SNS COLLEGE OF ENGINEERING

Kurumbapalayam(Po), Coimbatore – 641 107
Accredited by NAAC-UGC with 'A' Grade
Approved by AICTE, Recognized by UGC & Affiliated to Anna University, Chennai

Department of Information Technology

Course Name – 19IT503 Internet of Things

III Year / V Semester

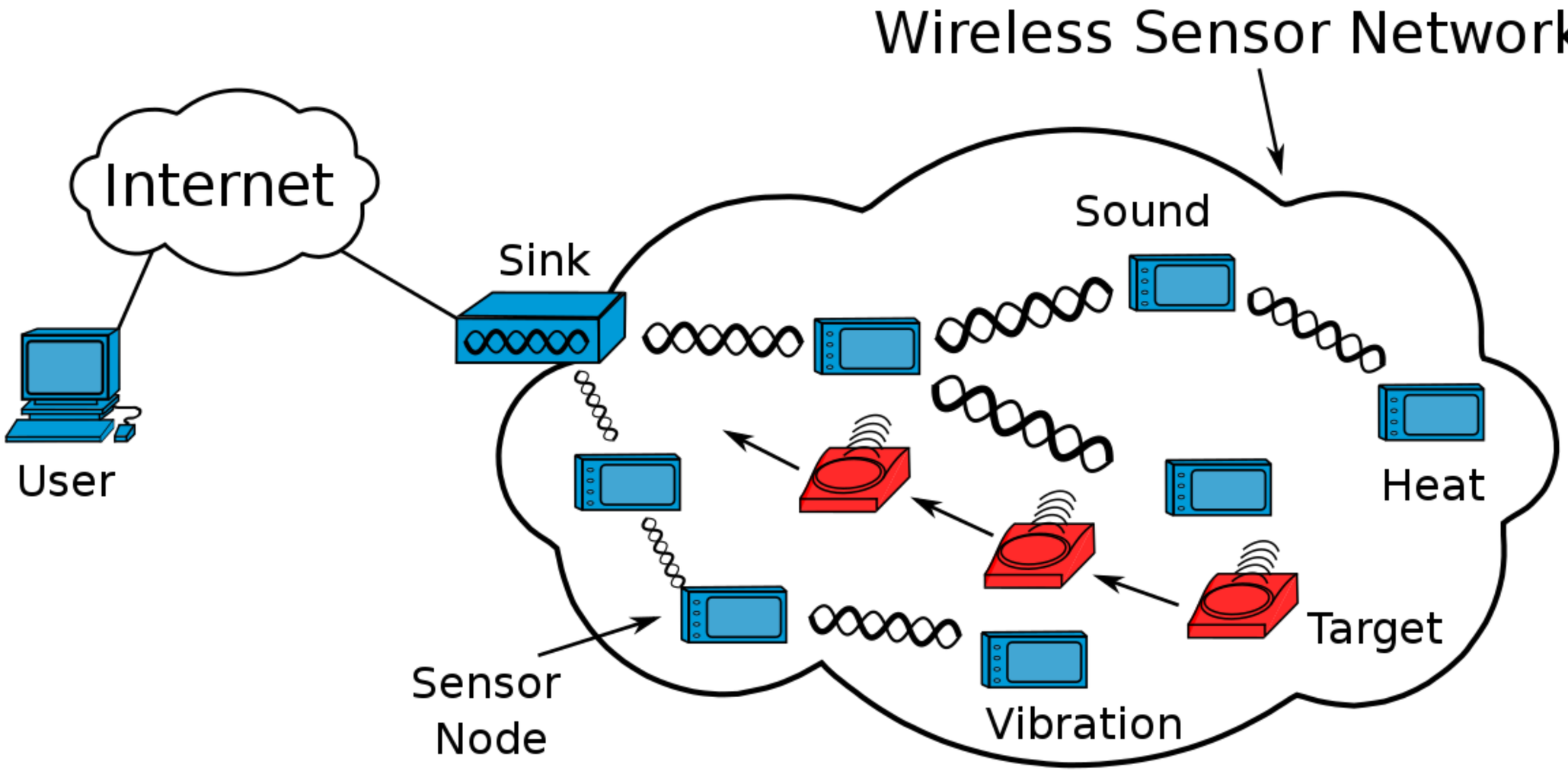
Unit 2 – FUNDAMENTAL MECHANISMS & KEY TECHNOLOGIES

