



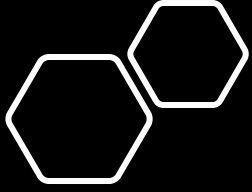
# Home advantage in the NBA

Visualizing data using  
python libraries



# What is home advantage

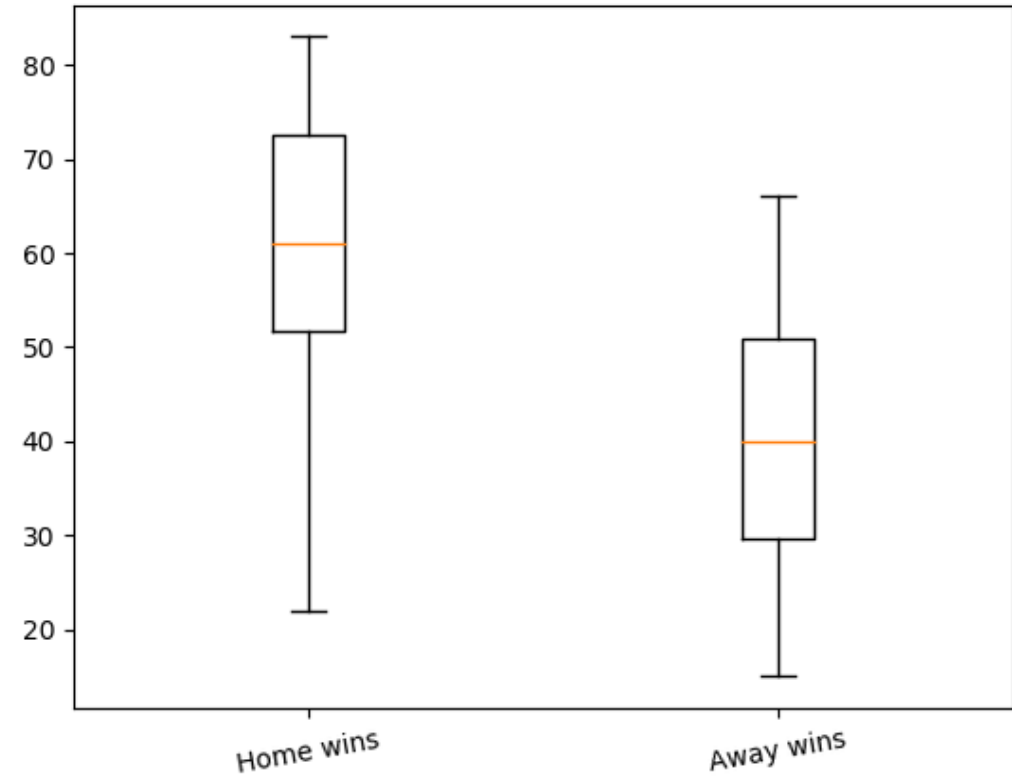
- **A phenomenon in which the home teams in sport win over 50% of games played under a balanced home and away schedule**
- **Observable in different sports**
- **Calculated using win percentages**



