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# Pemanfaatan Cloud Computing untuk MatKul JarKom

— Muhammad Cordiaz S.Si., M.Kom —

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# Perkenalan



## **Nama:**

Muhammad Cordiaz, S.Si., M.Kom

## **Contact:**

dosen01676@unpam.ac.id

@cordiaz

# Materi



<https://github.com/cordiaz/webinar-ri40>



# Revolusi Industri 4.0 Dampaknya Bagi Pendidikan

# Revolusi Industri 4.0

- Revolusi Industri 4.0
- Era Industri 4.0
- Industri 4.0
- RI 4.0
- 4IR





# Teknologi Kunci Revolusi Industri 4.0

- CYBER-PHYSICAL SYSTEM
- INTERNET OF THINGS
- ARTIFICIAL INTELLIGENCE
  - Big data
  - Cloud computing
  - Nanotechnology
  - Wearable
  - Blockchain
  - Gene sequencing
  - Virtual reality
  - 3D printing



# Milestones Revolusi Industri

## Revolusi Industri Pertama



**1790-an**

Mekanisasi alat  
produksi, tenaga uap,  
dan daya air

## Revolusi Industri Kedua



**1890-an**

Produksi massal,  
perakitan, dan  
tenaga listrik

## Revolusi Industri Ketiga



**1960-an**

Elektronik, sistem  
teknologi informasi,  
dan otomatisasi

## Revolusi Industri Keempat

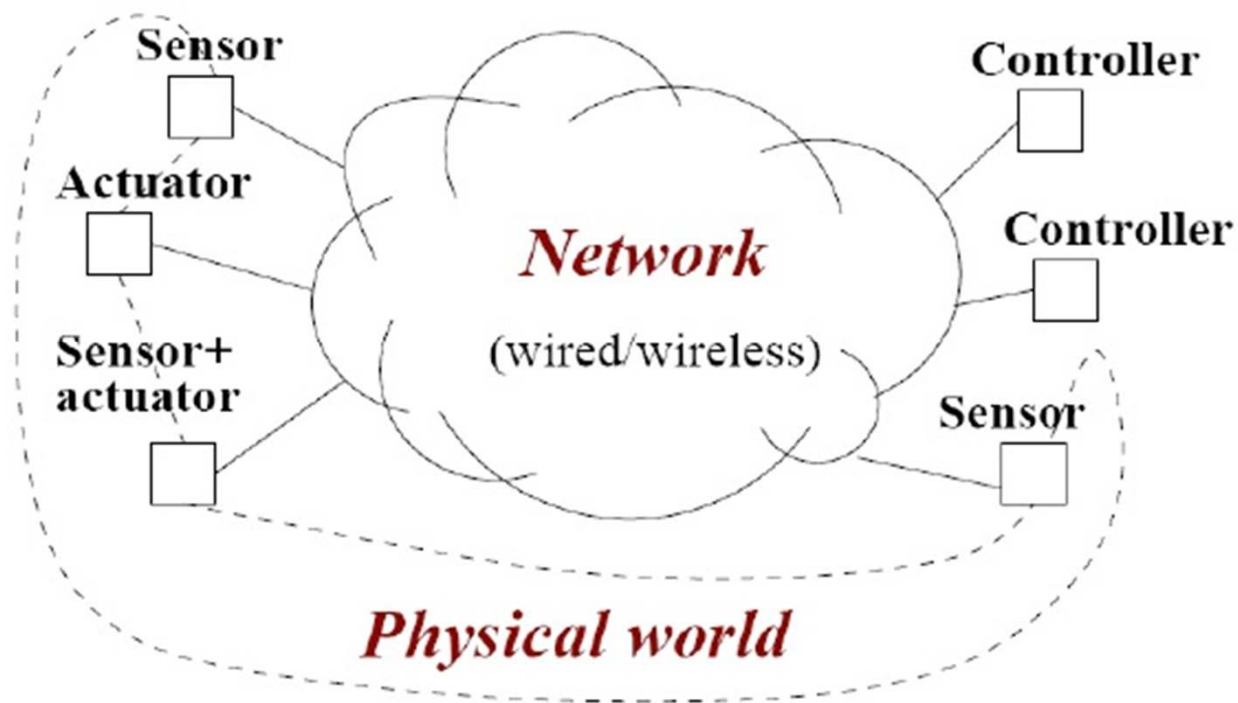


**Hari ini**

Sistem siber-fisik



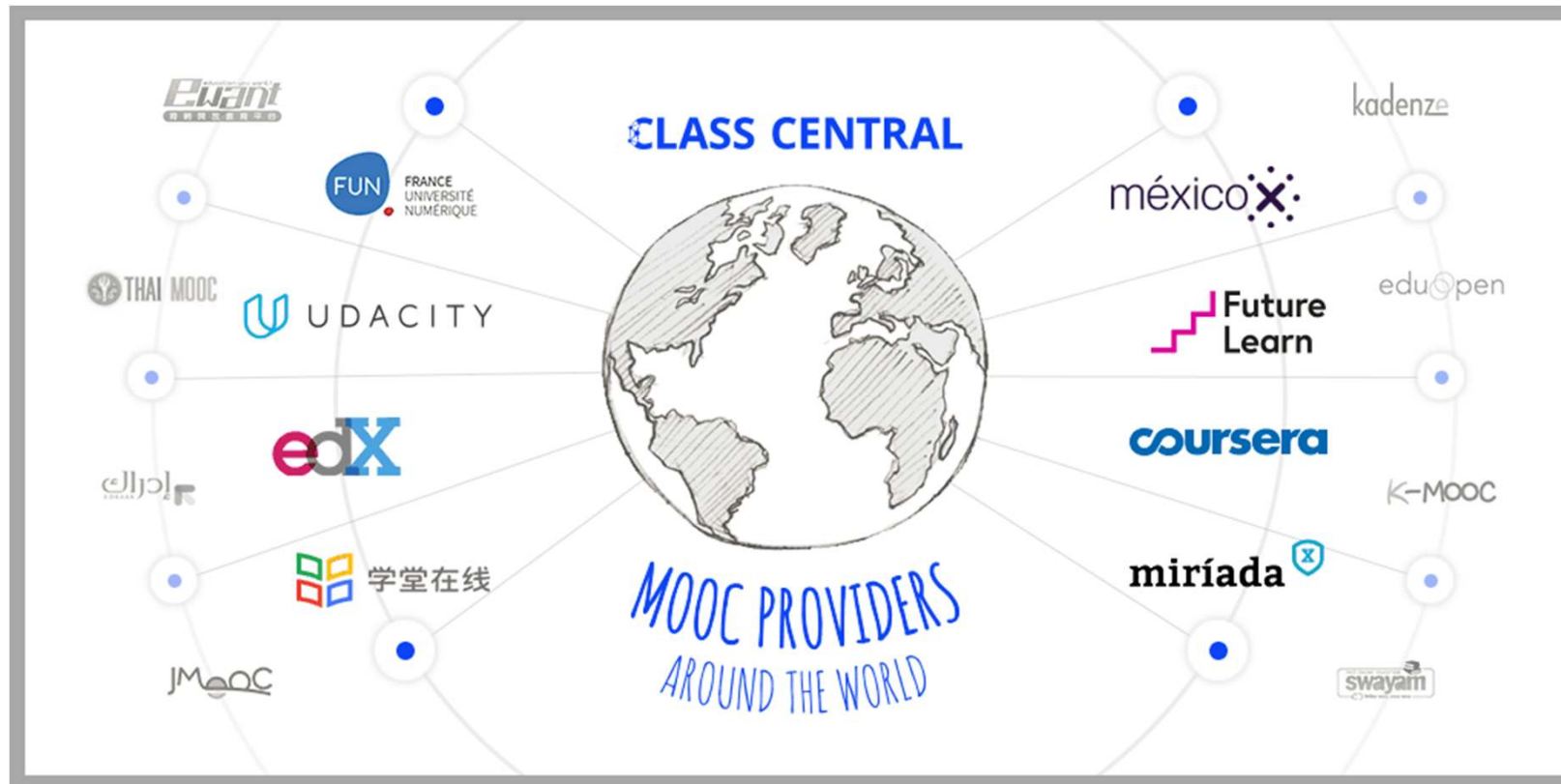
# Sekilas Cyber-physical system







# Bagaimana dengan Dunia Pendidikan?



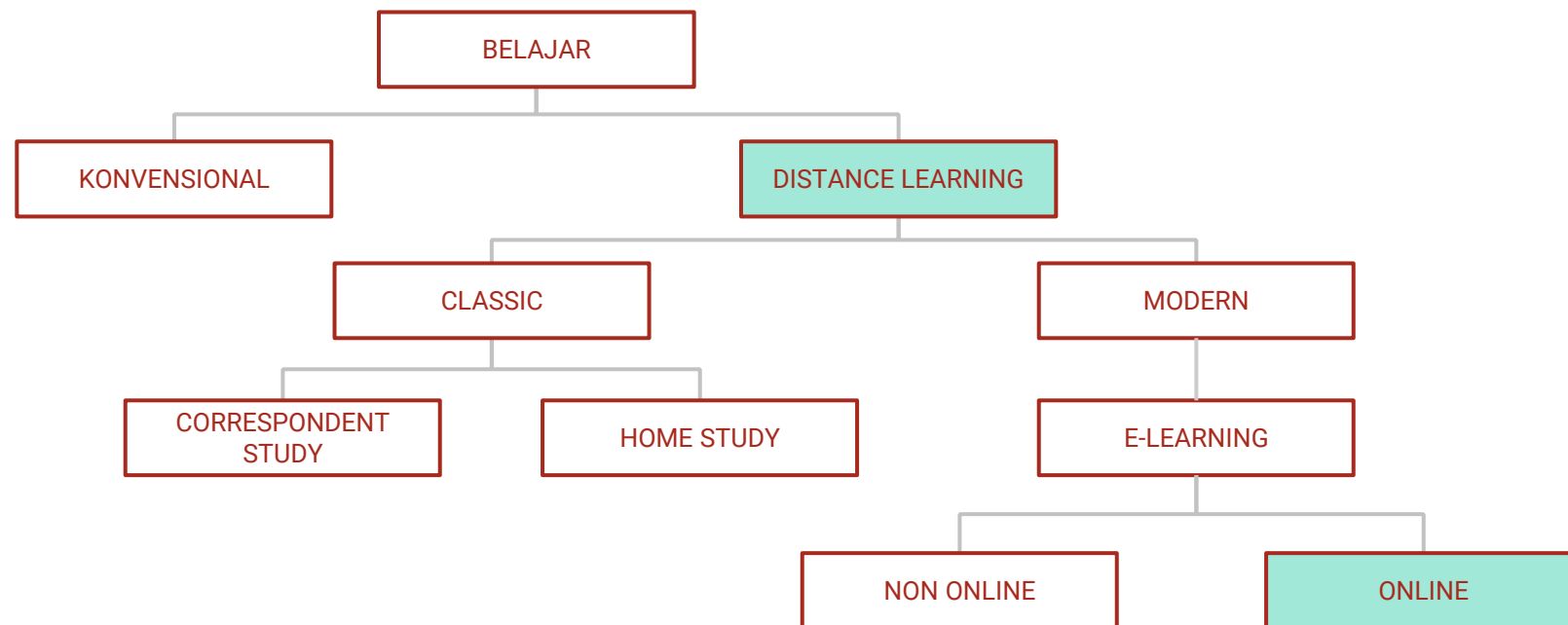


# E-learning

- E-learning merupakan segala bentuk aktivitas pembelajaran yang memanfaatkan media elektronik untuk belajar (Gilbert & Jones, 2001 dan Michael, 2013)
- E-learning sebagai penggunaan teknologi internet dan komputer berjaringan untuk membantu proses belajar manusia (Harley, 2001; Rosenberg, 2001 dan Kamarga, 2002)



