FYP IDEA

Group member:

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Gesture control game with computer vision and machine learning

Project Motives:

To avoid or minimize the use of keyboard in future.

Project Component:

1. Computer vision (To detect hand)
2. machine learning (make predictions for upcoming matches)
3. Web development with database (For user interference)
4. Game development

Python libraries use:

- Mediapipe: will use for Hand Tracking
- Opencv: opencv will help in image processing
- TenserFlow: Tenserflow will help in understanding the hand gestures**.**

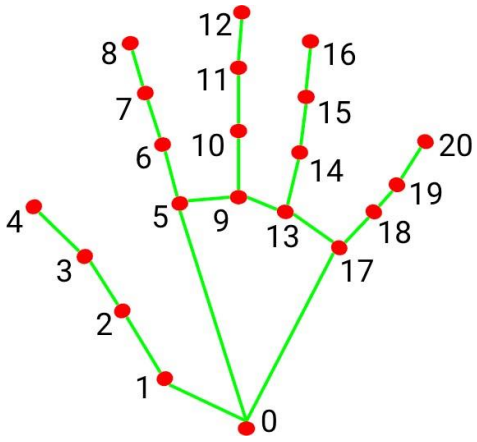
Web development:

- Django
- Django rest Api's

Database:

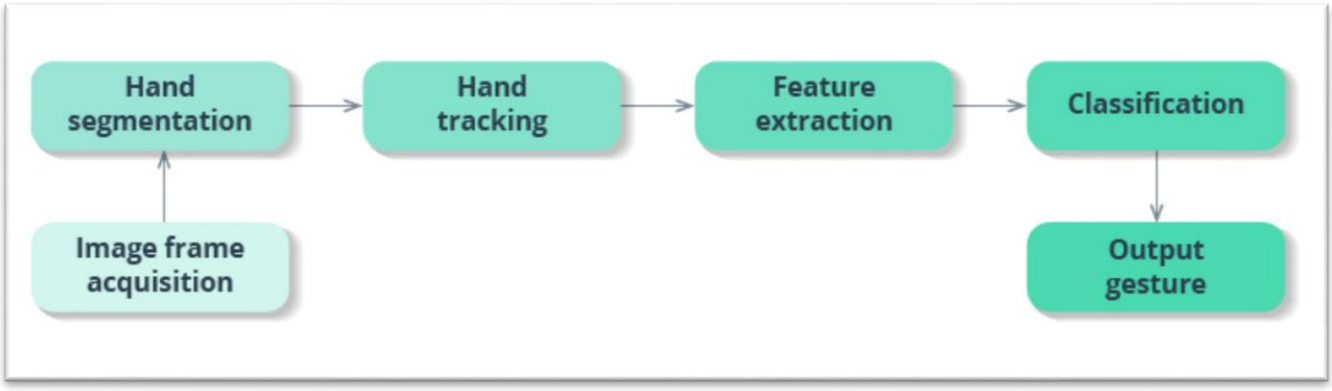
- Mysql databse

Media Pipe is a cross-platform framework, which we will use for human body tracking i.e.



0. WRIST
1. THUMB_CMC
2. THUMB_MCP
3. THUMB_IP
4. THUMB_TIP
5. INDEX_FINGER_MCP
6. INDEX_FINGER_PIP
7. INDEX_FINGER_DIP
8. INDEX_FINGER_TIP
9. MIDDLE_FINGER_MCP
10. MIDDLE_FINGER_PIP
11. MIDDLE_FINGER_DIP
12. MIDDLE_FINGER_TIP
13. RING_FINGER_MCP
14. RING_FINGER_PIP
15. RING_FINGER_DIP
16. RING_FINGER_TIP
17. PINKY_MCP
18. PINKY_PIP
19. PINKY_DIP
20. PINKY_TIP

We will track human hand, recognize the gesture and will change into commands for our AI model/ program.



First will detect the hand image from web camp video and convert it into binary digits with the help of numpy library. We will feed these binary image to tenser flow trained model to extract and recognize the hand gesture and convert it into command.

Machine learning part:
Player previous matches performance data will use in production of next match score.

Reference:

In "Ready Player One," there are a few different ways that players manage to walk and run through virtual reality, while staying in place in the real world. Wade uses an omni-directional treadmill that he control with his Hands, feet and other body parts which allows him to travel in 360 degrees, at any speed he likes.

YouTube: https://youtu.be/viSM4UbpG2Y
https://youtu.be/dVjAjQAeYtM