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Question A.

1. It can help ~~the app~~ different sizes of Android devices display the proper and same UIs.

2. UI can only be changed by UI threads. A single thread is used to draw UI, listen the events, invoke the life cycle functions. If UI ~~thread~~ thread is blocked for a long time, Android Not Responded error will occur. It may lead to bad user experience. For long running background work like downloading resources from the Internet, creating new threads is a good way.

Question B.

① ~~According to the gravity sensor.~~

When people move to different places, the app will recommend corresponding book stores according to your places.

② The app will recommend some books for people ~~at~~ according to the type of ~~these~~ books they often read.

③ The app will help people save the notes automatically when it awares <sup>that</sup> people have taken a part of notes.

④ The app will rank the books people once read in the books' history ~~according~~ <sup>according</sup> to the times <sub>of</sub> people read this book. <sup>automatically</sup>

⑤ The app can help people ~~recognize~~ <sup>check</sup> ~~identify~~ if the character or the word is written properly or ~~then~~ <sup>or</sup> transfer the notes ~~which~~ which are taken by stylus into standard printed characters.

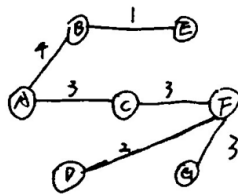
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Question C.

1. Iteration

|   | A | B        | C        | D        | E        | F        | G        |
|---|---|----------|----------|----------|----------|----------|----------|
| 0 | 0 | $\infty$ | $\infty$ | $\infty$ | $\infty$ | $\infty$ | $\infty$ |
| 1 | 0 | 4        | 3        | 9        | $\infty$ | $\infty$ | $\infty$ |
| 2 | 0 | 4        | 3        | 9        | $\infty$ | 6        | $\infty$ |
| 3 | 0 | 4        | 3        | 9        | 5        | 6        | $\infty$ |
| 4 | 0 | 4        | 3        | 9        | 5        | 6        | $\infty$ |
| 5 | 0 | 4        | 3        | 8        | 5        | 6        | 9        |
| 6 | 0 | 4        | 3        | 8        | 5        | 6        | 9        |
| 7 | 0 | 4        | 3        | 8        | 5        | 6        | 9        |

2.



3. No, it doesn't. Dijkstra's algorithm is a greedy algorithm. Once a node is ~~marked~~ marked as a ~~negative~~ visited node, we can't reconsider it if there is another path which has shorter ~~distance~~ distance.

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Question D.

1. A:  $[1, 1, 1, 1]$

B:  $[1, 1, -1, -1]$  ~~the spreading code~~

C:  $[1, -1, 1, -1]$

D:  $[1, -1, -1, 1]$

The spreading codes is ~~are~~ developed according to the OVSF.

$$\begin{array}{c}
 c_{1,0} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{2,0} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{3,0} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{4,0} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{1,1} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{2,1} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{3,1} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{4,1} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{1,2} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{2,2} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{3,2} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{4,2} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{1,3} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{2,3} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{3,3} \\
 [1]
 \end{array}
 \begin{array}{c}
 c_{4,3} \\
 [1]
 \end{array}$$

2. ~~A~~ transmit: A:  $[0] \rightarrow [-1]$

B:  $[0] \rightarrow [-1]$

C:  $[1]$  D:  $[1]$

For A:  $[-1] \otimes [1, 1, 1, 1] = [-1, -1, -1, -1]$

For B:  $[-1] \otimes [1, 1, -1, -1] = [-1, -1, 1, 1]$

For C:  $[1] \otimes [1, -1, 1, -1] = [1, -1, 1, -1]$

For D:  $[1] \otimes [1, -1, -1, 1] = [1, -1, -1, 1]$

$A+B+C+D = [0, -4, 0, 0]$

For A:  $[0, -4, 0, 0] \cdot [1, 1, 1, 1] = -4 < 0$

So the transmit for A is  $[0]$ . No problem.

For B:  $[0, -4, 0, 0] \cdot [1, 1, -1, -1] = -4 < 0$

So the transmit for B is  $[0]$ . No problem.

For C:  $[0, -4, 0, 0] \cdot [1, -1, 1, -1] = 4 > 0$

So the transmit for C is  $[1]$ . No problem.

For D:  $[0, -4, 0, 0] \cdot [1, -1, -1, 1] = 4 > 0$

So the transmit for D is  $[1]$ , No problem.

Therefore, they are not influenced each other. So my spreading codes can help to avoid interference among them.

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Question 6.

1. Yes, he can. Because XJTLU Duma is an open (unencrypted) WiFi network and I am using the network to connect to HTTP websites. The information on HTTP is transmitted by plain texts and HTTP ~~is~~ is a kind of no state connection.
2. No, he can't. Because HTTPS is ~~more safe~~ <sup>safer</sup> than HTTP. It is a encrypted protocol. SSL protocol on HTTPS help the bank encrypted all the information on their website.
3. It depends. I think it can not protect me completely. If the student is not a professional person, he is hard to ~~attack~~ attack. This is because MAC address filtering can only allow ~~the~~ proper MAC address to access the network and it is safer than an unencrypted WiFi network. However, some professional hackers can still break it by making some fake MAC address by some softwares.
4. Jamming.