

External assessment 2021

Multiple choice question book

Digital Solutions

General instruction

- Work in this book will not be marked.



Queensland
Government



Queensland Curriculum
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Section 1

QUESTION 1

Converting a variable-length set of data to a fixed-length hexadecimal value is known as

- (A) hashing.
- (B) checksum.
- (C) encryption.
- (D) authentication.

QUESTION 2

A developer has produced a user interface for data entry in a new online system and has used consistent colour, layout and typography throughout.

The main purpose of doing this is to ensure the user interface is

- (A) easy to learn.
- (B) well organised.
- (C) visually appealing.
- (D) accessible to all users.

QUESTION 3

The FTP network protocol is used to

- (A) exchange files over the internet.
- (B) encrypt files exchanged over the internet.
- (C) tunnel data packets between a client and server.
- (D) create a secure connection between a client and server.

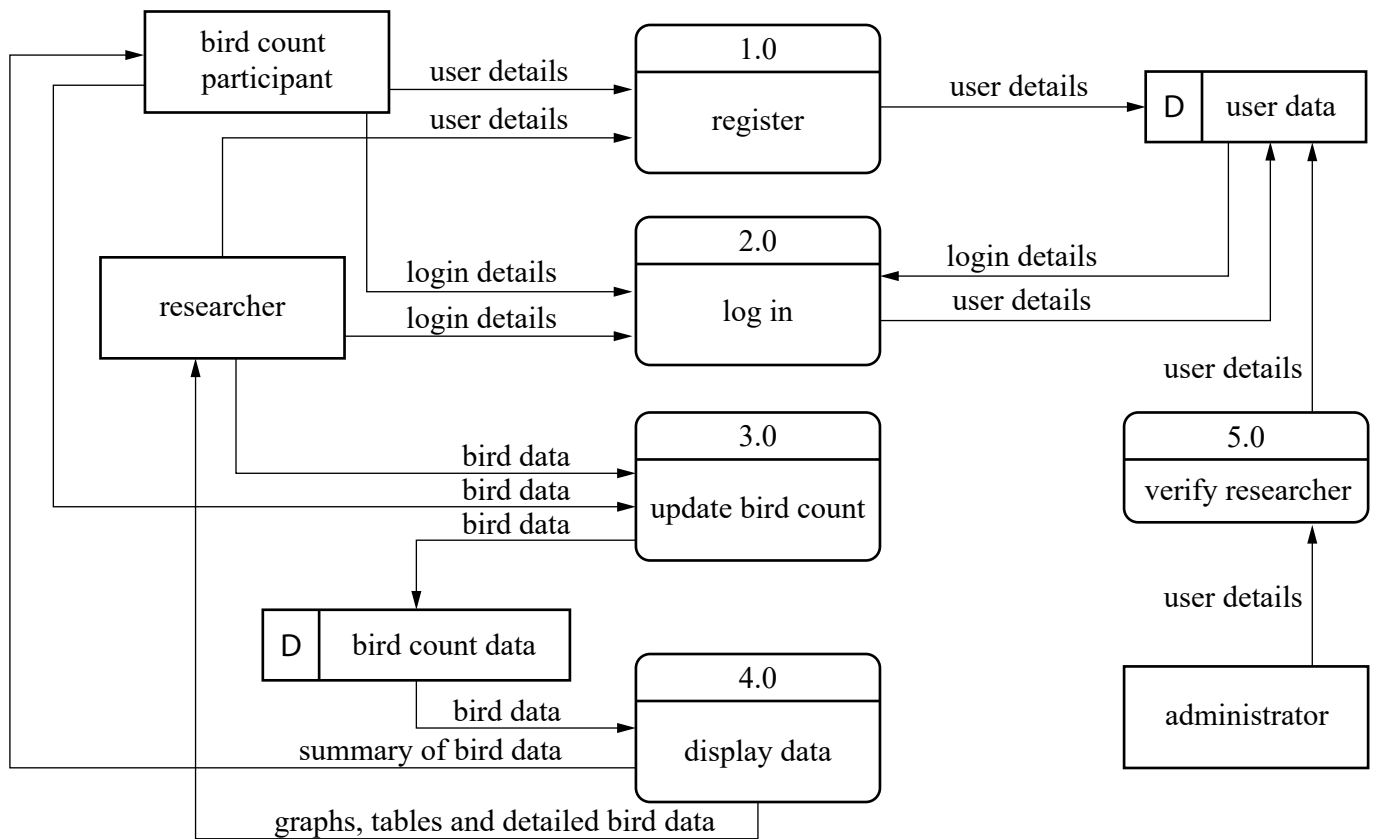
QUESTION 4

JSON is an effective exchange method for customer data across a networked system because