Topic 6- IoT Enabling Technologies– WSN, Cloud Computing

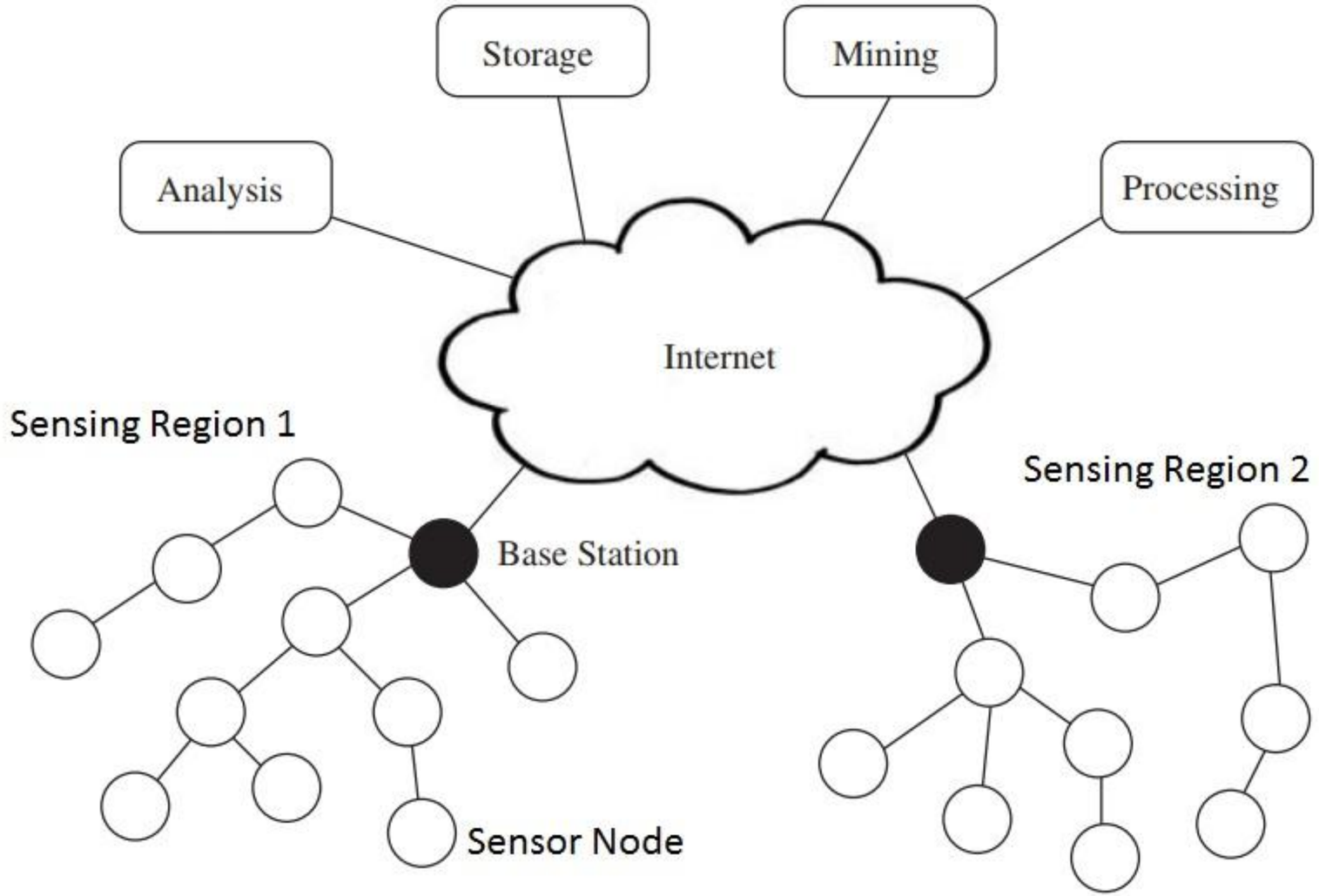
IoT Enabling Technologies - WSN

- Wireless sensor network (wsn) comprise of distributed devices with the sensor which are used to monitor the environmental and physical conditions.
- A WSN consists of a number of end nodes and routers and a coordinator.
- End nodes have several sensors attached to them. End node can also act as a routers.
- Routers are responsible for routing the data packet from end nodes to the coordinator.
- A sink or base station acts like an interface between users and the network.
- The coordinator node collect the data from all the notes coordinator also act as a Gateway that connects the WSN to the internet.
- WSNs can measure environmental conditions such as temperature, sound, pollution levels, humidity and wind.