# Cakupan e-learning





MINISTRY OF EDUCATION AND CULTURE  
DIRECTORATE GENERAL OF HIGHER EDUCATION  
HIGHER EDUCATION PROJECT  
ADB LOAN No. 1253 - INO



*Certificate of Appreciation*

This certifies that :

*Muhammad Cordiaz*

has been actively involved in

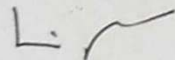
*Distance Learning Training*

*Participant*

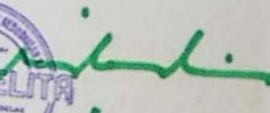
as

this event, held at *LPJW ADB Loan No. 1253 - INO General Soedirman University*

during the period *June - July 1999*

  
Frederik M. Poyk  
Training Coordinator



  
Widadi W. Widayat  
Manager



Sertifikat  
Distance  
Learning  
Depdikbud  
1999

# Karakteristik Pembelajaran Konvensional





# Beberapa Prinsip e-learning

Menurut Littlejohn & Pegler (2007) penerapan pembelajaran e-learning memiliki beberapa prinsip:

1. Personalisasi
2. Keamanan
3. Belajar mandiri
4. Tracking
5. Aplikasi pihak ketiga

# Karakteristik e-learning



PEMBELAJARAN KONVENSIONAL	E-LEARNING
<ul style="list-style-type: none"><li>❖ Terbatas</li><li>❖ Real time</li><li>❖ Kontrol pada pendidik</li><li>❖ Linear</li><li>❖ Sumber sekunder</li><li>❖ Statis</li></ul>	<ul style="list-style-type: none"><li>❖ Tidak terbatas</li><li>❖ Fleksibel</li><li>❖ Kontrol pada peserta didik</li><li>❖ Multidimensional</li><li>❖ Sumber primer</li><li>❖ Dinamis</li></ul>





# Sumber Referensi MatKul Jaringan Komputer



<https://www.coursera.org/>



**coursera** Explore ▾ What do you want to learn? 🔍 For Enterprise For Students 🔔 Muhammad Cordiaz ▾

Browse > Computer Science > Computer Security and Networks

Offered By **YONSEI UNIVERSITY**

## Introduction to TCP/IP

★★★★★ 4.6 1,121 ratings • 347 reviews

Jong-Moon Chung

**Enroll for Free**  
Starts Oct 20

Financial aid available

38,493 already enrolled

Included with **coursera plus** Unlimited access to 3,000+ courses

About Instructors Syllabus Reviews Enroll

### Introduction to TCP/IP

- ☐ Purchase Course · \$49 USD
- ☐ Commit to earning a Certificate—it's a trusted, shareable way to showcase your new skills.
- ☒ Full Course, No Certificate  
You will still have access to all course materials for this course.

**Continue**

### About this Course

105,330 recent views

You use the Internet through your PC (Personal Computer), laptop, tablet, smartpad, and smartphone every day in everything you do. Through your own PC/laptop, you can easily learn everything about the Internet, and that is what this course is focused on. In this course 'Introduction to TCP/IP,' you will learn the operational functions of Internet technologies (which include IPv4, IPv6, TCP, UDP, addressing, routing, domain names, etc.) and your PC/laptop's security and gateway Internet setup and basic principles. In addition, through a simple Wireshark experiment, you will learn how to analyze network traffic and troubleshoot network problems.

#### Learner Career Outcomes

- 69% started a new career after completing these courses
- 41% got a tangible career benefit from this course


<https://www.coursera.org/learn/tcpip>

<https://www.coursera.org/>




**coursera** Explore ▾ What do you want to learn? 🔍 For Enterprise For Students 🔔 Muhammad Cordiaz ▾

Browse > Information Technology > Networking

Offered By 

## Intel® Network Academy - Network Transformation 101

★★★★★ 4.5 347 ratings • 110 reviews

 Intel Network Academy

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Starts Oct 20

Financial aid available

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- ☒ Full Course, No Certificate  
You will still have access to all course materials for this course.

**Continue**

**About this Course**  
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Welcome to the Intel® Network Academy – a comprehensive training program on network transformation. In this program, we will be covering the topics of software defined infrastructure (SDI) network functions virtualization (NFV), software-defined networking (SDN) and beyond.

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<https://www.coursera.org/learn/network-transformation-101>

# <https://www.khanacademy.org/>



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Muhammad Cordiaz

Assign to Jaringan Komputer - MC01 ▾ No students ▾ doing Different questions ▾ due by Oct 21st, 11:59 PM ▾ Save Assign

Computing > Computers and the Internet > The Internet > Connecting networks

Computer networks

Physical network connections

Practice: Computer networks

Bit rate, bandwidth, and latency

Practice: Bit rate and bandwidth

Next lesson  
Addressing the Internet

## Bit rate and bandwidth

[Google Classroom](#) [Facebook](#) [Twitter](#) [Email](#)

In 2015, the nation of Burundi had an average bandwidth per Internet connection of 11.24 kb/s. In 2016, their average bandwidth was 6.91 kb/s.

Which statement is true based on those statistics?

Choose 1 answer:

☐ A

Internet connections in Burundi in 2016 were able to transfer more bits per second than connections in Burundi in 2015.

