

# VIRTUAL CONTROL ROOM

COMPUTER GRAPHICS LAB, PROJECT PROPOSAL

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# AGENDA

- Motivation
- Proposal and details
- How to implement
- How can we take it forward?
- Project features and definitions



MOTIVATION

# PURPOSE OF SECURITY CONTROL ROOM

- A security control room brings together the elements of a security operation and offers a logical way to coordinate the effects of security systems, personnel and response options. A security control room containing monitoring and control systems can commonly be found in: Universities, Hotels, Banks, Shopping Malls, Industrial sites, Airports, Ports



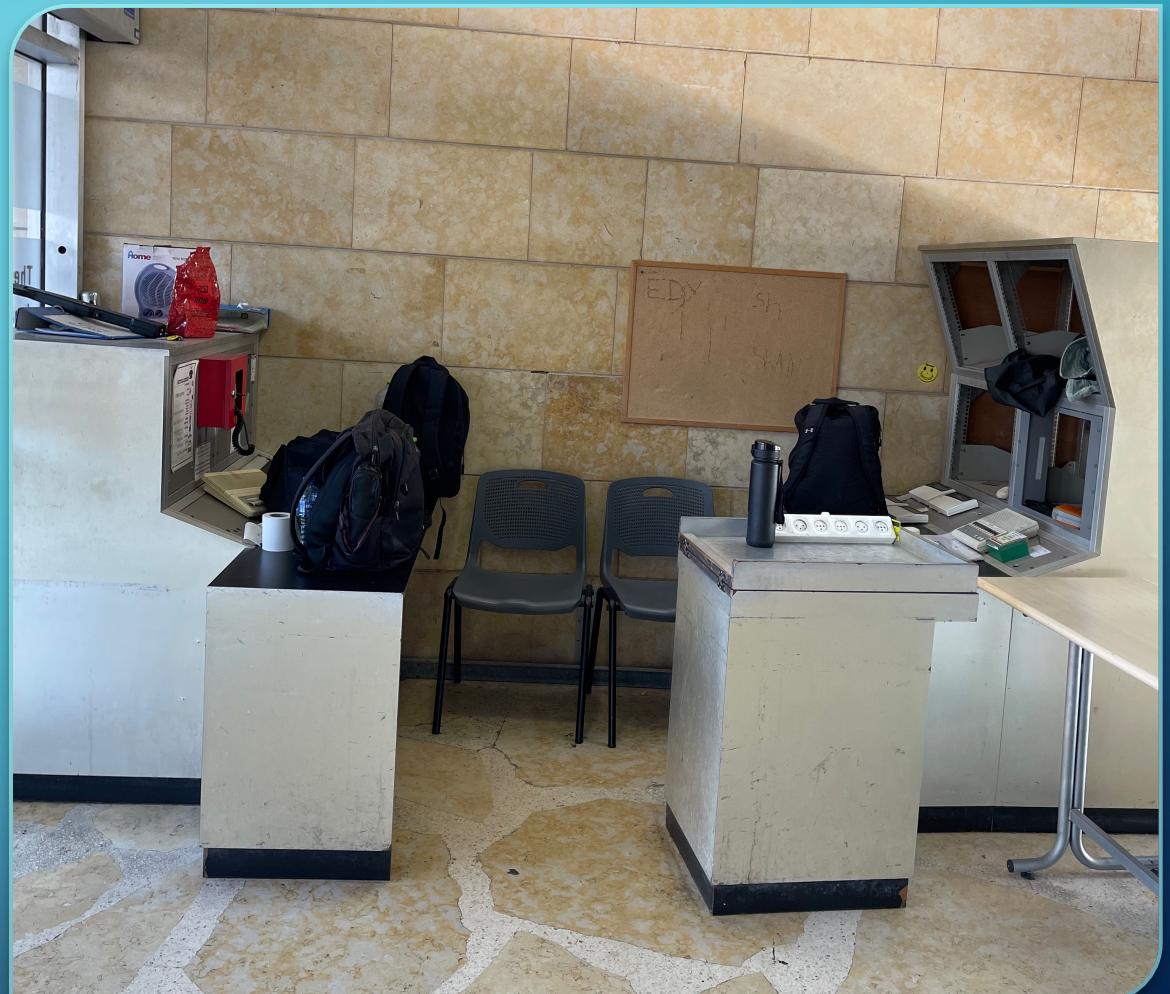
# INTEGRATION OF THE TECHNOLOGY

- A central security control room provides an opportunity to monitor a variety of technologies and systems:
  - Monitors
  - Digital Video Recorders
  - Pan, Tilt and Zoom cameras
  - Fire alarm and suppression
  - Emergency intercom
  - Door alarm
  - Building speakers
  - Heating, venting, and cooling (HVAC)
  - Gas sensors and alarms
  - Time and date
  - Location of alarms



