Network Range and Speed

English For Software Engineering
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Learning Objectives

After this lesson, students will be able to:

- apply vocabulary surrounding the topic "Network Range and Speed" in the appropriate context.

- demonstrate the learned practical expressions in the form of short conversation with the aid of provided prompts.

- select relevant information from the provided text and recording.

- employ the learned grammatical features correctly.

Warm Up

Observe the following and discuss the questions with your teacher or the other participants

✓ What do you know of 5G?

✓ Do you have any 5G supporting devices? If yes, how is it any different than the 4G supporting ones?

Vocabulary Exercise

Complete the following sentences with the correct option provided on the left

a) **Long Term Evolution (LTE)**
b) **latency**
c) **coverage**
d) **optimization**
e) **characteristics**
f) **bandwidth**

1. One of the advantages of a 5G network is its low _____.

2. Network _____ refers to the geographical area where a mobile network signal is available.

3. The technology used in a 4G network is known as _____.

4. In software engineering, network _____ refers to the process of optimizing network performance to improve the speed and reliability of data transfer.

5. One of the benefits of 5G is its higher _____, which enables faster data transfer rates.

6. Mobile engineers need to be familiar with the _____ of different networks to develop applications that function optimally on all devices.

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Vocabulary Exercise – Answer Key

Complete the following sentences with the correct option provided on the left

a) Long Term Evolution (LTE)

b) latency

c) coverage

d) optimization

e) characteristics

f) bandwidth

1. One of the advantages of a 5G network is its low *latency*.

2. Network *coverage* refers to the geographical area where a mobile network signal is available.

3. The technology used in a 4G network is known as *Long Term Evolution (LTE)*.

4. In software engineering, network *optimization* refers to the process of optimizing network performance to improve the speed and reliability of data transfer.

5. One of the benefits of 5G is its higher *bandwidth*, which enables faster data transfer rates.

6. Mobile engineers need to be familiar with the *characteristics* of different networks to develop applications that function optimally on all devices.
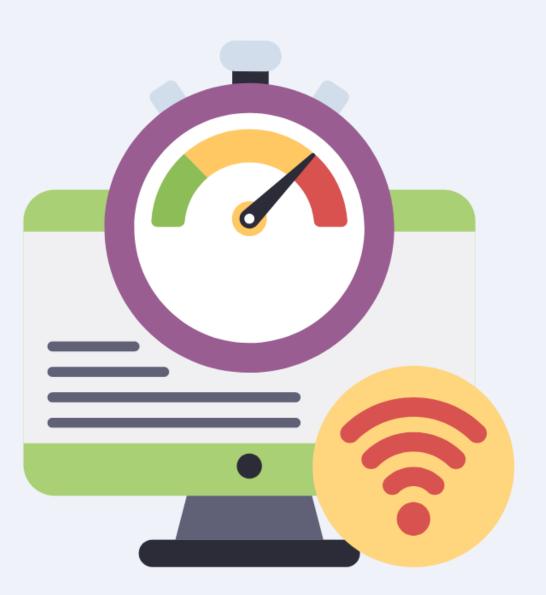
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Reading Activity

How Much Internet Speed Do You Need?

Read the table below and answer the questions that follow.

Internet Speed	What You Can Do
40–100 Mbps	- Stream in 4K on 2–4 devices - Play online games with multiple players - Download big files quickly (500 MB to 2 GB) - Run 3–5 smart devices
100–500 Mbps	- Stream in 4K on 5+ devices - Download very big files very quickly (2–30 GB) - Run 5+ smart devices
500–1,000+ Mbps	- Stream in 4K on 10+ devices - Download and upload gigabyte-plus–sized files at top speed - Run 10 or more smart-home devices in your abode - Do basically anything on multiple devices with no slowdowns

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Reading Exercise

Read the statements below and determine the correct speed.

Put a tick in the corresponding column. An example has been provided.

Questions	40 - 100 Mbps	100 - 500 Mbps	500 – 1.000+ Mbps
1. Which speed can handle up to 5 devices when used to stream in 4K quality?			
2. Which speed can handle up to 5 smart devices?			
3. The biggest file size this speed can download quickly is 2GB.			
4. What minimum internet speed is required to download files as small as 2GB?			
5. Which speed can handle as many devices as possible without reductions in speed?			✓
6. Which speed can equally download and upload gigabyte-sized files at its fastest speed?			

