

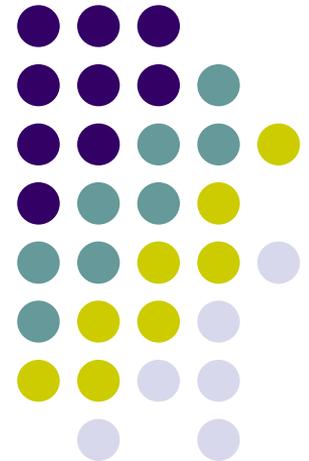
Cloud based E-Learning in Smart University

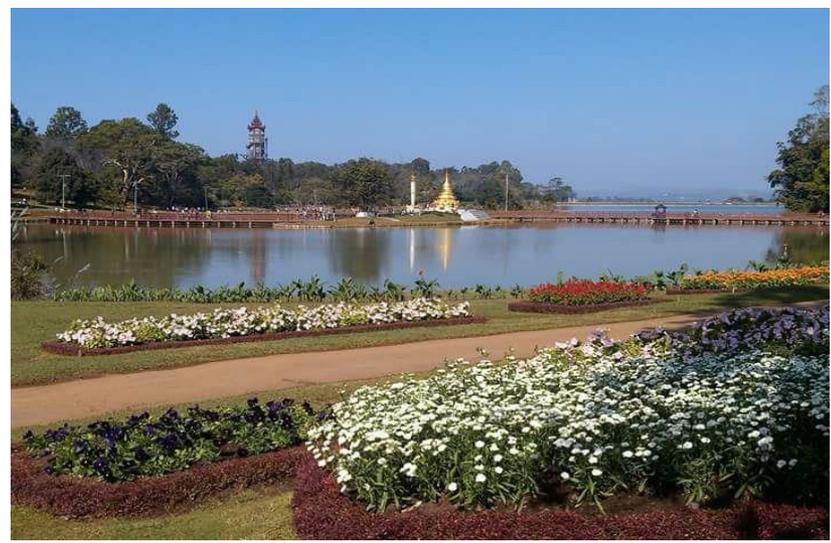
Thiri Haymar Kyaw

Associate Professor

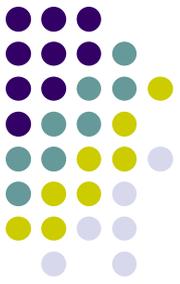
University of Technology (Yatanarpon Cyber City)

Myanmar.

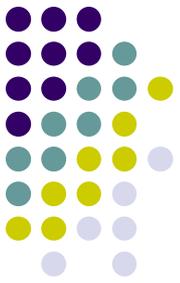




University of Technology (Yadanarpon Cyber City)



UT(YCC)



UT(YCC) composed of 4 faculties:

- Faculty of Information and Communication Technology**
- Faculty of Electronic Engineering**
- Faculty of Advanced Material Engineering**
- Faculty of Precision Engineering**



Abstract

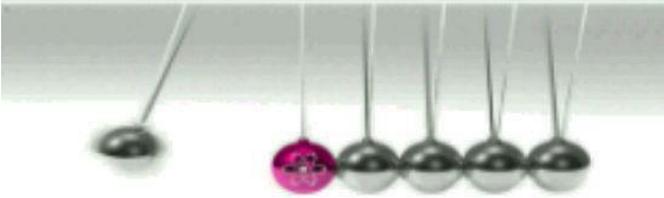
- Nowadays, many universities provide e-learning opportunities to the students for supporting their learning process.
- We propose cloud based teaching, learning and management environment for smart university.
- The teachers can upload their teaching materials, tutorials and assignments on the cloud.
- Students can access the course materials for regular class on the cloud and request the required software, application, server, simulation etc.
- Students can also learn their interested online courses on the cloud.
- E-learning content development team (Subject Matter Expert, Instructional Designer, Content Developer from different locations or different departments) can work altogether on the cloud.
- Admin staffs can access required applications or files on the cloud.



Introduction

- Cloud computing is a rapid growth area of information technology, supporting a new wave of applications able to run on a variety of hardware devices, while infrastructure or datacenter remains on the cloud.
- E-learning is one of the contribution from the increasing research in the areas of information technology to the world of education.
- The majority of educational services will be hosted in the cloud and the universities no longer have their own datacenters with expensive hardware, power bills, and computing resources that are rarely fully utilized.
- Software as a service (SaaS) allows for application hosting by a cloud service provider so that the application can be accessed through the web or a mobile portal (tablet or smart phone).
- SaaS replaces applications currently installed locally on workstations or personal computers.

E learning in UTCC



Engineering Physics and Its Applications

1.1 Light and Optics

START

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1.2 Wave under Reflection and Refraction

Index of Refraction

The speed of light in any medium is *less than its speed* in vacuum.