- (A) data structures are hierarchical and easily displayed on a website.
- (B) data can be tagged to associate with specific structures in a programming language.
- (C) data is human readable with code comments, making it easier to understand in programming.
- (D) data is easily converted into various data structures suitable for specific programming languages.

QUESTION 5

The data flow diagram describes a system for recording bird sightings.



Which statement about the diagram is correct?

- (A) Participants can access detailed bird count data.
- (B) Login screens for researchers and participants will be different.
- (C) The data interface for researchers and participants will be different.
- (D) Administrators need to verify all users before they can access the system.

QUESTION 6

Desk check the algorithm to predict the output for numX = 8 and numZ = 5.

BEGIN

SET numX user input

SET numZ user input

IF numX < 10 AND numZ > 10 **THEN**

OUTPUT "Condition 1"

ELSE numX > 5 OR numZ < 5 **THEN**

OUTPUT "Condition 2"

ELSE numX > 5 OR numZ < 10 **THEN**

OUTPUT "Condition 3"

ELSE

OUTPUT "Condition 4"

ENDIF

END

- (A) Condition 1
- (B) Condition 2
- (C) Condition 3
- (D) Condition 4

QUESTION 7

Screen-based user interfaces must be dynamically adjustable because mobile phones, televisions and other screens have different aspect ratios and dimensions.

This is an example of which useability principle?

- (A) safety
- (B) utility
- (C) validity
- (D) reliability

QUESTION 8

An algorithm is developed to establish a seating plan in a movie theatre so that individual bookings are always separated by two seats. To maximise ticket sales, bookings of four or more guests are accepted immediately. Bookings for smaller groups are not confirmed until 2 hours before the movie starts.

```
BEGIN
SET seats = true //assume seats are available
SET bookingConfirmed = false
SET DateTime //current date and time
INPUT movieStartTime
INPUT guestNumber
IF guestNumber < 4 AND
    IF movieStartTime - DateTime >= 2 hours
        SET bookingPending = true
    ELSE
        IF guestNumber >= 4 THEN
            SET bookingConfirmed = true
        ENDIF
    ENDIF
ENDIF
BEGIN bookingPending
//module to handle bookings for fewer than 4 guests
END
BEGIN bookingConfirmed
//module to handle bookings for 4 or more guests
END
END
```

The algorithm is incomplete. What is the best way to make the algorithm more efficient?

- (A) Use modularisation to suggest an alternative `movieStartTime` for `bookingPending`.
- (B) Add an algorithm to determine seat allocation, ensuring groups sit two seats apart.
- (C) Calculate `movieStartTime - DateTime` and set as a Boolean.
- (D) Use a FOR loop to check the parameters for `bookingConfirmed`.

QUESTION 9

The table describes a sample of the personalised numberplate range for Queensland.

Range	Classic	Emoji
Description	Combination of 3 numeric characters and 3 alphabetic characters	Combination of 5 alphanumeric characters and 1 emoji

Which SQL statement is correct for ordering a new personalised numberplate?

- (A)

```
CREATE TABLE orders
  product_range = 'classic_theme',
  combination = 'YIP333'
  customerId = 123;
```
- (B)

```
INSERT INTO orders (customerId, product_range, combination)
VALUES (123, 'classic_theme', 'YIP333')
```
- (C)

```
UPDATE orders
SET product_range = 'classic_theme', combination = 'YIP333'
WHERE customerId = 123;
```
- (D)

```
ALTER TABLE orders
SET product_range = 'classic_theme', combination = 'YIP333'
WHERE customerId = 123;
```

QUESTION 10

Which solution requirements help protect the integrity of customer order data when ordering online?

- (A) Customers can only track their own parcels.
- (B) Customers can track parcels using a parcel ID.
- (C) All delivery messages contain a valid checksum.
- (D) All delivery messages contain a valid hash function.



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