

# **Pengantar Teknologi Informasi**

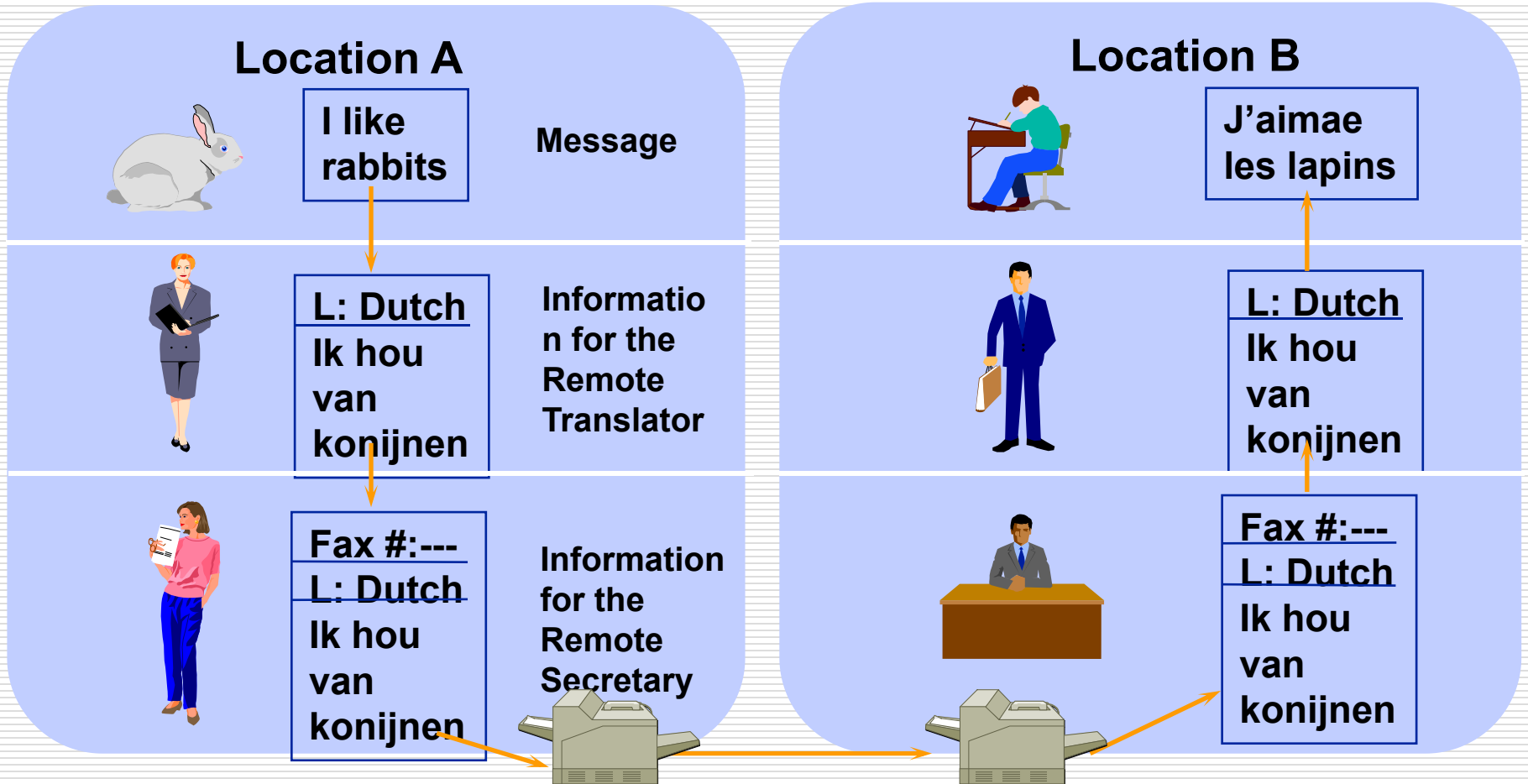
## **Networking**

# Agenda

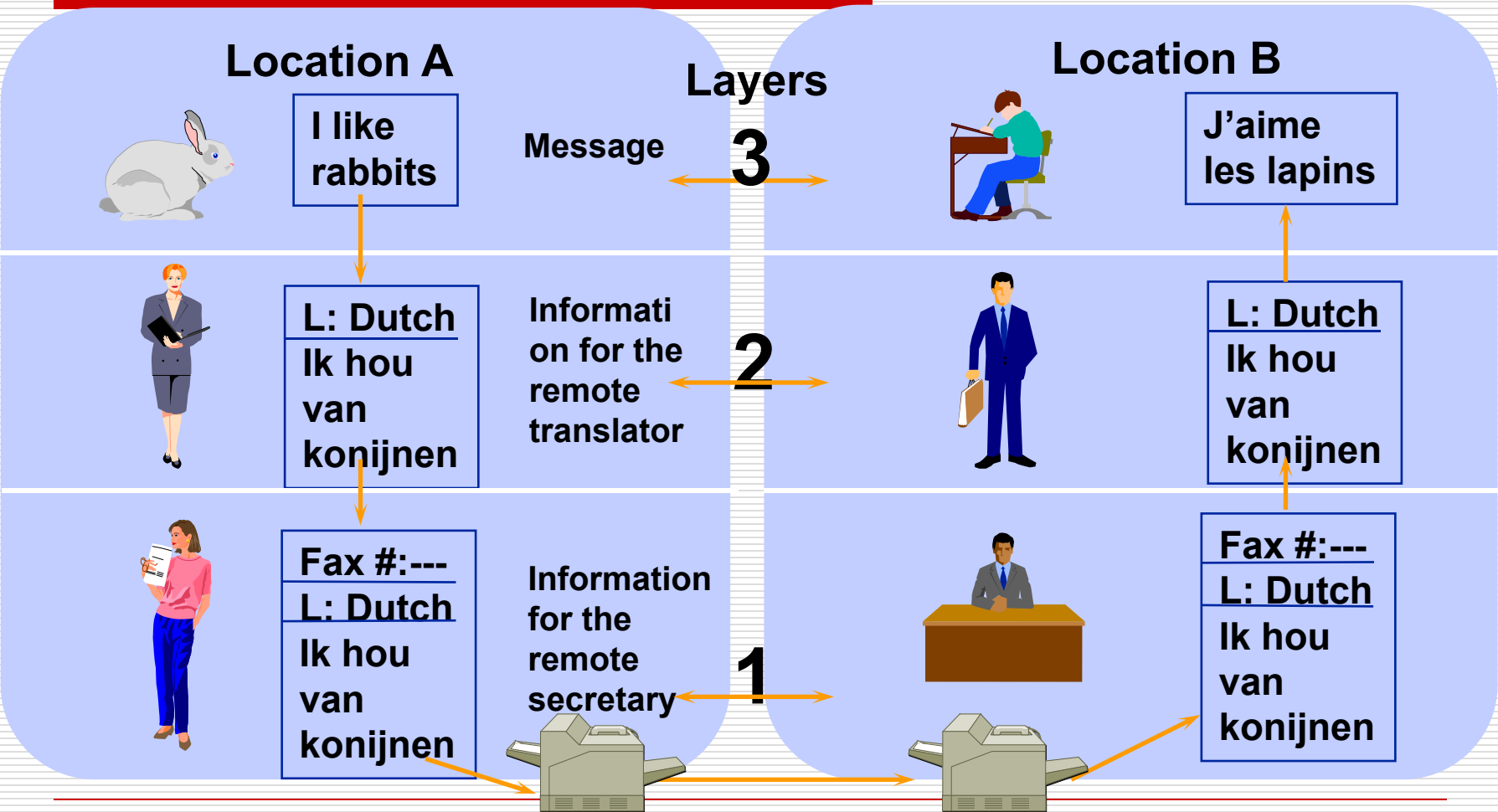
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- Pengenalan Protokol Jaringan
  - Pengenalan Wireless Communication
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# Mengapa ada Protokol Jaringan?