The index of refraction n of a medium,

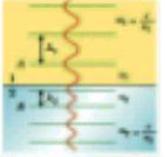
$$n = \frac{\text{speed of light in vacuum}}{\text{speed of light in medium}} = \frac{c}{v}$$
$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$


Figure 1.3 A wave travels from medium 1 to medium 2

Progress bar: 11:31 / 11:31

1.1 Light and Optics

Learning Objectives

UNIVERSITY OF TECHNOLOGY
YATAPAPON CYBER CITY

Subject Matter Expert

Objectives

- To know the nature of light
- To understand the concepts of interference, diffraction and polarization

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1.1 Light and Optics

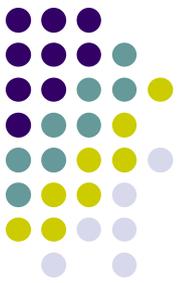
Quiz

Please check your current knowledge about the lesson. Choose the correct answer. Press "Submit" button to check your answer.

Q1. Which of the following causes the fringes in a two-slit interference pattern to move farther apart?

- A) decreasing the wavelength of the light
- B) decreasing the screen distance L
- C) decreasing the slit spacing d
- D) increasing the entire apparatus in water

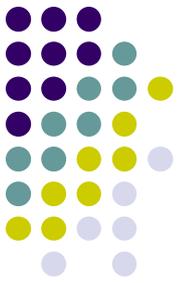
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Teaching and Learning on Cloud

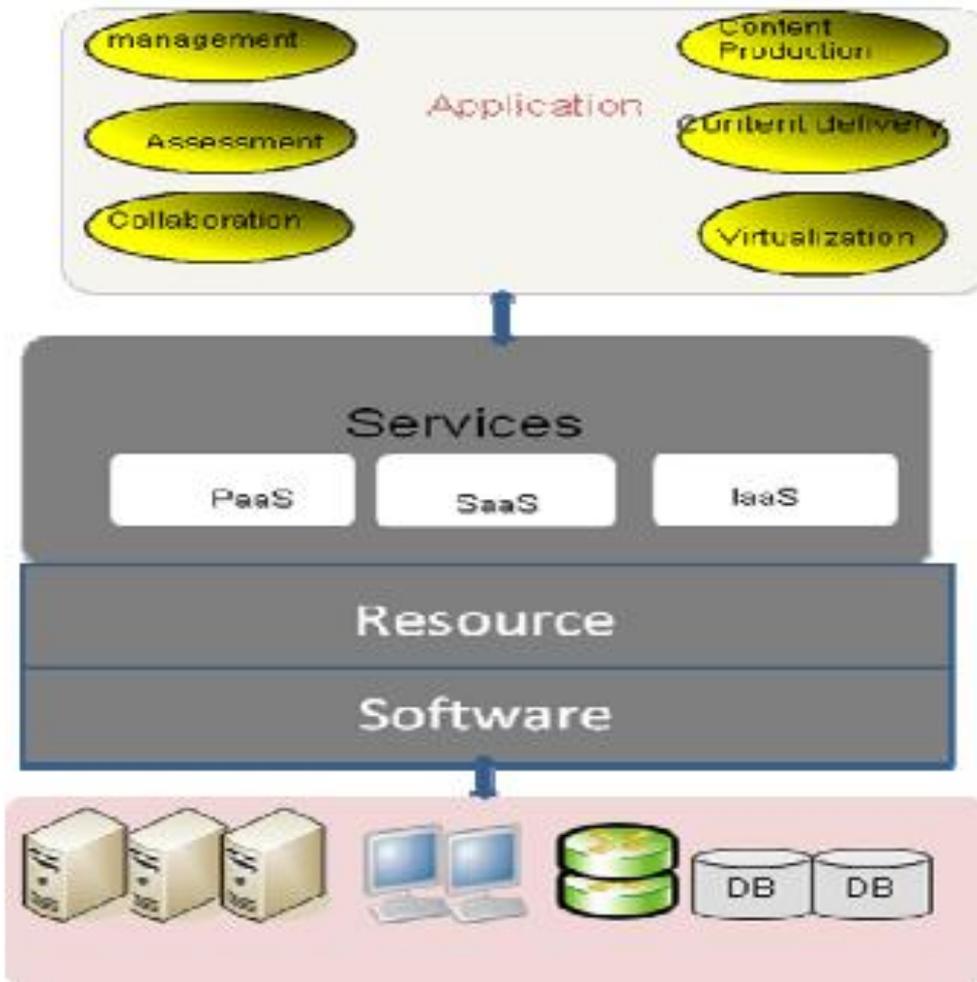
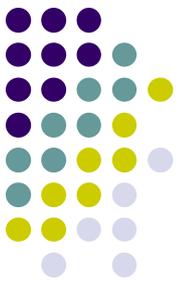
- In our smart educational environment, teachers and students can take the advantages of cloud computing by employing ubiquitous devices (laptop, mobile phone, tablet etc.) and technologies in the classroom.
- Each student, faculty, research scholars have unique ID and password to login to the University's private cloud.
- The teachers can upload the learning materials, tutorials and assignments on the cloud.
- The students can access the documents that the teachers uploaded. They can also request the delivered software, developing platform, and computing resources in the cloud if they have practical works such as programming, database management, network simulation, etc.
- The applications that required practicing for some courses need not be installed on the students' laptop, PC or mobile phones. We will focus on the courses offered by the Information Science department.