☐ B

Internet connections in Burundi in 2016 had to wait longer for packets to arrive than connections in Burundi in 2015.

☒ C

Internet connections in Burundi in 2015 were able to transfer more bits per second than connections in Burundi in 2016.

☐ D

Internet connections in Burundi in 2015 had to wait longer for data to arrive than connections in Burundi in 2016.

<https://www.khanacademy.org/computing/computers-and-internet/xcae6f4a7ff015e7d:the-internet>

# https://www.khanacademy.org/



Computing > Computers and the Internet > The Internet > Connecting networks

- Computer networks
- Physical network connections
- Practice: Computer networks
- Bit rate, bandwidth, and latency
- Practice: Bit rate and bandwidth

Next lesson  
Addressing the Internet

## Bit rate and bandwidth

[Google Classroom](#) [Facebook](#) [Twitter](#) [Email](#)

In 2015, the nation of Burundi had an average bandwidth per Internet connection of 11.24 kb/s. In 2016, their average bandwidth was 6.91 kb/s.

Which statement is true based on those statistics?

Choose 1 answer:

INCORRECT

Internet connections in Burundi in 2016 were able to transfer more bits per second than connections in Burundi in 2015.

The bandwidth of a computer network is the amount of data that can be sent in a period of time. The bandwidth was lower in 2016 than in 2015, so Internet connections in 2016 transferred less bits per second than connections in 2015. Bandwidth typically increases in a country over time, but Burundi experienced political turmoil that affected technological progress.

INCORRECT

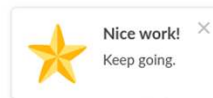
Internet connections in Burundi in 2016 had to wait longer for packets to arrive than connections in Burundi in 2015.

The bandwidth of a computer network measures the amount of data that can be sent over a network in a period of time. Bandwidth does not measure how long it takes for data to arrive (that concept is instead known as latency). A connection can have low bandwidth and high latency, or vice versa, so we don't know anything about the latency based on the bandwidth.

CORRECT (SELECTED)

Internet connections in Burundi in 2015 were able to transfer more bits per second than connections in Burundi in 2016.

The bandwidth of a computer network is the amount of data that can be sent in a period of time. Since the bandwidth was higher in 2015 than in 2016, that means that connections could transfer more data per second then.



Do 4 problems

Next question



# <https://lms.onnocenter.or.id/moodle/>

← → ↻ [lms.onnocenter.or.id/moodle/course/view.php?id=32](https://lms.onnocenter.or.id/moodle/course/view.php?id=32) ☆ Incognito  
★ Bookmarks 2020 Bookmark Other bookmarks

Anda login sebagai **Muhammad Cordiaz** (Keluar)

## Jaringan Komputer

Depan > Kursus Yang Saya Ikuti > Teknologi Informasi > JarKom

### Navigasi

Depan

- Rumah saya
- Halaman situs
- Profil saya
- Kursus saat ini
  - JarKom**
    - Peserta
    - Badges
    - General
    - Pendahuluan / Konsep TCP/IP / Sejarah Internet
    - Command Line & Wireshark
    - Simulator Jaringan
    - Perangkat Keras Jaringan & Data Link Layer
    - Perangkat WiFi / Wireless Internet
    - Network Layer IPv4
    - Transport Layer
    - Domain Name System & Pengaturan Internet
    - Routing & NAT
    - Ujian Tengah Semester (UTS)
    - Web / Content Management System
    - e-mail / SMTP / POP3 / IMAP / Webmail
    - VoIP / Internet Telepon
    - Streaming Multimedia

### General

#### UNTUK MEMPEROLEH NILAI A

- Pengajar akan lebih suka kalau anda MENULIS BUKU untuk A, daripada mengerjakan UJIAN.
- Pilih salah satu topik dari Kuliah ini.
- Halaman minimal 150 halaman ukuran A4
- Nilai 100 di semua KUIS, UTS, UAS (di set manual).
- Diskusikan dengan pengajar via email onno@indo.net.id untuk di bimbing menulis buku-nya.
- YOUTUBE: [https://www.youtube.com/watch?v=DFh\\_Q4kaUWs](https://www.youtube.com/watch?v=DFh_Q4kaUWs)

#### UJIAN

- Bagi yang tidak berani menulis buku, silahkan mengerjakan ujian.
- Kerjakan semua kuis, jika belum memperoleh nilai 100, ulangi sampai dapat 100.
- Kerjakan UTS 100 soal, terus menerus, sampai waktu dosen harus memasukan nilai.
- Kerjakan UAS 100 soal, terus menerus, sampai waktu dosen harus memasukan nilai.
- Semua KUIS / UTS / UAS bisa di kerjakan kapan saja, dimana saja, selama kuliah berlangsung sampai dosen harus memasukan nilai.

[News forum](#)

### Pendahuluan / Konsep TCP/IP / Sejarah Internet

- [Konsep Dasar TCP/IP](#)
- [Sejarah Internet Indonesia](#)
- [Sejarah Internet Dunia \(id\)](#)
- [Sejarah Internet Dunia \(en\)](#)
- [YOUTUBE: Sejarah Internet](#)
- [YOUTUBE: Arsitektur Jaringan Internet TCP/IP](#)
- [KUIS KONSEP TCP/IP](#)

### Command Line & Wireshark

Kuliah Sistem Operasi akan membahas lebih dalam tentang berbagai Tip mengoperasikan Sistem Operasi (khususnya Server).

- [Indeks Perintah Dasar Linux](#)
- [Perintah Dasar Linux](#)
- [Konfigurasi interface di komputer](#)

### Cari forum

[Maju](#)

[Pencarian Lanjutan](#)

### Berita terbaru

(No news has been posted yet)

### eLearning Rakyat

Situs e-Learning untuk #internetRakyat. Bagi anda yang belum mempunyai account, silahkan klik "Create new Account" di bagian login.