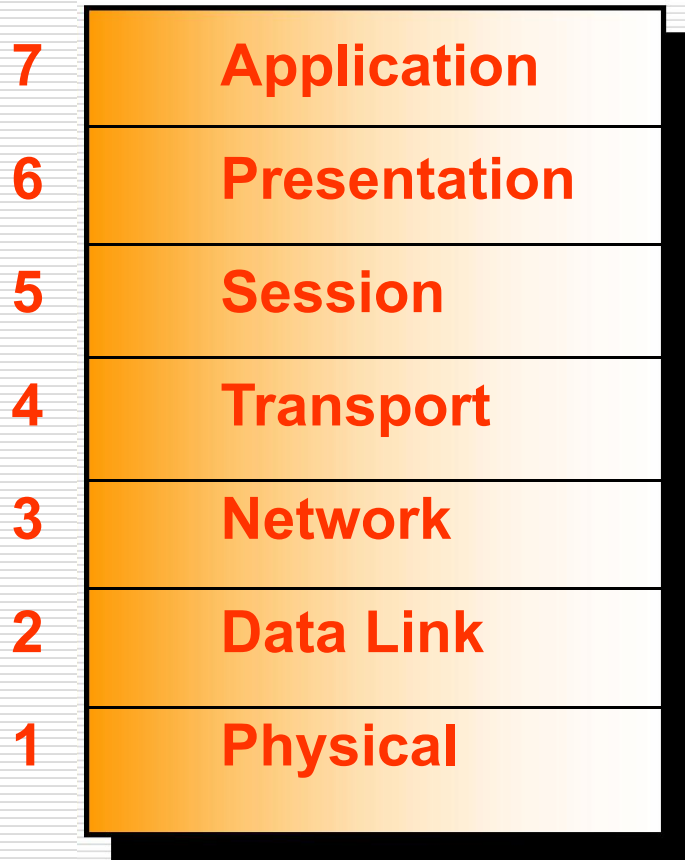


# Mengapa ada Protokol Jaringan?



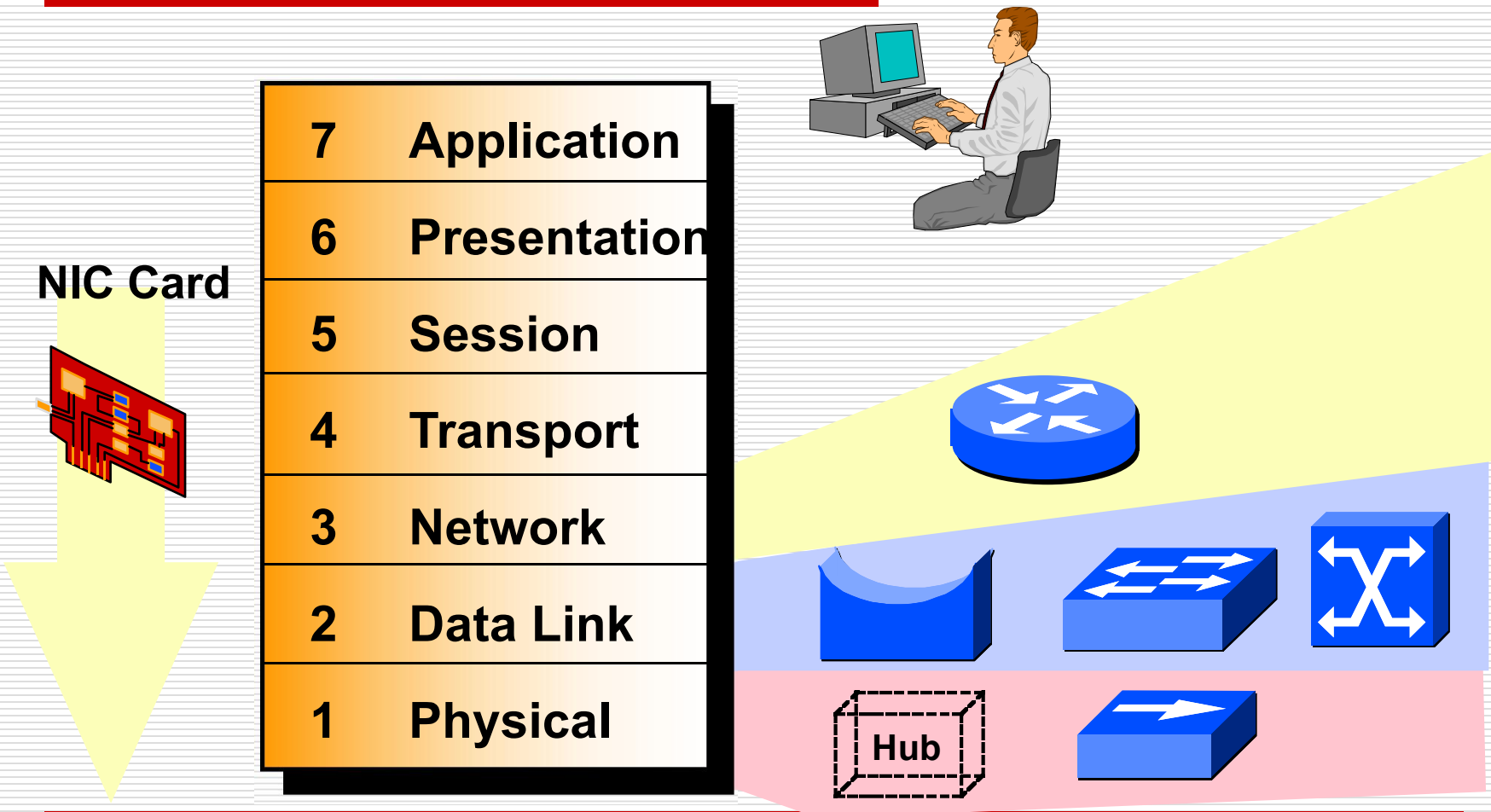
# Model Layer Pada Jaringan

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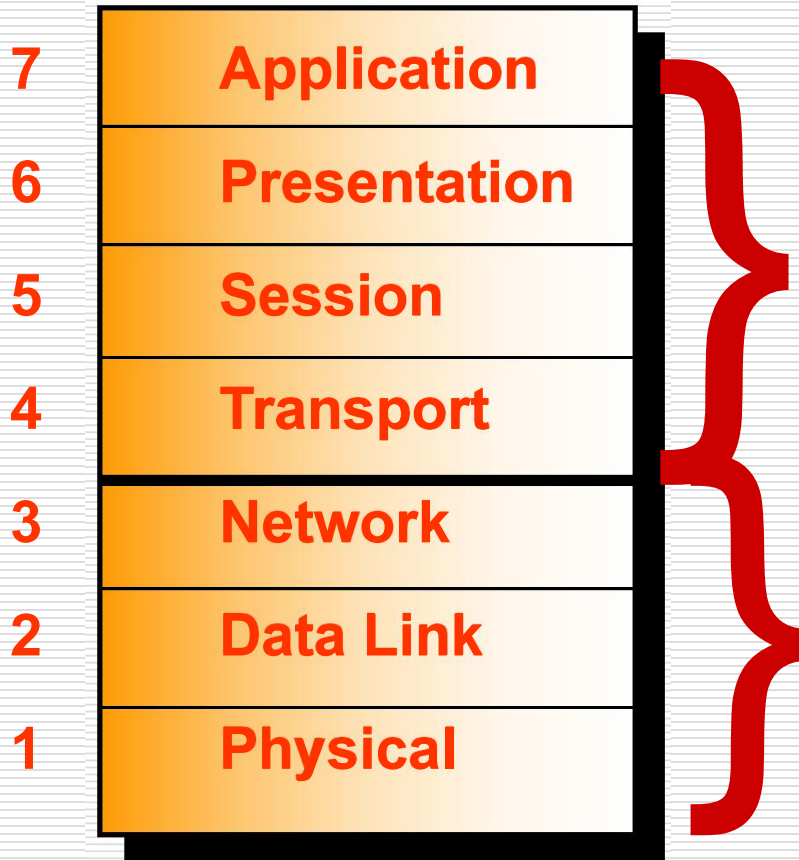
- **Mengurangi kompleksitas (satu masalah besar diubah dalam 7 bagian kecil )**
  - **Menstandarkan antarmuka**
  - **Memudahkan belajar mengajar**
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# Fungsi Device pada Layer



# Layer Host dan Media

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## Host layers:

