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1  """goals7system.py
2
3  This is the main script that coordinates both the controller and
4  the detector. Feel free to play/edit/...q
5
6  """
7
8  # Import the system parts
9  import threading
10 import traceback
11
12 # Import your pieces. Change the "from" names (being the file names)
13 # to the file names of your two code parts. Also, this is a great way
14 # to quickly switch which detector to run. E.g. you could import from
15 # "facedetector" in place of "balldetector".
16 from goals8motor import controller
17 from goals8camera import detector
18 # from goals7facedetector import detector      # Alternate option
19
20
21 #
22 # Shared Data
23 #
24 class Shared:
25     def __init__(self):
26         # Thread Lock. Always acquire() this lock before accessing
27         # anything else (either reading or writing) in this object.
28         # And don't forget to release() the lock when done!
29         self.lock = threading.Lock()
30
31         # Flag - stop the detection. If this is set to True, the
32         # detection should break out of the loop and stop.
33         self.stop = False
34
35         # Motor data
36         self.motorpan = 0.0
37         self.motortilt = 0.0
38
39         # Object Data - PLEASE UPDATE TO ADD THE DATA YOU NEED!
40         # self.objectpan = 0.0
41         # self.objecttilt = 0.0
42
43         self.newdata = False
44
45         self.detectedobjs = []
46
47
48 #
49 # Main Code
50 #
51 def main():
52     # Prepare a single instance of the shared data object.
53     shared = Shared()
54
55     # Create a second thread.
56     thread = threading.Thread(target=detector, args=(shared,))
57
58     # Start the second thread with the detector.
59     print("Starting second thread")
60     thread.start()      # Equivalent to detector(shared) in new thread
61
62     # Use the primary thread for the controller, handling exceptions
63     # to gracefully to shut down.
64     try:
65         controller(shared)
66     except BaseException as ex:
67         # Report the exception
68         print("Ending due to exception: %s" % repr(ex))
69         traceback.print_exc()
70

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71     # Stop/rejoin the second thread.
72     print("Stopping second thread...")
73     if shared.lock.acquire():
74         shared.stop = True
75         shared.lock.release()
76     thread.join()          # Wait for thread to end and re-combine.
77
78 if __name__ == "__main__":
79     main()
```