Experiment No:-10

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Branch:- ECE
Section/Group:- 1-A
Semester: - 6th
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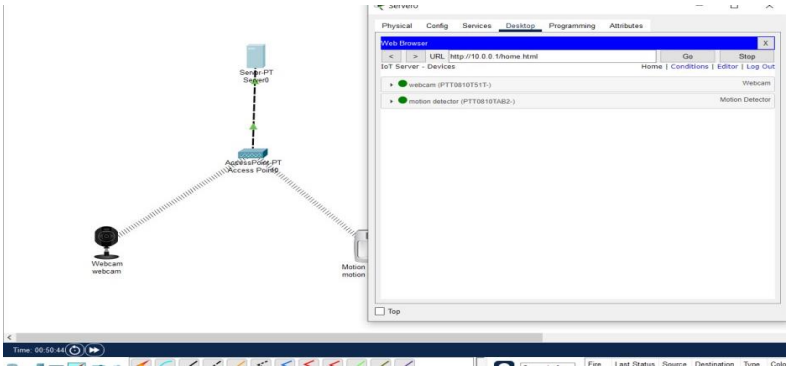
Subject Name: Computer Networks Lab
Subject Code: 20ECP-374

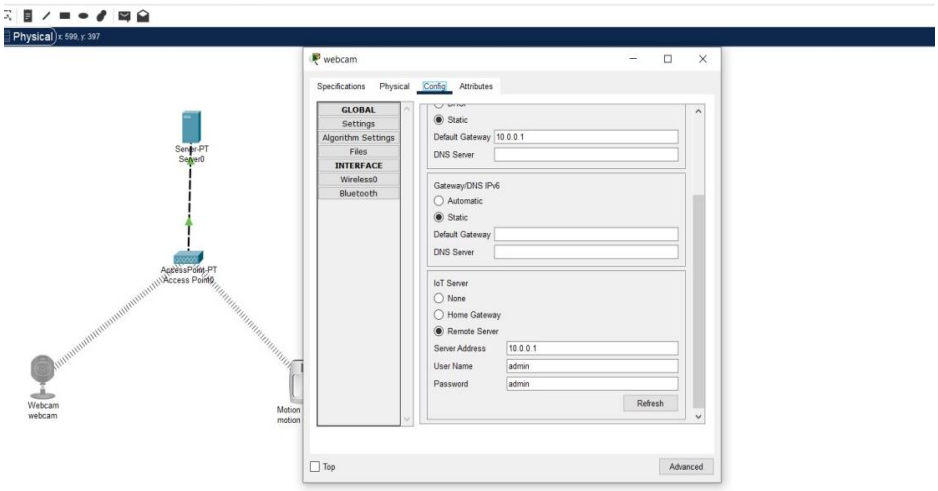
1. **Aim/Overview of the practical:** To design and implementation of an intrusion detection system using Cisco Packet Tracer.