Menyediakan data yang akurat yang dikirim antar komputer

## Media layers:

Mengontrol pengiriman pesan secara fisik antar jaringan

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# Fungsi Setiap Layer

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**Application**



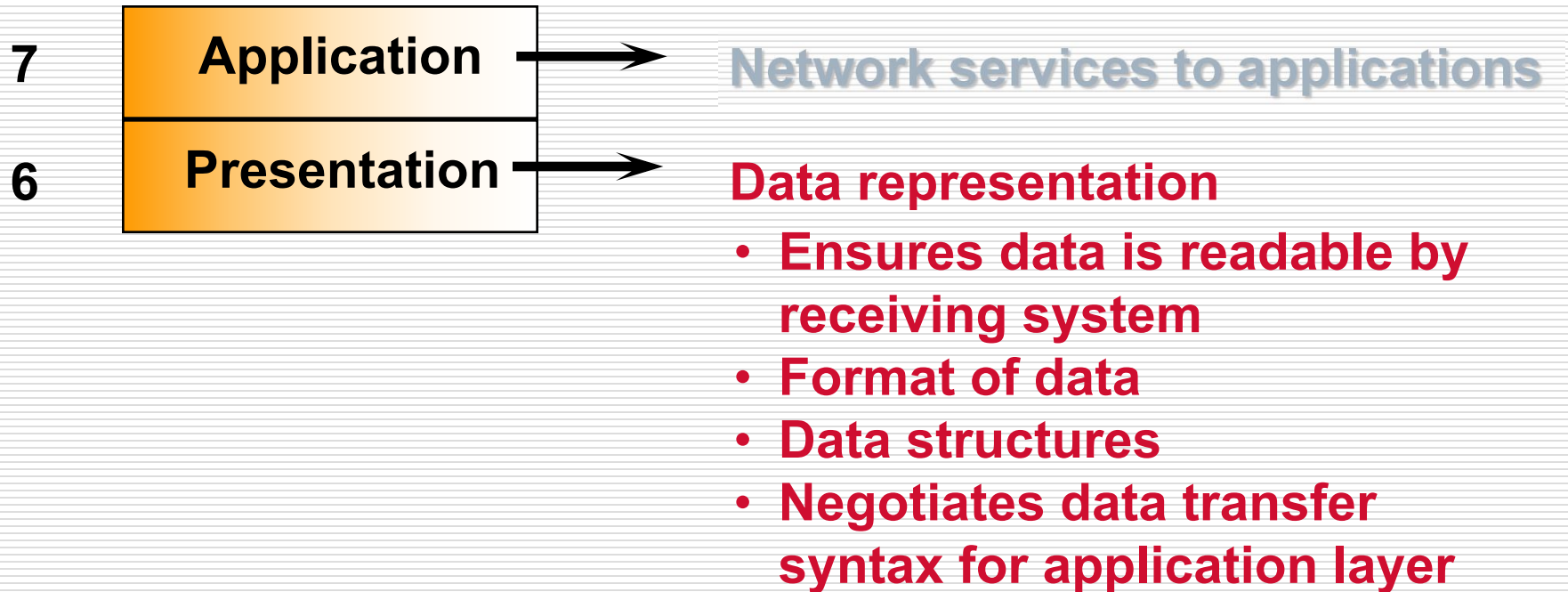
**Provides network services to application processes (such as electronic mail, file transfer, and terminal emulation)**

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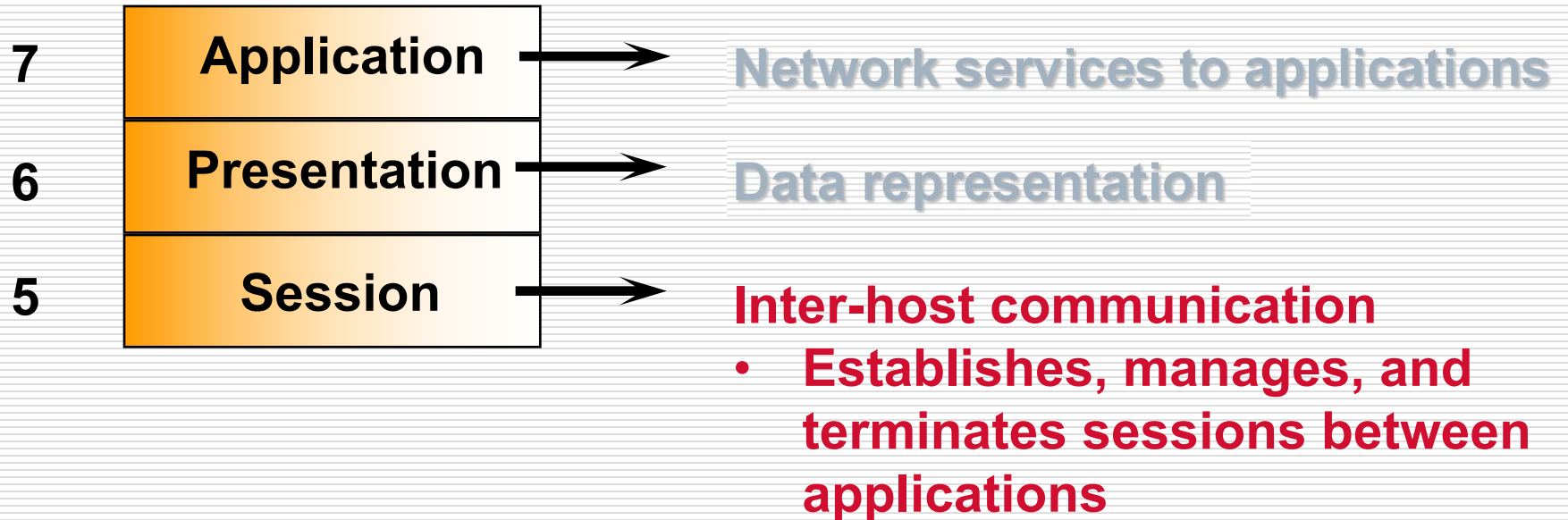
# Fungsi Setiap Layer

