

WEEK

17

Part 3 Wireless communications

Online activities for Week 17

iCMA 43

Block 3: Connecting people, places and things

This item is also available in [Week 15](#).

Questions

i

1

2

3

4

5

6

7

8

9

10

11

12

13

Finish attempt ...

Question 5 Tries remaining: 3

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A doctor's surgery monitors the heart rates of each patient seen in a day. Each patient's heart rate is taken at the beginning and at the end of their appointment and the average of these two numbers is found. The surgery needs to know which patients have an average heart rate of more than 100 beats per minute.

The surgery wants a program that will enable their patient coordinator to enter the necessary data and that will tell them the names of all patients with an average heart rate of more than 100 beats per minute. They already have a list of the names of the patients as a .txt file.

The patient coordinator has agreed to help with the program and has gathered the information in the following list:

- What data must be supplied?
 - user input
 - heart rates at beginning and end of appointments
 - data that already exists
 - names of patients
- What is required of the program?
 - Calculate the average heart rate for each patient
 - Output the names of all patients with an average greater than 100

The patient coordinator has decided to store the names of the patients and the two heart rates for each patient in three parallel lists.

She writes down a first version of an algorithm:

Input the two heart rates for each patient

Calculate the average heart rate for each patient

Find all patients with an average greater than 100

Output the names of these patients

She then refines the algorithm:

Repeat (number of patients) times

input the first heart rate

input the second heart rate

For each patient

Calculate the average of the first and second heart rates by adding both numbers and dividing by 2

Find all patients with an average greater than 100

Output the names of these patients

a.

Select a sub-process that still needs to be refined.

Choose...

b.

'Input the two heart rates for each patient' might be chosen to be implemented as a component because it is a reasonably substantial task. Select another characteristic of the task that makes it suitable to be implemented as a component.

Choose...

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< Previous page

Next page >

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