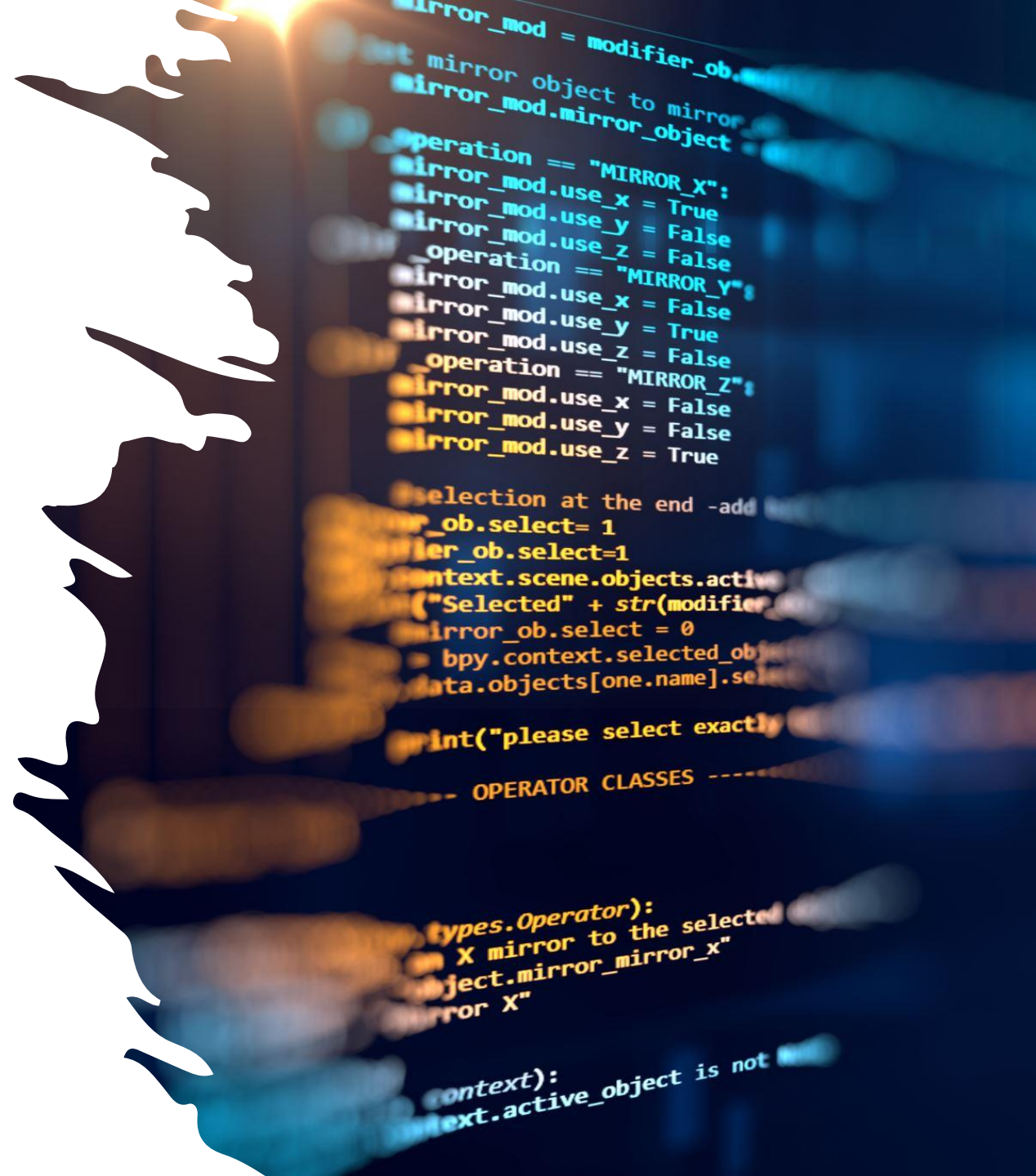
# In real life

- On average, NBA teams won 59% of the games they played at home compared to 40% of the games they played away

Visualizing home advantage in the NBA teams



- Used Matplotlib to draw box plot
- Used numpy to process data



```
mirror_mod = modifier_ob.  
#set mirror object to mirror_  
mirror_mod.mirror_object  
operation == "MIRROR_X":  
mirror_mod.use_x = True  
mirror_mod.use_y = False  
mirror_mod.use_z = False  
operation == "MIRROR_Y":  
mirror_mod.use_x = False  
mirror_mod.use_y = True  
mirror_mod.use_z = False  
operation == "MIRROR_Z":  
mirror_mod.use_x = False  
mirror_mod.use_y = False  
mirror_mod.use_z = True  
  
#selection at the end -add  
mirror_ob.select= 1  
modifier_ob.select=1  
context.scene.objects.active  
("Selected" + str(modifier_  
mirror_ob.select = 0  
= bpy.context.selected_obj  
data.objects[one.name].select  
  
print("please select exactly  
  
-- OPERATOR CLASSES ----  
  
types.Operator):  
on X mirror to the selected  
object.mirror_mirror_x"  
mirror X"  
  
context):  
context.active_object is not
```



# Looking beyond basic visualization

- Python has other packages for deeper analysis such as SciPy, Pandas, seaborn, sci-kit learn
- For instance:
  1. Compare home advantage during covid versus pre-pandemic
  2. Correlation between home advantage and other factors such as distance travelled by team, number of fans
  3. Calculating t-tests, confidence intervals

# References

## 1. *Stack Abuse*

<https://stackabuse.com/matplotlib-box-plot-tutorial-and-examples/>

## 2. SciPy

<https://docs.scipy.org/doc/scipy/reference/stats.html>

## 3. NBA

<https://www.nba.com/stats/>