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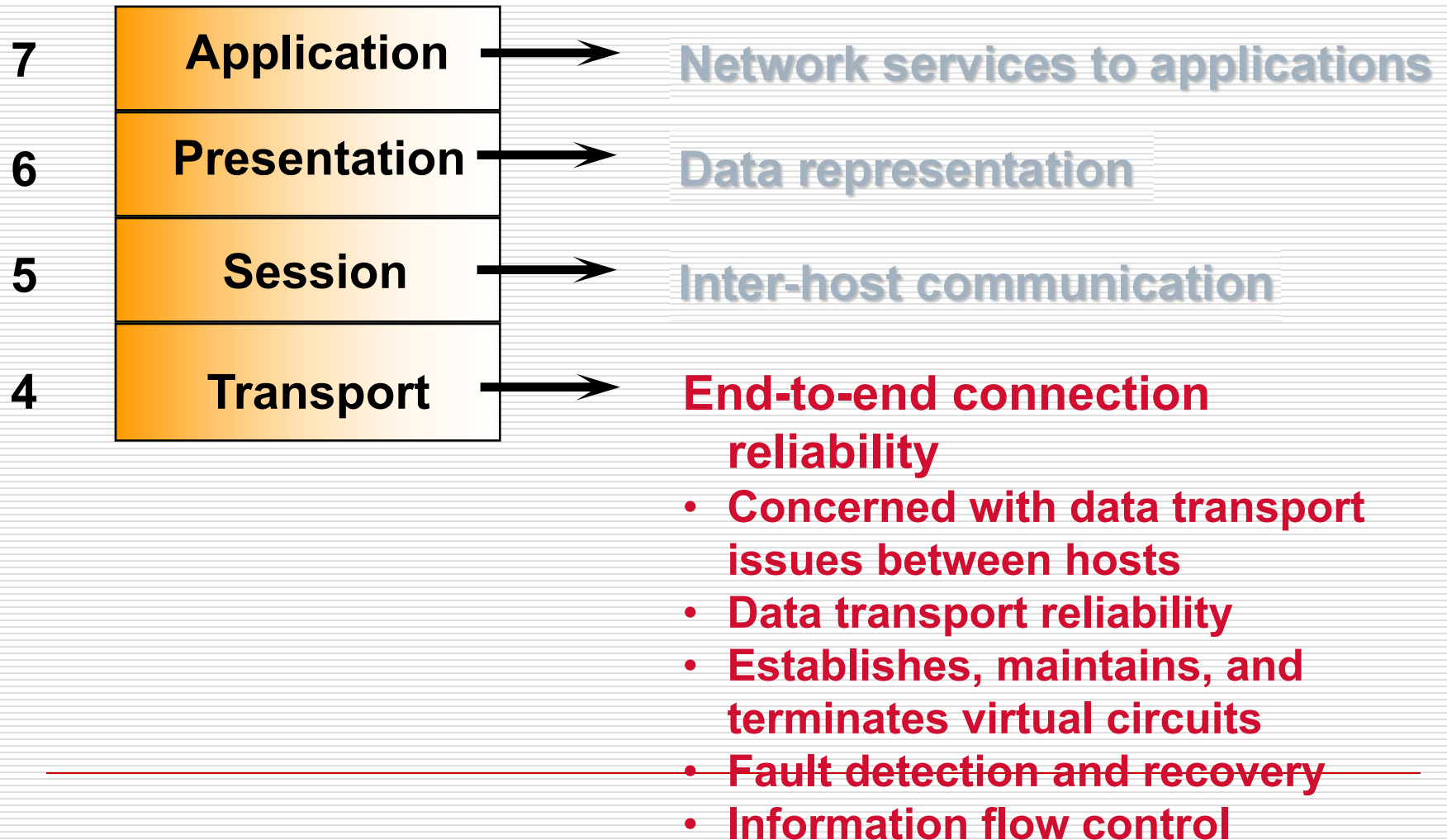
# Fungsi Setiap Layer

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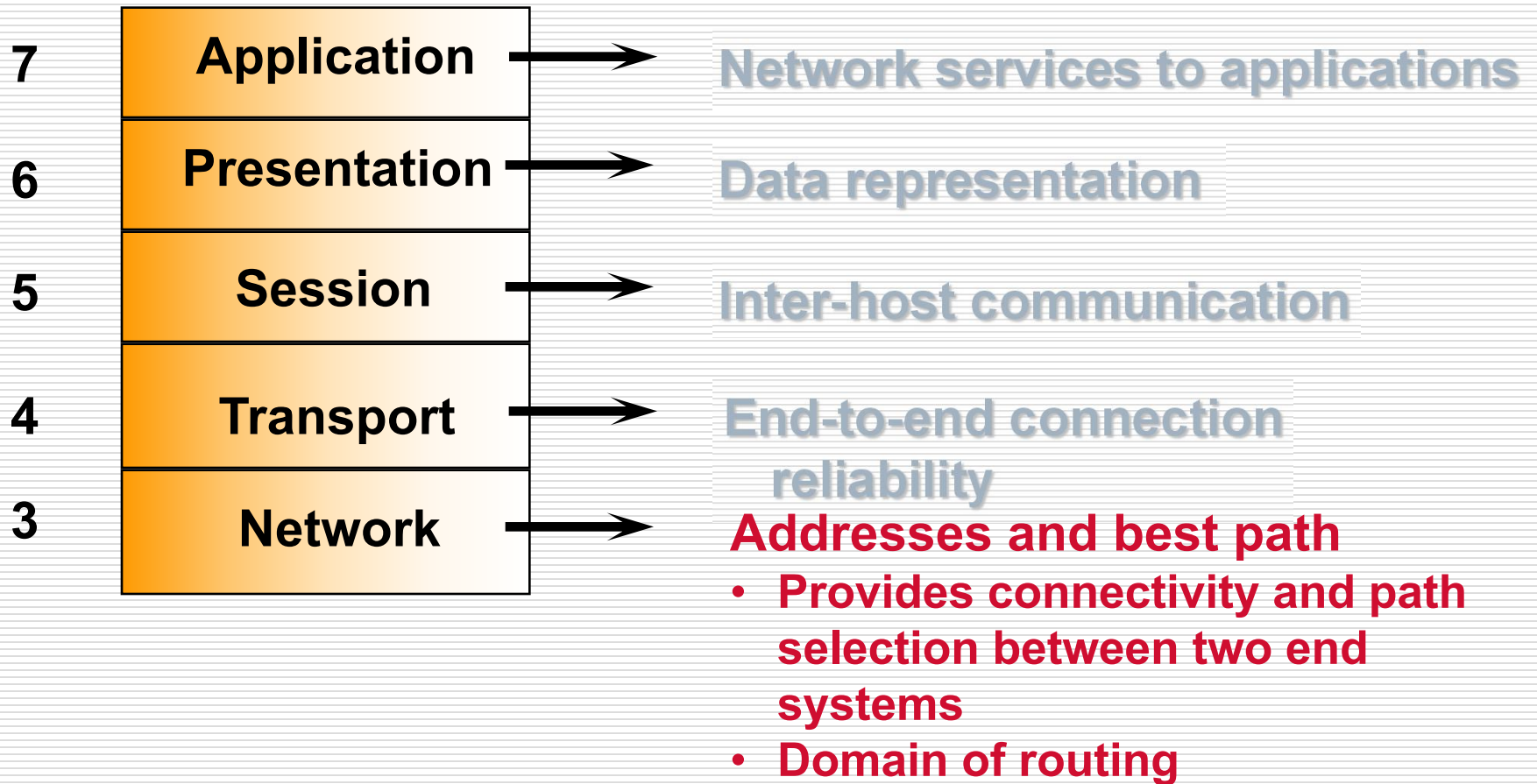
# Fungsi Setiap Layer