IoT Enabling Technologies - WSN



IoT Enabling Technologies - WSN



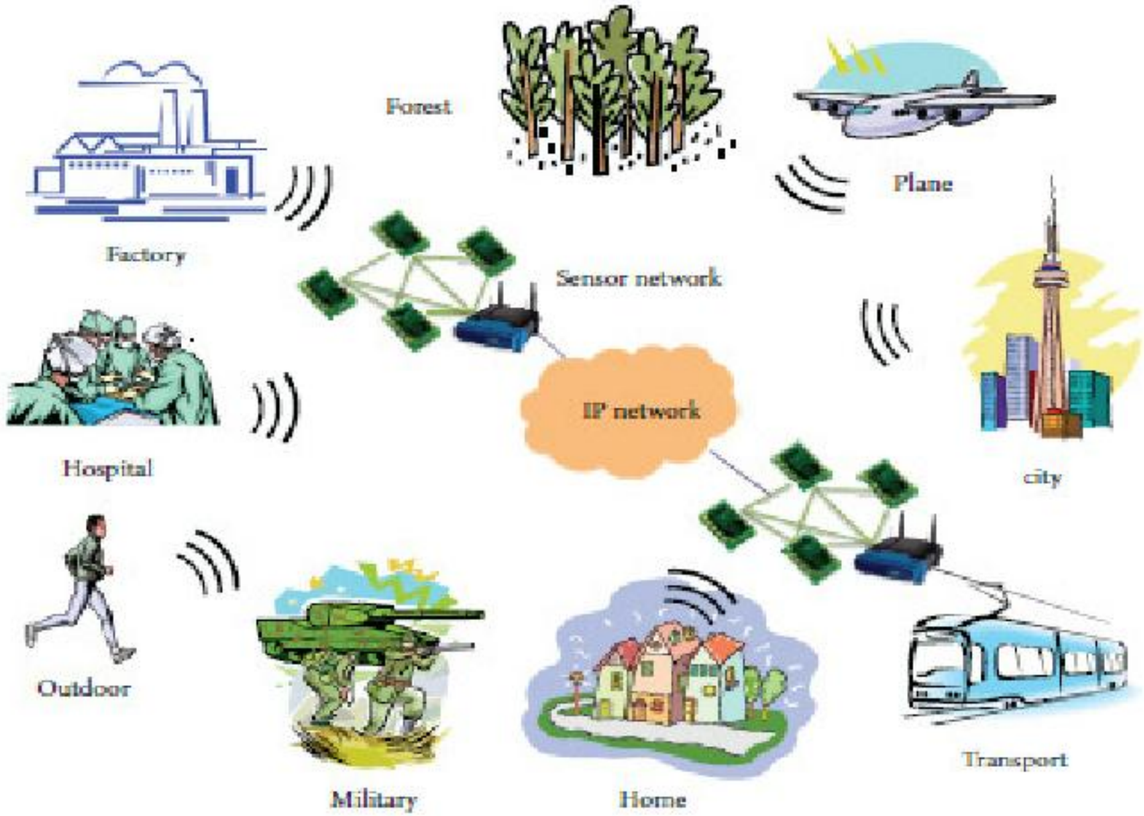
IoT Enabling Technologies - WSN

Constraints of WSN

- limited processing speed, storage capacity,

Applications of WSN

- Military applications
- Transportation (Traffic analysis)
- Health applications
- Environmental Applications
- Air pollution monitoring
- Forest fires detection
- Greenhouse monitoring
- Landslide detection
- Structural monitoring
- Industrial monitoring
- Agricultural sector