E-Learning on Cloud



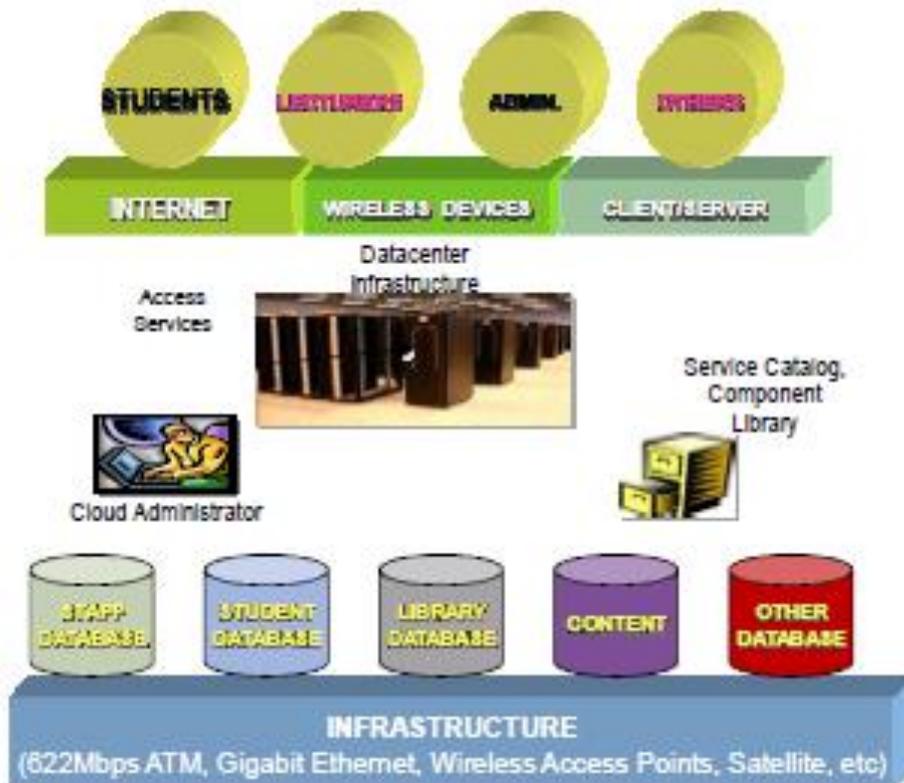
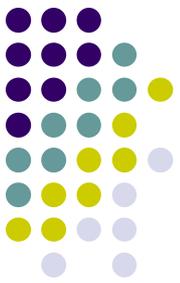
- A major advantage of cloud-based technology for the e-learning is the reduction in operating costs.
- After adapting cloud based e-learning, the instructors can upload the online courses, assignments and exam questions on the cloud.
- The students can register their interested e-learning courses and they can learn with their laptops, tablets or mobile phones.
- They can also submit the discussions, questions, and assignment answers and take assessments on the cloud.
- E-learning based on cloud computing optimizes educational collaboration, efficiency, and instructor-student interaction.

E-learning Cloud Architecture



An E-learning System Architecture based on Cloud Computing
By Md. Anwar Hossain Masud, Xiaodi Huang

Infrastructure Layer



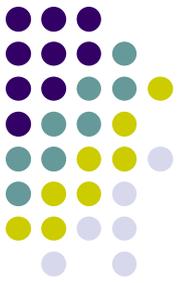
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E-Learning on Cloud

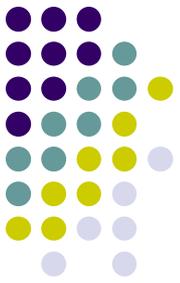
- E-learning courses are developed by the content development team and developers, designers and subject matter experts work in different departments or different locations.
- Developing an e-Learning course with a team that works different hours or in different locations can sometimes get problematic.
- Cloud-based learning is one way to make this process more manageable.
- Online e-Learning software or cloud-based authoring tool allows the developer to create e-Learning contents anywhere, anytime or any platform (Mac or PC).
- The team can also share to use some limited software for developing contents on the cloud.

Online Meeting



- We intend to propose the services or platforms such as online meeting or video conferencing or live lectures.
- The professors or students can discuss with others in overseas universities.

Administration on Cloud



- Moreover, the administration software is placed on the cloud and the administration staff can access the applications on the cloud.
- E-library is placed also on the cloud.
- The teachers and students can request the reference books and other electronic documents or they can browse the book list and reserve the hardcopy books on the university's library.

Conclusion



- In the future development of smart university is possible since cloud based e-learning is an effective approach for formal and informal learning, in which motivated students are interested now for obtaining high-quality knowledge, not only a diploma of higher education.