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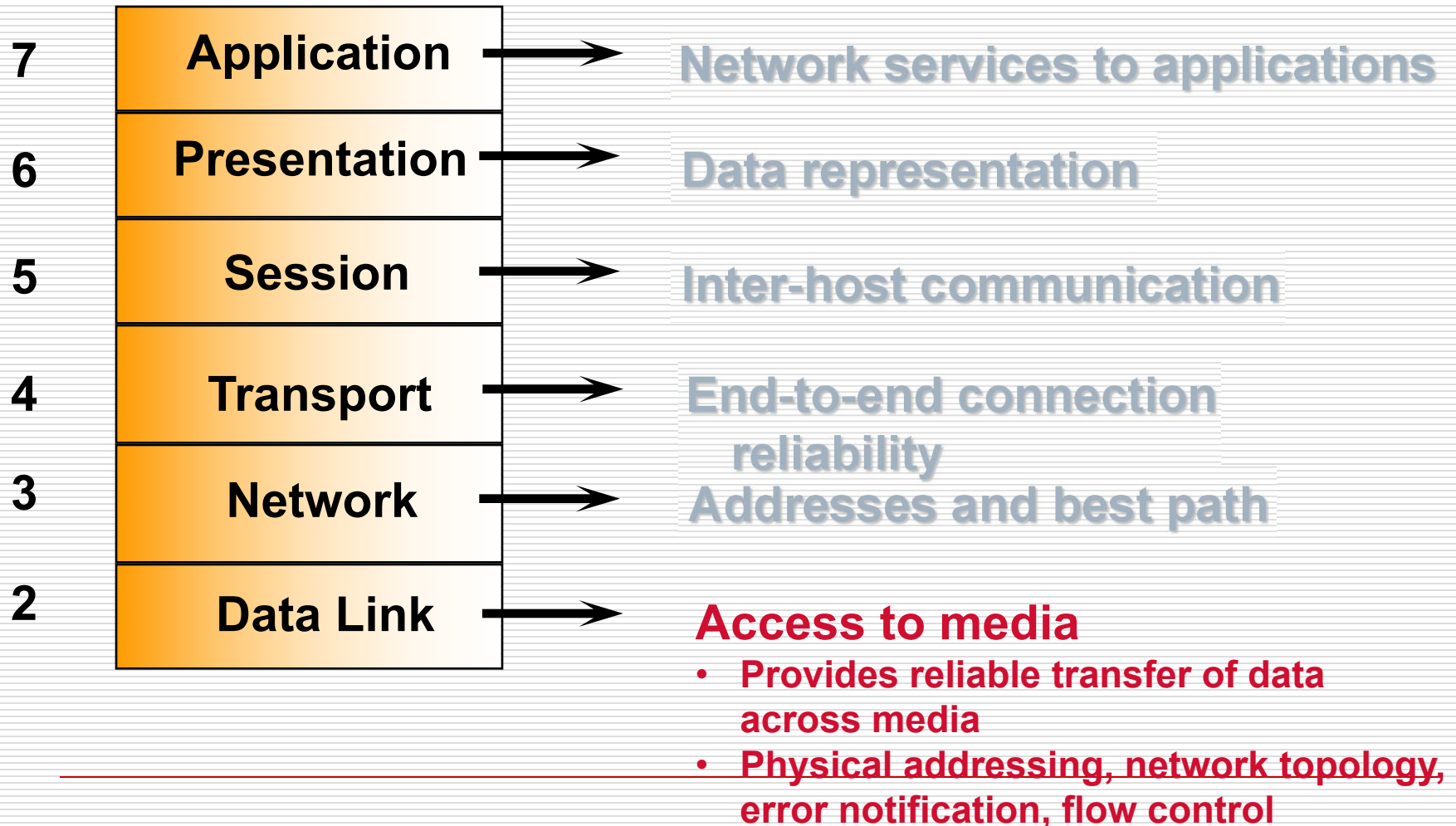
# Fungsi Setiap Layer