### Upcoming events

Tidak ada agenda mendatang

[Pergi ke kalender...](#)

[Acara baru...](#)

### Aktifitas lalu


Aktivitas sejak Minggu, 25 Oktober 2020, 11:20

[laporan lengkap aktifitas terbaru...](#)

Tidak ada yang baru sejak Anda terakhir login

<https://lms.onnocenter.or.id/moodle/course/view.php?id=32>





## Lembaga Pengembangan Pendidikan dan Pembelajaran (LP3)

### Online Learning

UNIVERSITAS PAMULANG

Unpam menggunakan model pembelajaran *blended learning*, di mana 40% pertemuan menggunakan *online learning*, sedangkan 60% menggunakan pembelajaran konvensional. *online learning* di Unpam bukan hanya memberikan materi ajar secara gratis melalui online, namun terdapat proses pembelajaran yang disusun terstruktur dalam rangka menuju capaian pembelajaran.

## Selamat Datang di e-Learning Reg. C Universitas Pamulang

[Home](#)

"Mari Berkontribusi Secara Berkualitas"

Kalender Online Gasal 2020/2021

Online users

394 online users (last 5 minutes)

<https://e-learningc.unpam.ac.id/>



# Teori Pengalamatan dalam Jaringan





# Kelas IP Address

w . x . y . z = IP address

Class A	1 – 127	(Network 127 is reserved for loopback and internal testing)		
		Leading bit pattern	0	00000000.00000000.00000000.00000000 Network . Host . Host . Host
Class B	128 – 191	Leading bit pattern	10	10000000.00000000.00000000.00000000 Network . Network . Host . Host
Class C	192 – 223	Leading bit pattern	110	11000000.00000000.00000000.00000000 Network . Network . Network . Host





# Private IP Address

Class A	10.0.0.0 to 10.255.255.255
Class B	172.16.0.0 to 172.31.255.255
Class C	192.168.0.0 to 192.168.255.255

# Default Subnet Mask

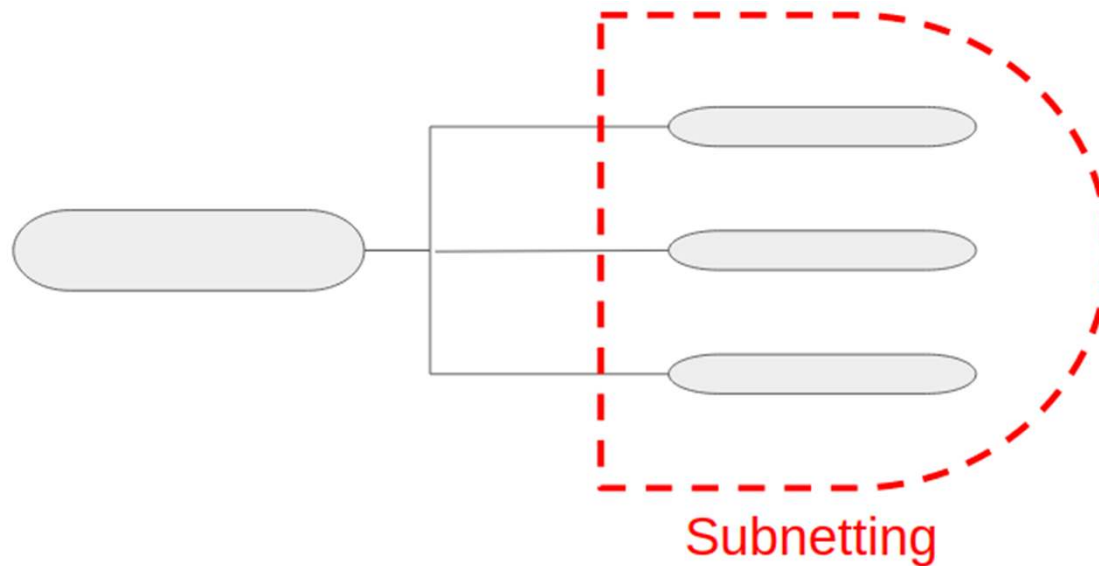


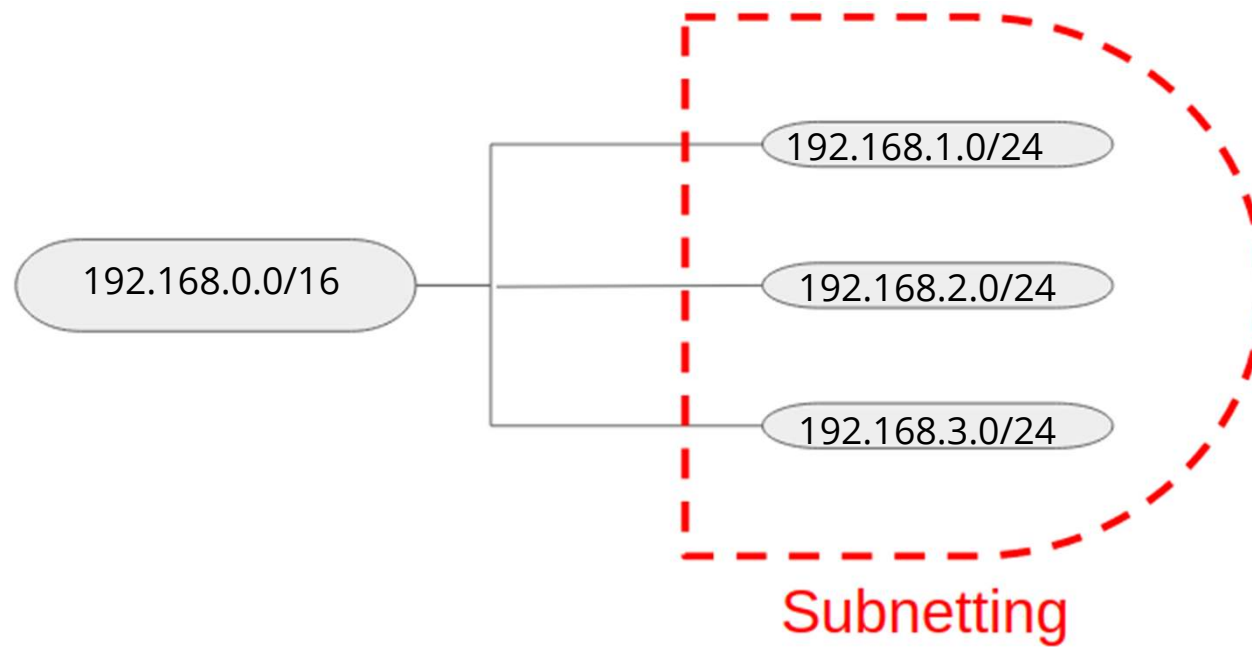
Class A	255.0.0.0
Class B	255.255.0.0
Class C	255.255.255.0