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Reading Exercise – Answer Key

Check the answers below

Questions	40 - 100 Mbps	100 - 500 Mbps	500 – 1.000+ Mbps
1. Which speed can handle up to 5 devices when used to stream in 4K quality?		✓	✓
2. Which speed can handle up to 5 smart devices?	✓	✓	✓
3. The biggest file size this speed can download quickly is 2GB.	✓		
4. What minimum internet speed is required to download files as small as 2GB?		✓	
5. Which speed can handle as many devices as possible without reductions in speed?			✓
6. Which speed can equally download and upload gigabyte-sized files at its fastest speed?			✓

Discussion Points

Discuss the questions below with your teacher or the other participants

✓ How important is network speed and range in

software engineering?

✓ What factors affect network speed and range,

and how can they be optimized?

Listening Activity

Listening 1 (Click the headphones icon for the audio access)
Network Speed
Listen to the provided recording and do the exercise that follows.

1. According to the second speaker, there are no issues with the network speed and range in the office.	True / False
2. The second speaker suggested upgrading equipment as a solution to improve network speed and range.	True / False
3. The second speaker thinks network range and speed is the least of their priority as it won't affect the efficiency of their work.	True / False
4. The first speaker thinks bandwidth limitations or network congestion are likely the cause of the speed slowdowns.	True / False
5. The first speaker suggested updating software and hardware to ensure optimal performance.	True / False

Listening Activity – Answer Key

Listening 1 **(Click the headphones icon for the audio access)**
Network Speed
Listen to the provided recording and do the exercise that follows.

1. According to the second speaker, there are no issues with the network speed and range in the office.	/ ***False***
2. The second speaker suggested upgrading equipment as a solution to improve network speed and range.	***True*** /
3. The second speaker thinks network range and speed is the least of their priority as it won't affect the efficiency of their work.	/ ***False***
4. The first speaker thinks bandwidth limitations or network congestion are likely the cause of the speed slowdowns.	***True*** /
5. The first speaker suggested updating software and hardware to ensure optimal performance.	***True*** /

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Grammar Bits

Phrasal verbs

Phrasal verb is a verb plus a preposition or adverb which creates a meaning different from the original verb.

Phrasal verb formula:

- verb + adverb
- verb + preposition
- verb + <u>both</u> adverb & preposition

1 **Look** **forward** **to** : To be excited because an event or activity is going to happen.
 (V)   (Adv)   (Prep)

I'm **looking forward to** working as a translator in Tokyo next week

2 **Branch** **out** : Expand or extend one's interests.
 (V)   (Adv)

The supermarkets have **branched out** into banking.

3 **Break** **into** : Enter (with effort or force)
 (V)   (Prep)

It's always been his ambition to **break into** broadcasting.

4 **Close** **down** : Stop operating.
 (V)   (Adv)

The firm has decided to **close down** its Chicago branch.

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Grammar Bits

Phrasal verbs

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Phrasal verb formula:

- verb + adverb
- verb + preposition
- verb + <u>both</u> adverb & preposition

5 **Step** **down** : Resign or leave (a position/job).
   (V)   (Adv)

The chairman was forced to **step down** due to ill health.

6 **Carry** **on** : Continue.
   (V)   (Prep)

He moved to New York to **carry on** his work.

7 **Note** **down** : Write something down.
   (V)   (Adv)

Her answers were **noted down** on the chart.

8 **Take** **off** : Become successful or popular very fast
   (V)   (Adv)

Her business has really **taken off**.

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Grammar Exercise

Complete the following cloze sentences with the correct phrasal verbs

1. Let's _____ with what we agreed for the moment.
2. The shop is _____ because the owner is moving to Jamaica and work there.
3. We _____ hearing from you soon.
4. The bookshop has decided to _____ into selling software and electronic publications.
5. Can you please _____ what I'm about to say?
6. Someone tried to _____ our hotel room last night. The door handle is now broken.
7. Allen didn't think that his online shop business would _____ so quickly. He feels really blessed.
8. She unwillingly agreed to _____ as managing director.

a. look forward to
b. note down
c. break into
d. step down
e. closing down
f. branch out
g. take off
h. carry on

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Grammar Exercise – Answer Key

Check the answers below.