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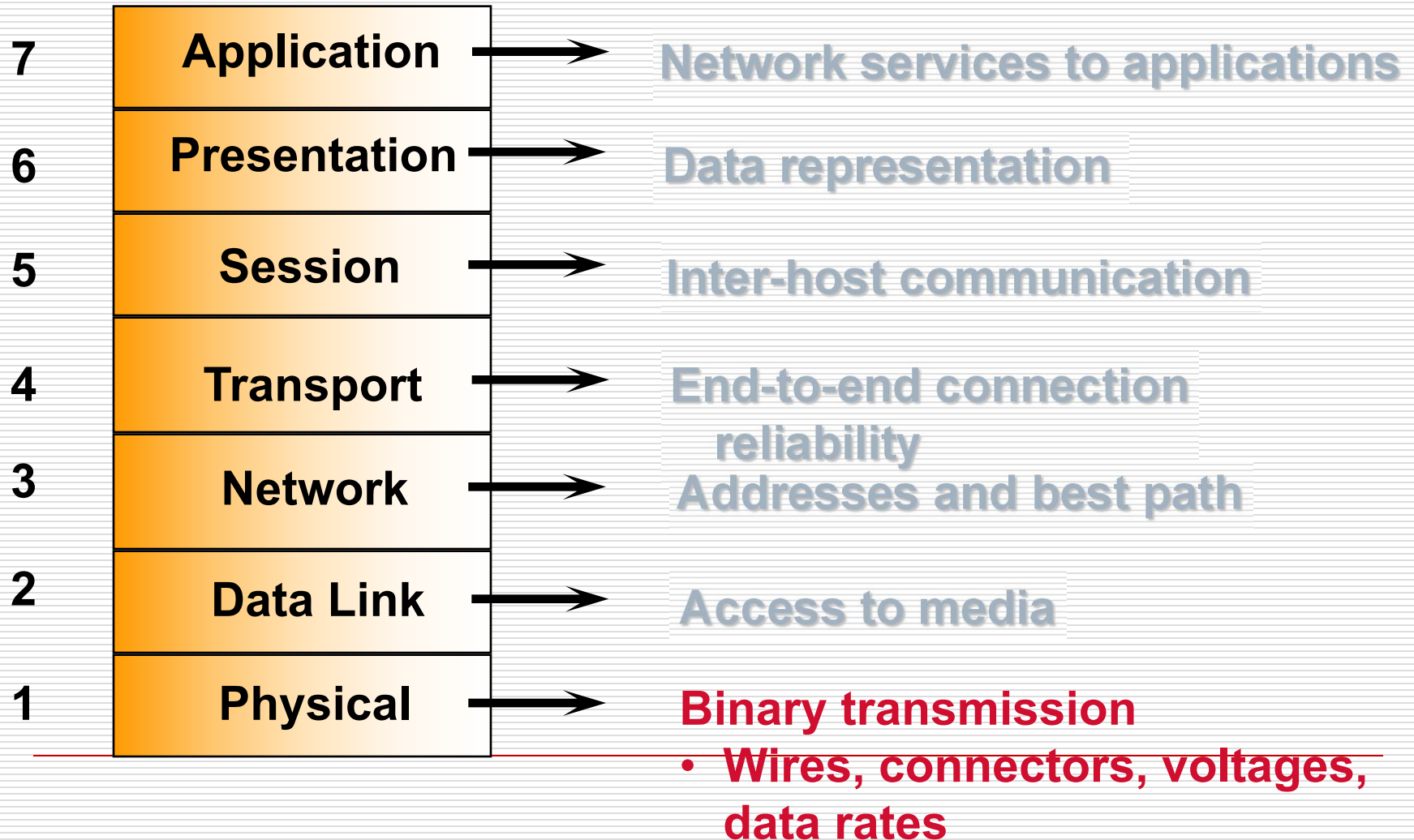
# Fungsi Setiap Layer

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# Fungsi Setiap Layer

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# Pengenalan Wireless Communication

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- ❑ Wireless communication (komunikasi tanpa kabel) digunakan ketika kabel tidak mungkin atau tidak layak dipasang/ditampilkan.
  
  - ❑ Media yang digunakan antara lain :
    - ❑ radio
    - ❑ gelombang mikro / microwave
    - ❑ bluetooth
    - ❑ IrDa, dll
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# Wireless Media

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Transmission Medium	Maximum Transfer Rate
<b>Infrared</b>	115 Kbps to 4 Mbps
<b>Broadcast radio</b>	
• Bluetooth	1 to 2 Mbps
• HomeRF	1.6 Mbps to 10 Mbps
• 802.11b	11 Mbps
• 802.11g	54 Mbps
• 802.11a	54 Mbps to 108 Mbps
<b>Cellular radio</b>	
• 2G	9.6 Kbps to 19.2 Kbps
• 3G	144 Kbps to 2.4 Mbps
<b>Microwave radio</b>	150 Mbps
<b>Communications satellite</b>	1 Gbps