# Sub-network IP Address

Subnetting adalah membagi jaringan yang lebih besar menjadi jaringan yang lebih kecil.









# Sekilas Cloud Computing



# Cloud Computing

Cloud computing: **on-demand** delivery of **IT resources dan applications** via the **internet**, with **pay-as-you-go** pricing.

# Gartner Magic Quadrant

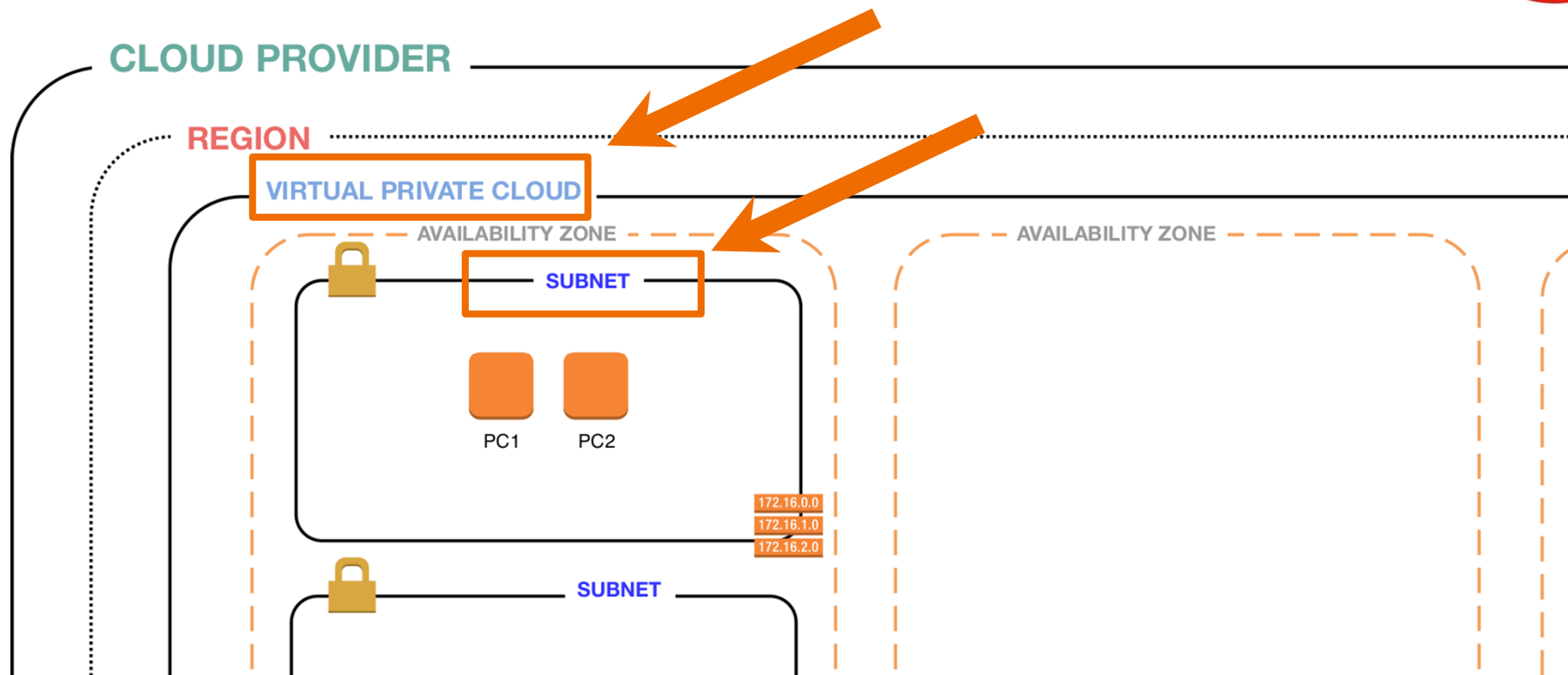
Figure 1. Magic Quadrant for Cloud Infrastructure and Platform Services







