PHINMA EDUCATION
MAKING LIVES BETTER THROUGH EDUCATION

Platform Technologies
Student Activity Sheet # 05

Name: _____ Class number: _____
Section: _____ Schedule: _____ Date: _____

Lesson title: **Platforms for Cloud Computing** Lesson Objectives: • To further understand Cloud Computing and know it uses. • To know the advantages and disadvantages of Cloud Computing • To be familiarize to the main types of Cloud Computing. • To know the advantages and disadvantages of the main types of Cloud Computing	Materials: SAS References: *https://erikseanblog.wordpress.com/2017/08/21/online-platforms-for-ict-content-development/ * https://en.wikipedia.org/ *https://www.zdnet.com/article/cloudy-concepts-iaas-paas-saas-maas-caas-xaas/ * https://www.comptia.org/ *https://www.sam-solutions.com/blog/iaas-vs-paas-vs-saas-whats-the-difference/

A. LESSON PREVIEW/REVIEW

Productivity Tip:
"Starve your distraction and feed your focus." --Unknown .

Introduction (2 mins)

Good day students! Before we proceed to our main lesson let us discuss the brief history of Cloud Computing. Amazon Web Services (AWS) was the pioneer of cloud computing as we know it. According to Jeff Bezos, the mission of AWS was to provide the "application developers a set of dependable tools and a reliable infrastructure that they could build products on top of." Microsoft (Azure) Google (Google Cloud), IBM (IBM Smart Cloud) and Oracle (Oracle Cloud) quickly followed suit. Today, the range of cloud computing services is quite broad.

Activity 1: What I Know Chart, part 1 (3 mins)

The table below shows some questions that are relevant to our Lessons. Please go through Column 2 and write in column 1 your answers on what you initially know about our topic. For the meantime, leave column 3 and get back to it once you reach activity 4.

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What I Know	Questions:	What I Learned
	1. What is Cloud Computing?	
	2. What are the types of Cloud Computing?	
	3. What are the advantages and disadvantages of Cloud Computing?	

B. MAIN LESSON

Activity 2: Content Notes

{ You may take down notes or highlight some important keys or make some outline of what and how you understood the topic}

Cloud Computing is the delivery of computing services—servers, storage, databases, networking, software, analytics and more—over the Internet ("the cloud"). Companies offering these computing services are called cloud providers and typically charge for cloud computing services based on usage, like how you are billed for water or electricity at home. You are probably using cloud computing right now, even if you do not realize it. If you use an online service to send email, edit documents, watch movies or TV, listen to music, play games, or store pictures and other files, it is likely that cloud computing is making it all possible behind the scenes. The first cloud computing services are barely a decade old, but already a variety of organizations—from tiny startups to global corporations, government agencies to non-profits—are embracing the technology for all sorts of reasons.

Uses of cloud computing:

- Create new apps and services.
- Store, back up and recover data.
- Host websites and blogs
- Stream audio and video
- Deliver software on demand.
- Analyze data for patterns and make predictions.

Advantages of Cloud Computing:

- No need to install.
- Saves hard disk space.
- Easy access to your files
- Saves money
- No need to update.

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- Minimum system requirements
- Back-up and data recovery are relatively easier.

Disadvantages of Cloud Computing:

- Can be hampered down by slow internet speed.
- May require compatible software.
- You do not own the software.
- Security risks
- More prone to hacking
- Limited control over the infrastructure

Three main types of Cloud Computing:

IaaS - Infrastructure as a Service

- is a type of cloud computing service that offers essential compute, storage, and networking resources on demand, on a pay-as-you-go basis.
- provides compute, memory, storage, networking, and related software, such as operating systems and databases, as a cloud service to replace traditional on-premises data center infrastructure.
- delivers a computing infrastructure in a virtualized environment. These infrastructure resources include virtual compute and storage resources, bandwidth, network connections and more. IaaS can scale up and down as demand changes and provide redundancy configurations to ensure high availability. The bigger cloud providers offer a high degree of software automation.

Advantages of IaaS:

- *Pay for What You Use:* Fees are computed via usage-based metrics.
- *Reduce Capital Expenditures:* IaaS is typically a monthly operational expense.
- *Dynamically Scale:* Rapidly add capacity in peak times and scale down as needed.
- *Increase Security:* IaaS providers invest heavily in security technology and expertise.
- *Future-Proof:* Access to state-of-the-art data center, hardware, and operating systems
- *Self-Service Provisioning:* Access via simple internet connection
- *Reallocate IT Resources:* Free up IT staff for higher value projects.
- *Reduce Downtime:* IaaS enables instant recovery from outages.
- *Boost Speed:* Developers can begin projects once IaaS machines are provisioned.
- *Enable Innovation*: Add new capabilities and leverage APIs.
- *Level the Playing Field:* SMBs can compete with much larger firms.