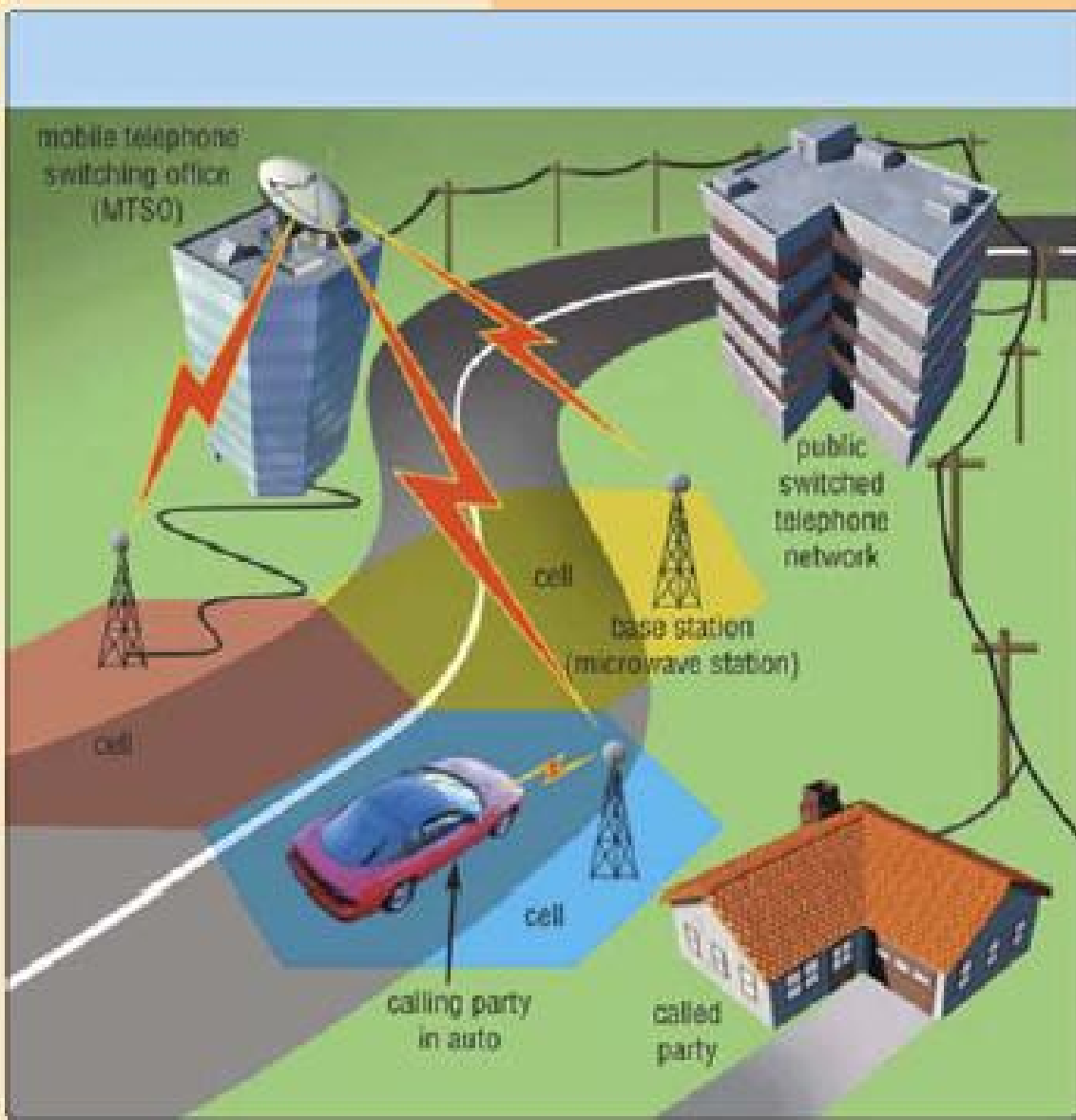


# Radio

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- ❑ Sinyal dibawa dalam spektrum elektomagnetik
  - ❑ secara 2 arah (bidirectional)
  - ❑ Radio Broadcast : sinyal radio didistribusikan melalui jarak jauh dan dekat
  - ❑ Radio Cellular : bentuk dari radio broadcast yang digunakan untuk komunikasi bergerak
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# Radio

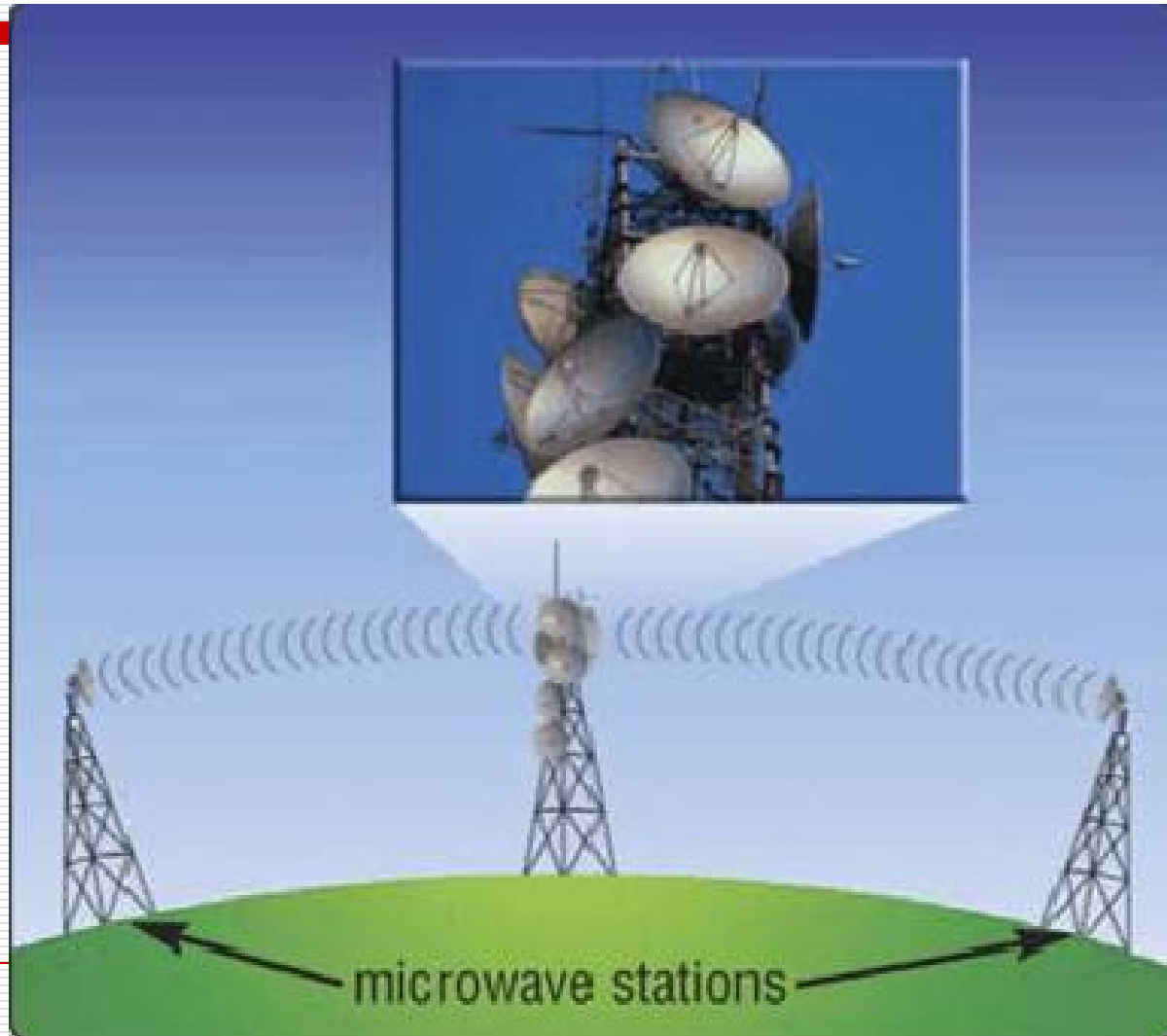


# Microwave

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- Microwave station :
    - menggunakan antena pantul bumi (earth-based reflective dish)
    - harus ditransmisikan secara lurus tanpa halangan
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# Microwave



# Komunikasi Satelit

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- Stasiun Luar Angkasa (space station) menerima sinyal gelombang mikro dari antena pantul bumi (earth-based reflective dish), menguatkan sinyal dan membroadcast sinyal kembali ke setiap stasiun bumi (earth-based station)
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# Komunikasi Satelit

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