1. Let's **carry on** with what we agreed for the moment.
2. The shop is **closing down** because the owner is moving to Jamaica and work there.
3. We **look forward to** hearing from you soon.
4. The bookshop has decided to **branch out** into selling software and electronic publications.
5. Can you please **note down** what I'm about to say?
6. Someone tried to **break into** our hotel room last night. The door handle is now broken.
7. Allen didn't think that his online shop business would **take off** so quickly. He feels really blessed.
8. She unwillingly agreed to **step down** as managing director.

a.   look forward to
b.   note down
c.   break into
d.   step down
e.   closing down
f.   branch out
g.   take off
h.   carry on

Discussion Points

Discuss the questions below with your teacher or the other participants

✓ How can network speed and range impact user experience, and what are some ways to ensure that users have a positive experience?

✓ How has the importance of network speed and range changed with the rise of remote work, and what are some strategies for managing network performance in a remote work environment?

Language Focus

Study and practice the following pattern for giving instructions

First, [verb + object + condition]. Next, [verb + object + condition].

Finally, [verb + object]

Examples:

✓ First, check if the router is properly plugged in. Next, restart the router by unplugging it and plugging it back in. Finally, wait for the router to finish booting up and test the network speed.

✓ First, open the network settings on your device. Next, check if you are connected to the correct Wi-Fi network. Finally, try moving closer to the access point to improve the network range.

Language Feature Exercise

Match each problem in the box below with its correct solution

a) I am experiencing slow internet speeds during video conferences.

b) The Wi-Fi signal in my living room is weak and spotty.

c) My internet speed is slow and I am unsure why.

Problems

Solutions:

1. First, run a speed test to determine your current internet speed. Next, check for any background processes or downloads that may be affecting your speed. Finally, close any unnecessary applications and run the speed test again to see if your speed has improved.

2. First, determine the location where the Wi-Fi signal needs to be extended. Next, install an access point in that location, such as a Wi-Fi extender. Finally, configure the access point to extend the existing Wi-Fi signal.

3. First, check your internet speed by running a speed test. Next, prioritize bandwidth for video conferencing applications such as Zoom or Microsoft Teams using the Quality of Service (QoS) settings on your router. Finally, close any unnecessary applications that may be using bandwidth.

Language Feature Exercise – Answer Key

Check the answers below

<u>Solutions:</u>

1. (c - My internet speed is slow and I am unsure why.) - First, run a speed test to determine your current internet speed. Next, check for any background processes or downloads that may be affecting your speed. Finally, close any unnecessary applications and run the speed test again to see if your speed has improved.

2. (b - The Wi-Fi signal in my living room is weak and spotty.) - First, determine the location where the Wi-Fi signal needs to be extended. Next, install an access point in that location, such as a Wi-Fi extender. Finally, configure the access point to extend the existing Wi-Fi signal.

3. (a - I am experiencing slow internet speeds during video conferences.) - First, check your internet speed by running a speed test. Next, prioritize bandwidth for video conferencing applications such as Zoom or Microsoft Teams using the Quality of Service (QoS) settings on your router. Finally, close any unnecessary applications that may be using bandwidth.

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Speaking Activity

Role Play

Study the provided scenarios/situations below. Choose a partner and discuss the solution.
Act out the problems and the solution in the form of short conversation. Instruct the solution as learnt in the previous slide.

a. Situation: A colleague is having trouble using a new software program.

   Problem: Your colleague is struggling to navigate a new software program and needs help.

b. Situation: A team member needs to schedule a virtual meeting with clients.

   Problem: A team member is unsure how to schedule a virtual meeting with clients using a video conferencing tool.

c. Situation: A new employee needs to set up their workstation for ergonomic comfort.

   Problem: A new employee is experiencing discomfort and pain due to an improperly set up workstation.

d. Scenario: A new hire needs to set up their email account on their company-issued laptop.

   Problem: A new hire is unsure how to set up their email account on their company-issued laptop.

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Pronunciation Drill

Practice speaking these following words with clear enunciation

- congestion /kənˈdʒes.tʃən/

- bandwidth /ˈbænd.wɪtθ/

- latency /ˈleɪ.tən.si/

- coverage /ˈkʌv.ər.ɪdʒ/

- ergonomic /ˌɜː.ɡəˈnɒm.ɪk/

- router /ˈraʊ.ʈɚ/

- colleague /ˈkɑː.liːɡ/

Learning Reflection

Think of today's learning session and answer the following questions.

What new knowledge have you obtained today?

(Could be a new concept(s) or new vocabulary items)

What do you think you can do with what you have learnt today?

What's your favorite part of today's learning topic?

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Thank you.

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