## DIFFICULTIES AND REALITY

- Not easy to set up a room control
- Need a lot of equipment
- Large space that needs to be updated and maintained frequently
- Expensive, especially for small business
- Reality



Jacob's "room" control, bulding of computer science, Haifa university

# PROPOSAL



# “UNIVERSITY VIRTUAL CONTROL ROOM”

- Implemented by Oculus and Unity.



# HOW TO IMPLEMENT?

# OCULUS AND UNITY

- Client-side is an application that I will develop for Oculus quest 2 using Unity framework:
  - Big-virtual room with fresh GUI
  - Monitors
  - Controls and buttons
  - Maps
  - Emergency call
  - Building intercom
  - Date and time
  - Status of AC
  - Etc..
  -

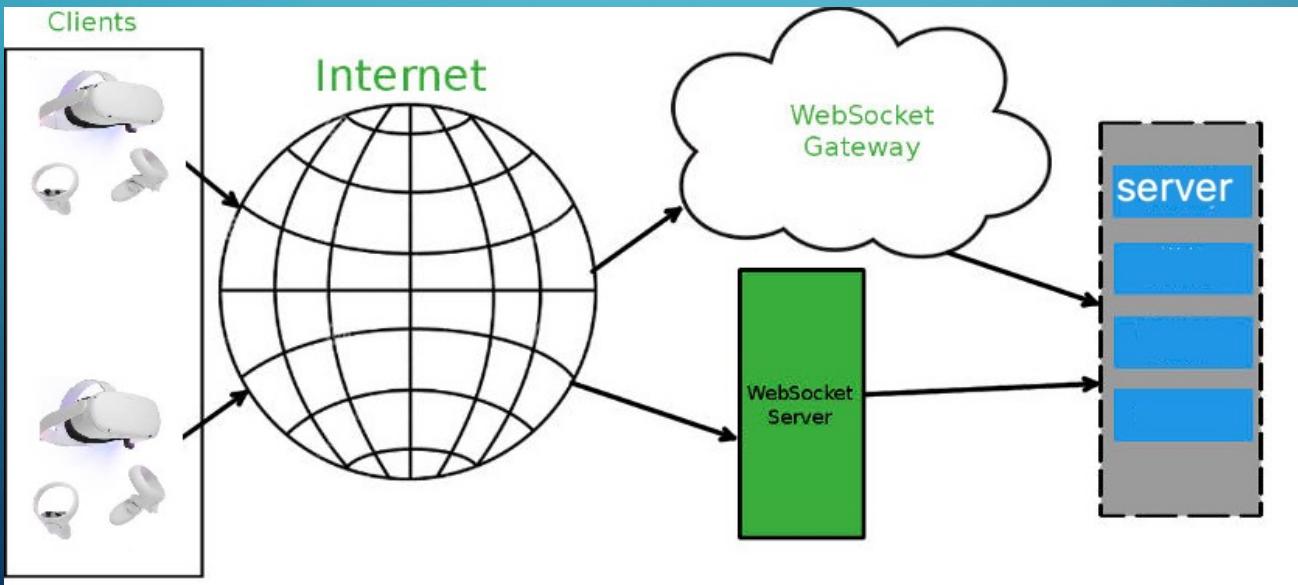


Made with



# SERVER SIDE

- Server side will be implemented in Python and it will provide:
  - Client connection (our Oculus)
  - Transmit a live video to clients (connected cameras)
  - Entercom (simulate building announcements)
  - Emergency calls (simulation)
  - Status of connected monitors (AC, Gas, Fire, traffics, weather, time, location etc.)



# HOW CAN WE TAKE IT FORWARD?

- This idea can be taken ahead:
  - Machine learning
  - IOT ( controlling light, AC, sensors (heat, gas, fire) ...

IT'S JUST A START OF A REAL THING!



# PROJECT FEATURES AND DEFINITIONS

- Here we need to define together what features to implement in our course framework, what can we do in a full 10 days. And maybe we will continue after that 😊



Thanks!