# Diagram Cloud secara Umum





# Cara Menggunakan Cloud Computing

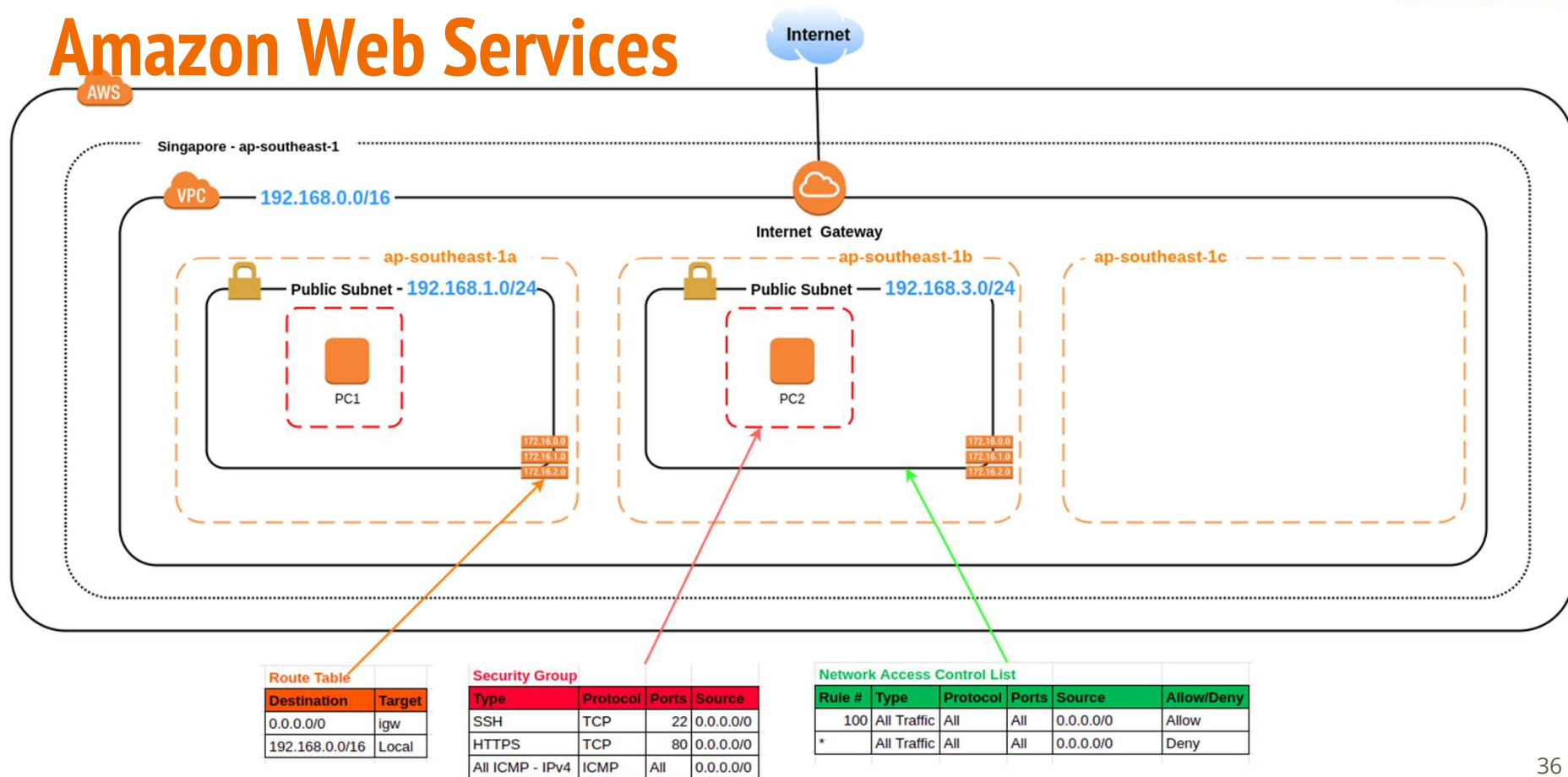
1. Login
2. Masuk ke web console
3. Gunakan layanan yang diperlukan



# Praktek Pengalamatan dalam Jaringan



# Amazon Web Services





# Networking di AWS

- VPC
- Subnet
- Availability zone
- Route table
- Security Group
- Network Access Control List
- Internet gateway



