5, 1.0, 'kashti ka data')
```




## HOW TO SHOW LABELS

In [67]:
```
import seaborn as sns
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

sns.set_style("whitegrid")

kashti=sns.load_dataset("titanic")
# print(kashti)

sns.boxplot(x="survived", y="age", data=kashti, showmeans=True, meanprops= {"marker":'
plt.xlabel("How many survived", size=10, weight='bold')
plt.ylabel("Age (Years)", size=10, weight='bold')
p.set_title("kashti ka data", size=10, weight='bold')
plt.show()
```


80
70
60
50
40
30
20
10
0
Age (Years)
0
1
How many survived