ProcessVideo()

1. WatchVideo_SendtoTXT()
2. SendFramesToPKL()
3. CleanOpencvData()
4. InitalizePlayerLists()
5. DeterminePlayer()
   - returns correct player id
   - if possible_players is length ≥ 2
6. BestFitPlayer()
7. FillPlayerCoordinates()
8. InterpolatePlayerCoordinates()

after player_dict is finished

9. BackFill()

called in main after CleanOpenCvData() in this order

10. RescaleCoordinates()
11. SendFinishedPlayerDict()
12. ViewPlayerDict()

ProcessVideo() class finished and produces

- .json and .pkl to be used in GUI

To use GUI create correct path to json and pkl files and run

(1) Loops through video and calculates center coords of moving objects
→ sends these coords to .txt file

(2)
- loops through video and stores frames in a list
→ sends this list of PKL file
→ List is used to watch video in GUI

(3) Acts as "main()" for cleaning functions
- Loops through .txt file coords and sorts player coords into player lists
→ calls all necessary functions to sort player coords to correct list

(4)
- Adds new spot at the end of each player list w/ that players most recent coords
(makes sure all player list is the same size)

(5)
- Is sent player coords, id, and frame num
- Determines who the coords belong to based on distance

(6)
- Determines the correct player for coords based on which direction players are moving

(7)
- fills in gaps in frames between consecutive elements of all player lists

(8)
- Fills in jumps in coordinates
→ smooths jumps in coordinates
["100,200", "100,200", "200,300"
→ ["100,200", "150,250", "200,300"

(9)
- Fills in all missing frames before player was initally tracked all the way to frame 1
→ Ex: if player started moving at frame 30, this function creates 29 new spots for frame num 1–29 (these spots are filled in with position found at frame 30)

(10)
- Rescales coords (in player_dict) to size 0.25 for watching in GUI

(11)
- Sends finished player_dict (stores all finish player lists) to .json file for GUI

(12)
- Sends player_dict to .txt file for viewing