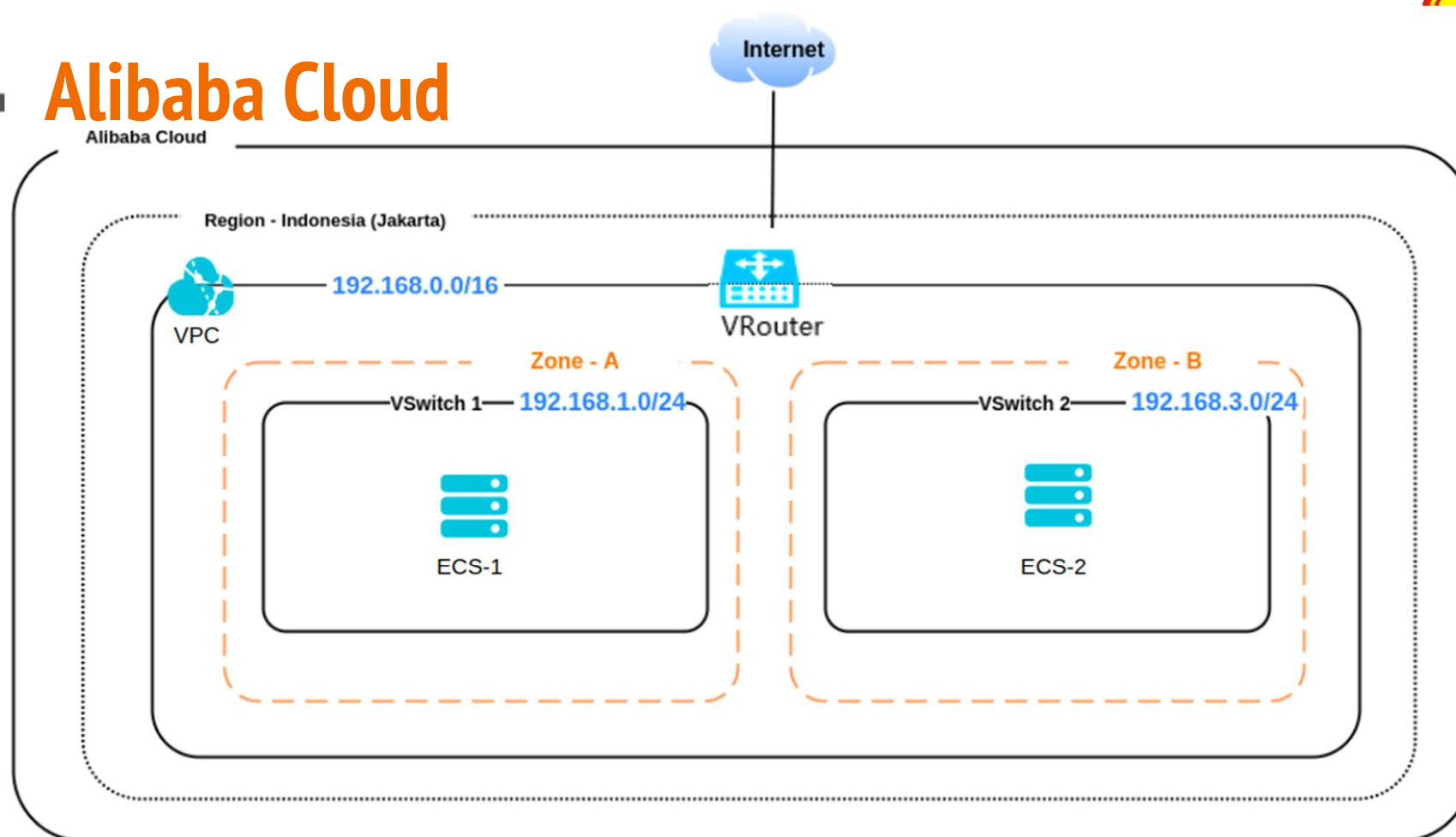
## Free Access AWS - Khusus Webinar

<https://github.com/cordiaz/webinar-ri40>

Web console: <https://webinar-unpam.signin.aws.amazon.com/console>



# Alibaba Cloud





# Networking di Alibaba Cloud

- Virtual Private Cloud
- VSwitch
- Zone
- Routing Table
- Security Group



# Free Access Alibaba Cloud - Khusus Webinar



<https://github.com/cordiaz/webinar-ri40>

Web console: <https://signin-intl.aliyun.com/webinarunpam.onaliyun.com/login.htm>



## Kesimpulan dan Saran

- Tugas pendidik adalah mengantarkan peserta didik ke masa depan, bukan dengan pengalaman-pengalaman masa lalu pendidik
- Peserta didik secara mandiri dapat mencari informasi, menentukan apa yang akan dipelajari, menentukan jadwal pembelajaran sendiri
- Peserta didik tidak harus mendaftarkan pada satu sumber belajar saja, dunia serba terbuka, kolaboratif dan tanpa batas
- Sikap mental / mindset pendidik dan peserta didik yang harus terbentuk berkembang, kegairahan mencari hal-hal baru, suka tantangan, tidak takut gagal, berani mencoba dan belajar terus, tidak takut kritik apapun penilaian orang, meyakini pentingnya usaha meskipun belum tentu berhasil

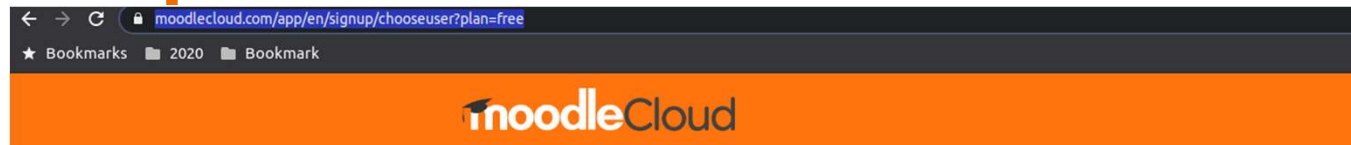


# Sumber:

- Savitri, Astrid. Peluang dan tantangan Pendidikan jarak jauh di era Revolusi Industri 4.0. Yogyakarta, Penerbit Genesis, 2019
- Kasali, Rhenald. The Great Shifting. Jakarta, Penerbit Gramedia Pustaka Utama, 2018
- Wahyuningsih, Dian dan Makmur, Rahmat. E-learning: Teori dan Aplikasi. Bandung. Penerbit Informatika, 2017
- Sofana, Iwan. Cisco CCNP dan Jaringan Komputer, Bandung, Penerbit Informatika, 2012
- Wijaya, Hendra, Belajar Sendiri Cisco Router, Jakarta. Elexmedia Komputindo, 2002
- <https://www.cordiaz.com/simco/> dan <https://www.cordiaz.com/simco2/>
- <https://roadmap.sh>
- <https://aws.training>
- <https://edu.alicloud.com>
- [AWS Named as a Cloud Leader for the 10th Consecutive Year in Gartner's Infrastructure & Platform Services Magic Quadrant](#)
- <https://aws.amazon.com/id/education/awseducate/>
- <https://edu.alibabacloud.com/certification/university-cloudnative>
- <https://aws.amazon.com/blogs/apn/amazon-vpc-for-on-premises-network-engineers-part-one/>
- <https://moodlecloud.com/app/en/signup/chooseuser?plan=free>
- <https://forbil.org/id/article/159/cyber-physical-system-remote-control-era-revolusi-industri-40>
- <http://fkip.ums.ac.id/wp-content/uploads/sites/43/2018/12/Revolusi-Industri-4.0-dan-Dampaknya-terhadap-Pendidikan-di-Indonesia-Dr.-Sukartono.doc>



# <https://moodlecloud.com/> - MoodleCloud



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**Terima kasih**