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Disadvantages of IaaS:

- Data security issues due to multitenant architecture
- Vendor outages make customers unable to access their data for a while.
- The need for team training to learn how to manage new infrastructure.

SaaS - Software as a Service

- is a method of software delivery that allows data to be accessed from any device with an internet connection and a web browser. In this web-based model, software vendors host and maintain the servers, databases, and the code that makes up an application.
- platforms make software available to users over the internet, usually for a monthly subscription fee.

Advantages of SaaS:

- **Accessibility:** Ability to run via an internet browser 24/7 from any device
- **Operational Management:** No installation, equipment updates or traditional licensing management.
- **Cost Effective:** No upfront hardware costs and flexible payment methods such as pay-as-you-go models.
- **Scalability:** Easily scale a solution to accommodate changing needs
- **Data Storage:** Data is routinely saved in the cloud.
- **Analytics:** Access to data reporting and intelligence tools
- **Increase Security:** SaaS providers invest heavily in security technology and expertise.

Disadvantages of SaaS:

- Loss of control
- Limited range of solutions
- Connectivity is a must.

PaaS - Platform as a Service

- [or Application Platform as a Service (aPaaS) or platform-based service] is a category of cloud computing services that allows customers to provision, instantiate, run, and manage a modular bundle comprising a computing platform and one or more applications, without the complexity of building and maintaining the infrastructure typically associated with developing and launching the application(s); and to allow developers to create, develop, and package such software bundles.

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- provides the capability for consumers to have applications deployed without the burden and cost of buying and managing the hardware and software. In other words, these are either consumer created or acquired web applications or services that are entirely accessible from the Internet.

Advantages of PaaS:

- *Cost Effective:* No need to purchase hardware or pay expenses during downtime.
- *Time Savings:* No need to spend time setting up/maintaining the core stack.
- *Speed to Market:* Speed up the creation of apps.
- *Future-Proof:* Access to state-of-the-art data center, hardware, and operating systems
- *Increase Security:* PaaS providers invest heavily in security technology and expertise.
- *Dynamically Scale:* Rapidly add capacity in peak times and scale down as needed.
- *Custom Solutions:* Operational tools in place so developers can create custom software.
- *Flexibility:* Allows employees to log in and work on applications from anywhere

Disadvantages of PaaS:

- Data security issues
- Compatibility of existing infrastructure (not every element can be cloud-enabled)
- Dependency on vendor's speed, reliability, and support

Activity 3: Skill-building Activities (40pts)

	IaaS	PaaS	SaaS
Who uses it?			
What users get			

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Providers controls			
User controls			

"Check your answers using the *Key to Corrections* found at the end of this SAS. Write your score on your paper."

Activity 4: What I Know Chart, part 2 (2 mins)

This section serves as a review and summary of what you have learned from todays' session. Try to express how your knowledge has changed by reviewing the questions in the What I Know Chart from Activity 1 and write your answers to the questions based on what you know in the third column of the chart.

Activity 5: Check for Understanding (5 mins)
Give at least two examples of:

1. Iaas -
2. Paas -
3. SaaS -

A. LESSON WRAP-UP

Activity 6: Thinking about Learning (5 mins)
a) Below is a table that will serves as your work tracker for you to visualize and help you to be on track on how much work you have accomplished and how much work are left to do. Shade the day that corresponds to your accomplished activity

You are done with the session! Let's track your progress

Period 1									Period 2								Period 3								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

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b) Think about what you have learned by filling up your "My Learning Tracker". The students will write the learning targets, their scores, learning experience for the session and deliberately plan for the next session.}

Date	Learning Target/Topic	Scores	Action Plan
What's the date today?	*What module# did you do? What were the learning targets? What activities did you do?*	*What were your scores in the activities?*	*What contributed to the quality of your performance today? What will you do next session to maintain your performance or improve it?*

FAQs

Q: How did cloud computing get its name?

A: The phrase originates from the **cloud** symbol used by flow charts and diagrams to symbolize the Internet.

KEY TO CORRECTIONS

	IaaS	PaaS	SaaS
Who uses it?	System administrators	Developers	End use
What users get	Virtual data center to store information and create platforms for services and app development, testing and deployment.	Virtual platform and tools to create, test and deploy apps and services	Web software and apps to complete business tasks
Providers controls	Servers Storage Virtualization	Servers Storage Networking Virtualization OS Middleware Runtime	Servers Storage Networking OS Middleware Runtime Applications Data
User controls	OS Middleware Runtime Applications Data	Applications Data	-