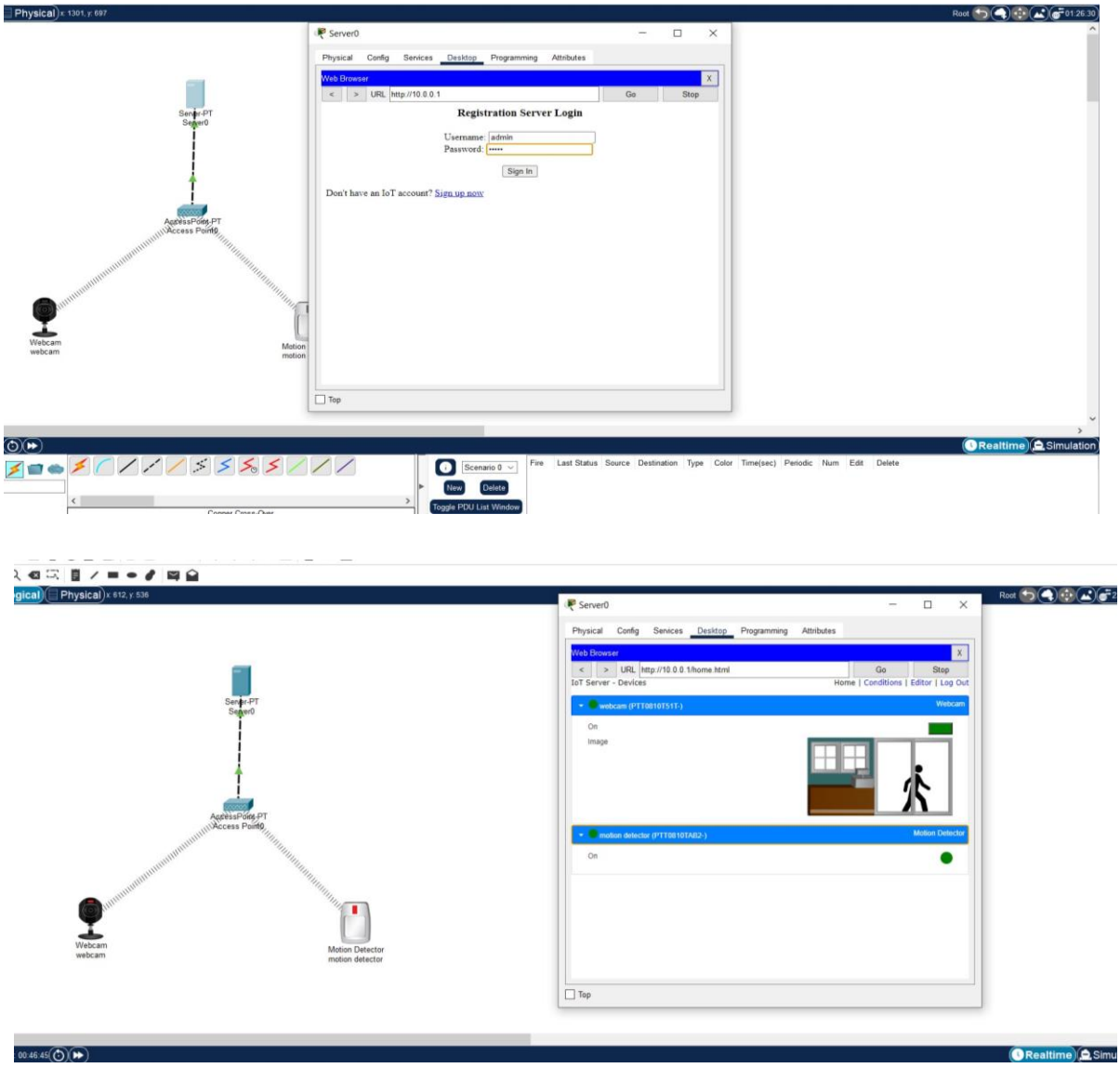
2. **Apparatus/Tool Used:** Cisco Packet Tracer

3. **Theory:** To develop a home security system using motion detection and a webcam in Cisco Packet Tracer, we need to comprehend the required components. These include a motion detector and a webcam to detect movement and capture videos, respectively. Additionally, we need a network infrastructure for communication between the components and other devices that need access, such as a PC or smartphone. Once the motion detector detects motion, it triggers the webcam to start recording. The recorded video is then sent to a computer for processing and storage, which could be a PC or server, depending on the system's size and complexity. Software is also necessary to analyze the video feed for security risks. Regular testing is crucial to ensure the system remains reliable, and any issues are dealt with promptly. The development of a home security system requires a combination of hardware, software, and network infrastructure knowledge to design and implement a system that meets security needs.

4. Screenshots:







5. Steps for experiment/practical:

1. **Build the network topology:** Connect the components as shown in the diagram below in Cisco Packet Tracer.
2. **Configure the devices:** Configure each device by adding the required IP addresses in respective fields.

3. **Configure the Switch:** Switch - on register the services by the user by clicking on it and going to services then IoT press on.
4. **Create credentials:** Go to Sign-up now and enter the username and password of your choice and click create.
5. **Configure the components:** Configure the camera and motion sensor.
6. **Testing the system:** Run the project to check the outcome.

6. Result and Summary:

- IoT stands for "Internet of Things," which refers to a network of interconnected physical devices that are embedded with sensors, software, and other technologies that allow them to communicate and exchange data with other devices and systems over the internet. In other words, IoT is a network of devices that are capable of collecting and sharing data with each other without the need for human intervention.
- A server is a computer system that provides various services or functions to other devices, typically connected to a network. Some key features are File Storage and Sharing, Application Hosting, User and Resource Management, Backup and Recovery, Security and Monitoring, Remote Access.
- In a computer network, a switch is a device that connects multiple devices together and allows them to communicate with each other. The primary function of a switch is to forward data packets between devices within a network. Some key features are Network Segmentation, Quality of Service (QoS), Traffic Control, Increased Bandwidth, Network Monitoring.

7. Additional Creative Inputs (If Any):

NA

8. Learning outcomes (What I have learnt):

- Learnt working of various networking components and operating systems.

- Learnt about working of a motion sensor and webcam.
- Learnt to put conditions in the server.

Evaluation Grid (To be filled by Faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writing learning objectives/Outcomes. (To submit at the end of the day)		
2.	Viva		
3.	Student Engagement in Simulation/Demonstration/Performance and Controls/Pre-Lab Questions.		
	Signature of Faculty (with Date):	**Total Marks Obtained:**	