IoT Enabling Technologies – Cloud Computing

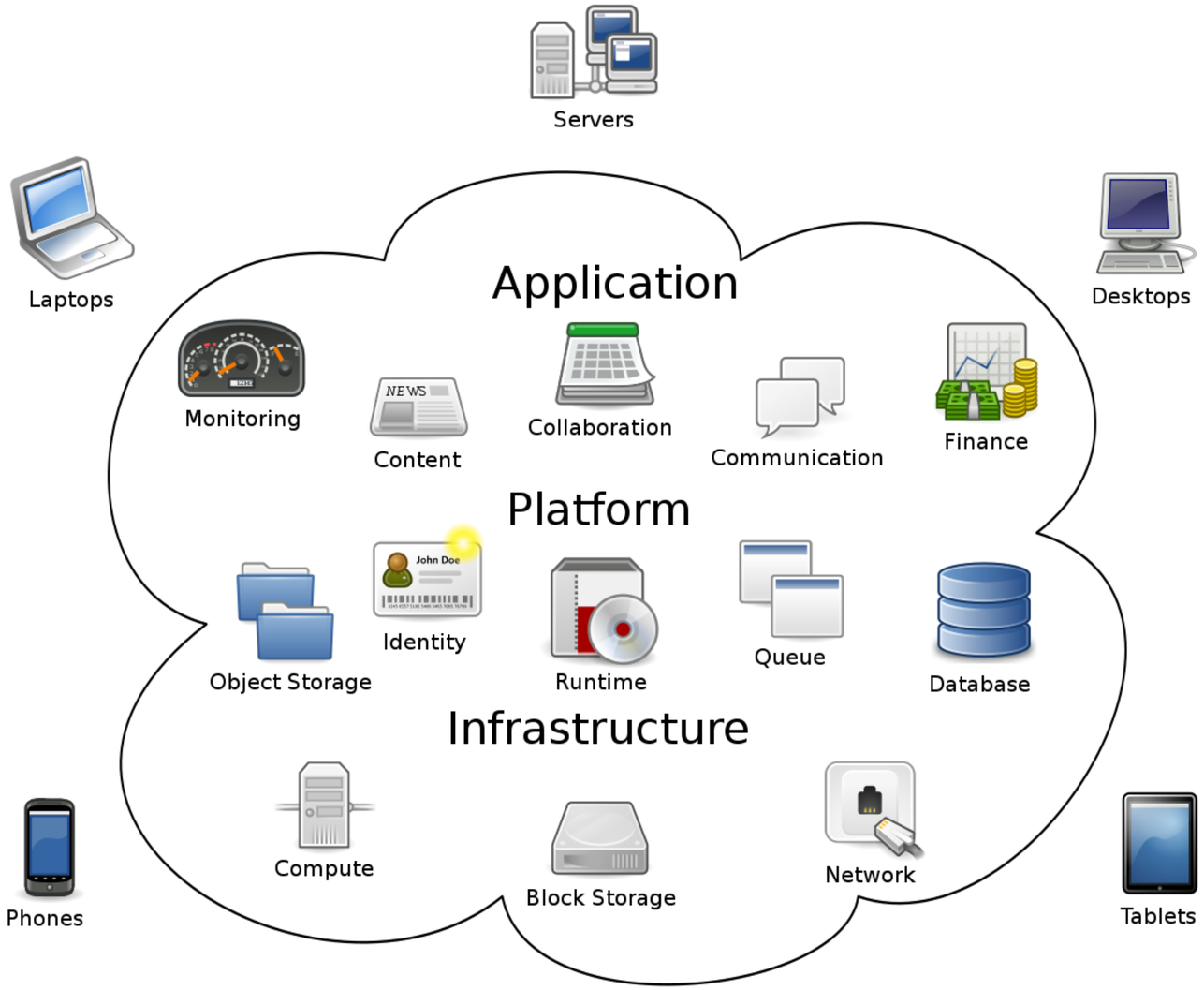
Cloud Computing is a transformative computing paradigm that involves delivering applications and services over the internet.

Cloud computing is on-demand access, via the internet, to computing resources—applications, servers (physical servers and virtual servers), data storage, development tools, networking capabilities, and more—hosted at a remote data center managed by a cloud services provider (or CSP).

The CSP makes these resources available for a monthly subscription fee or bills them according to usage.

