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///////////////////////////////////    CYA_Client       /////////////
////  this tab manage data from camera tracking software


/// import the library that allow to receive the information from camera tracking software
import oscP5.*;


class CYAClient {
  OscP5 osc;
  HashMap cyapeople;
  PApplet parent;

  CYAClient (PApplet p,int port)  {
    parent = p;
    osc =new OscP5(this,port);
    cyapeople =new HashMap();
  }

  int[][] updatePeople() {
    ArrayList removeList =new ArrayList();
    Iterator i = cyapeople.entrySet().iterator();
    while (i.hasNext()) {
      Map.Entry person = (Map.Entry)i.next();
      String pKey = (String)person.getKey();
      int[] pData = (int[])person.getValue();

      ////////
      ///this cycle remove the information about the user that get out the active zone
      if  (millis() > (pData[1]+pData[2]) )///// ATTENTION!!! This code line create the time gap between the blob death and data
      {
        removeList.add(pKey);
      }
      /////////
    }
    for (int j=0; j < removeList.size(); j++) {
      String pKeyToRemove = (String)removeList.get(j);
      cyapeople.remove(pKeyToRemove);
    }
    if (cyapeople.size() > 0) {
      int[][]  people =new int[cyapeople.size()][];
      int p=0;
      i = cyapeople.entrySet().iterator();
      while (i.hasNext()) {
        Map.Entry person = (Map.Entry)i.next();
        int[] pData = (int[])person.getValue();
        people[p] = pData;
        p++;
      }
      return people;
    }
    else {
      int[][]  people =new int[0][];
      return  people;
    }
  }


/// this void create an array length same as the blob number. For each blob create 9 cells with this data:
/// [0] blob ID, [1] stop time, [2] age time, [3] X, [4] Y, [5] previous X , [6] previous Y, [7] blob wdth, [8] blob height.

  void oscEvent(OscMessage theOscMessage) {
    if (theOscMessage.addrPattern().equals("cya/personMoved/")){
      int pID = theOscMessage.get(0).intValue();
      String pKey =str(pID);
      int pTimeStamp;
      int pPreviousX;
      int pPreviousY;
      if (cyapeople.containsKey(pKey)) {
        pTimeStamp = ((int[])cyapeople.get(pKey))[1];
        pPreviousX = ((int[])cyapeople.get(pKey))[3];
        pPreviousY = ((int[])cyapeople.get(pKey))[4];
      }
      else {
        pTimeStamp =millis();
        pPreviousX = -1;
        pPreviousY = -1;
      }
```

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        int pAge = theOscMessage.get(1).intValue() * 100;
        if (pAge >millis()) {
            pAge =millis();
        }
        int pX =int(theOscMessage.get(2).floatValue()  *width);
        int pY =int(theOscMessage.get(3).floatValue()  *height);
        int pWidth =int(theOscMessage.get(8).floatValue()  *width);
        int pHeight =int(theOscMessage.get(9).floatValue()  *height);
        int[] pData = {
            pID, pTimeStamp, pAge, pX, pY, pPreviousX, pPreviousY, pWidth, pHeight                                 };
        cyapeople.put(pKey, pData);
      }
    }
  }
```