Project for the RAS course

1. **Team Name: DancingQueens**

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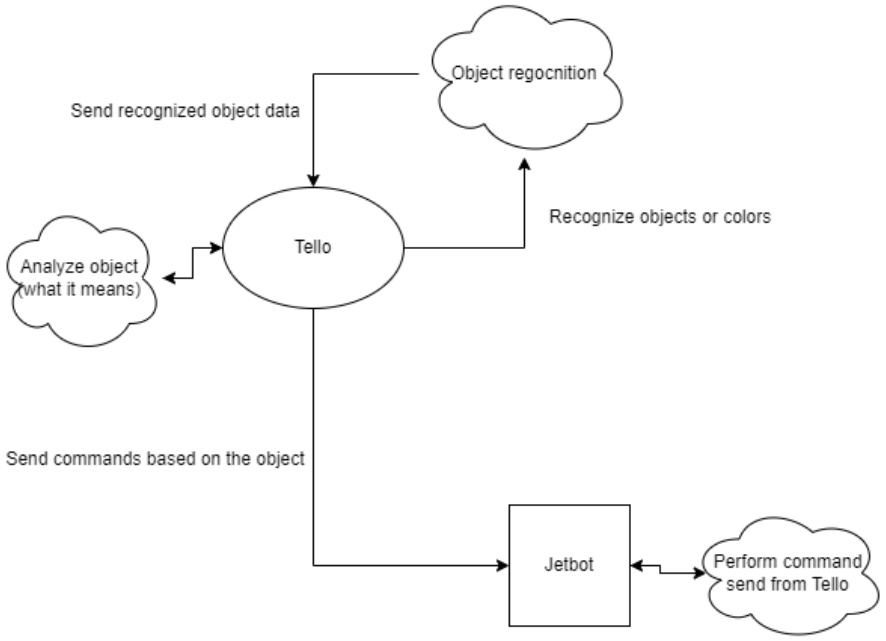
2. We will be doing synchronized choreography with a Tello drone and a Jetbot. We will set it up in a way that the Tello drone identifies objects or colors, and then passes the data to the Jetbot, which then uses a set of dance moves matching the given parameters.

3. Tello, Jetbot, ros2, open cv, jetson, visual studio code, github…

   We will be using Tello drone and Jetbot as our devices. I don't think that we need any additional sensor, only the camera that is included in the tello drone.

   As for algorithms I think we will use basic object detection or color detection softwares in the Tello drone. For Jetbot we will be using basic movement commands.



4. **GitHub repo link**

   https://github.com/ranzuh/ras_project

5. We all are rather familiar with jetbots from previous courses, and doing some kind of detection with the tello drone as we did in the previous course where we had to implement face detection to the tello drone and make it follow your face in a certain distance. After the first assignment in this course we then have experience with detecting shapes and also faces with the drone, so that comes in handy when trying to detect the certain signals for our jetbot. Also moving the jetbot and giving it simple moving commands we have covered quite many times now.

   Probably the riskiest or at least the part that we have least amount of experience is the communication between these two devices. But as we are sending just simple messages I think we can handle that.

6. We expect the main challenges to be in the Tello drone phase. Image recognition is something that we've practiced, but it can be a bit tricky sometimes. Also, making the bot work together in the network could prove to be difficult, as it is something we've never done before this project. I think that at least making the Tello pass through some of the tracks is useful in completing the project, and libraries that we will use are probably at least somewhat familiar to everyone. Our project as is will probably not require additional sensors.

7. Eetu is our main developer.

   Roope & Jesse will be all around guys, helping with coding, testing and writing documents.

   Antti will be our main document guy and focusing mainly on the report.

8. We cannot say how we will be dividing our actual efforts, it will be more clearer later and we can then update this document based on how things pan out.

9. I think the plan is to set some objects or colors, for example an top of bookshelf, drone is then supposed to fly up there and recognize these colors and send certain commands to the jetbot according to what the image or color was (as in example red ball could be "spin 360").