Services offered by Cloud
IaaS – Infrastructure as a Service
PaaS – Platform as a Service
SaaS – Software as a Service

IoT Enabling Technologies – Cloud Computing



IoT Enabling Technologies – Cloud Computing

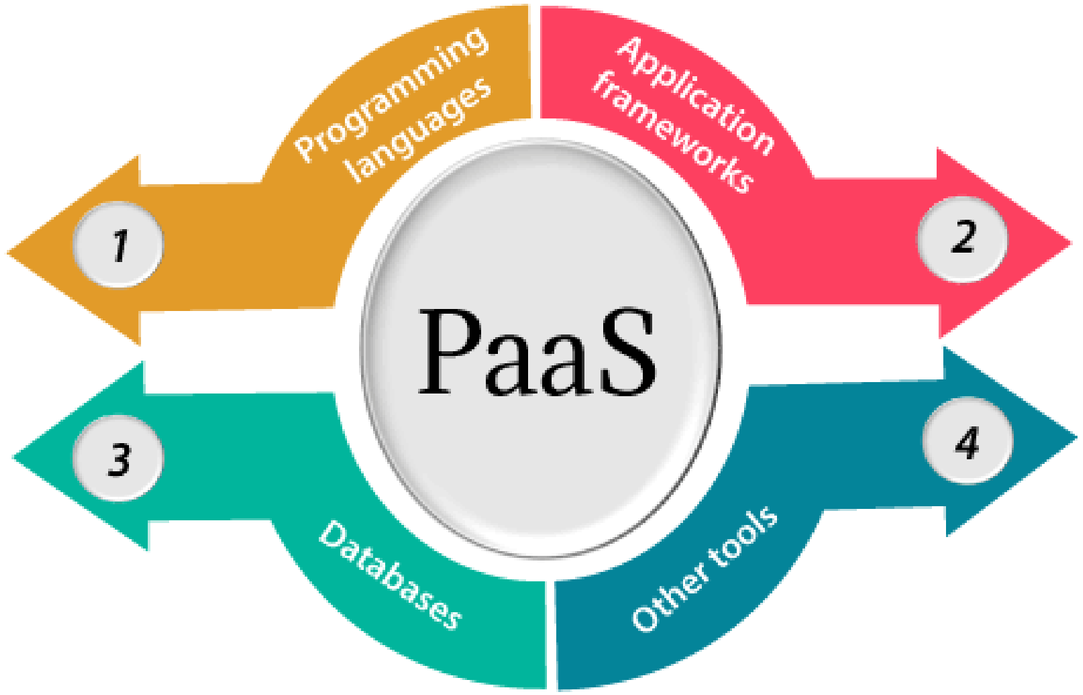
IaaS – Infrastructure as a Service
IaaS provides the user the ability provision computing and storage resources.

These resources are provided to the users as virtual machine instances and virtual storage .

IoT Enabling Technologies – Cloud Computing

PaaS – Platform as a Service

PaaS provides software developers with on-demand platform—hardware, complete software stack, infrastructure, and even development tools—for running, developing, and managing applications without the cost, complexity, and inflexibility of maintaining that platform on-premises.



IoT Enabling Technologies – Cloud Computing

SaaS - Software as a Service

SaaS—also known as cloud-based software or cloud applications—is application software that's hosted in the cloud and that you access and use via a web browser, a dedicated desktop client, or an API that integrates with your desktop or mobile operating system.

In most cases, SaaS users pay a monthly or annual subscription fee; some may offer 'pay-as-you-go' pricing based on your actual usage.

IoT Enabling Technologies – Cloud Computing

Types of Cloud

Public

Public cloud is a type of cloud computing in which a cloud service provider makes computing resources—anything from SaaS applications, to individual virtual machines (VMs), to bare metal computing hardware, to complete enterprise-grade infrastructures and development platforms—available to users over the public internet.

Private

Private cloud is a cloud environment in which all cloud infrastructure and computing resources are dedicated to, and accessible by, one customer only.

Hybrid

Hybrid cloud is just what it sounds like—a combination of public and private cloud environments. Specifically, and ideally, a hybrid cloud connects an organization's private cloud services and public clouds into a single, flexible infrastructure for running the organization’s applications and workloads.

THANK YOU