

External assessment 2024

Multiple choice question book

# Digital Solutions

## General instruction

- Work in this book will not be marked.



Queensland  
Government

**QCAA**

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## **Section 1**

### **Instruction**

- Respond to these questions in the question and response book.
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### **QUESTION 1**

Which element of visual communication, if not used appropriately, could risk the accessibility of a digital system?

- (A) line
- (B) form
- (C) scale
- (D) shape

### **QUESTION 2**

A retail store uses facial recognition to send text messages about sale items to consenting customers while they are in the store.

This use of data personally impacts customers through

- (A) invasion of privacy.
- (B) increased data accuracy.
- (C) improved store inventory management.
- (D) a more personalised shopping experience.

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### QUESTION 3

How could a developer refine the following algorithm to improve maintainability?

```
/* Calculate the average value of an input array */
0 START
1   INPUT x AS ARRAY
2   SET sum = 0
3   FOR n IN x
4     sum = sum + n
5   ENDFOR
6   CALCULATE result = sum / length of x
7   OUTPUT result
8 END
```

- (A) Use an error-checking function.
- (B) Write code comments on every line.
- (C) Rename variables n, x and result to be more descriptive.
- (D) Incorporate a function from an available code library to sum the array.

### QUESTION 4

An algorithm performs an operation.

```
0 BEGIN
1   SET x = 0
2   FOR i FROM 1 TO 100
3     IF is Prime(i) THEN
4       x = x + i
5     ENDIF
6   ENDFOR
7   OUTPUT x
8 END
```

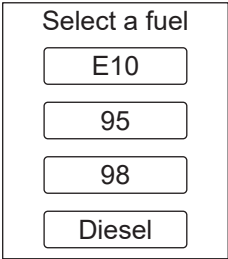
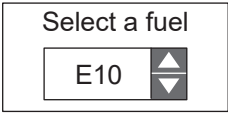
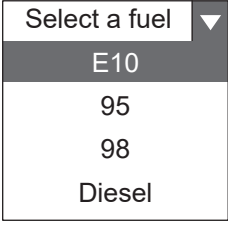
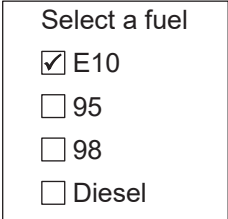
What does the algorithm output?

- (A) whether a given number is prime
- (B) the sum of the first 100 prime numbers
- (C) the prime numbers between 1 and 100, including 100
- (D) the sum of the prime numbers between 1 and 100, including 100

### QUESTION 5

A new digital system is being developed that will allow customers to select a fuel type to activate the pump at service stations. The developer is considering interface options. The viewport is large enough to fit any of the four options.

Which interface option is the most usable?

Interface options		
(A)	buttons	
(B)	a stepper	
(C)	a drop-down	
(D)	checkboxes	

### QUESTION 6

A distributed denial-of-service (DDoS) attack is a malicious cyber attack in which a server is overloaded with incoming traffic from multiple sources, preventing some or all legitimate requests.

This is a risk to data

- (A) privacy.
- (B) integrity.
- (C) availability.
- (D) confidentiality.

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### QUESTION 7

Which technique do developers use to ensure that video content transmitted in real-time to user mobile devices has reduced load times and maintains quality?

- (A) streaming
- (B) compression
- (C) broadcasting
- (D) file transfer protocol

### QUESTION 8

Match the correct code comment to line 2 of the pseudocode.

```
1 IMPORT JSON
2 SET x TO '{"name":"Ace", "age":30, "city":"Rockhampton"}'
3 SET y TO JSON.LOADS(x)
4 PRINT(x["age"])
```

- (A) Assign a string to variable x.
- (B) Assign a dictionary object to variable x.
- (C) Convert the text object into a dictionary object.
- (D) Convert the dictionary object into a text object.

### QUESTION 9

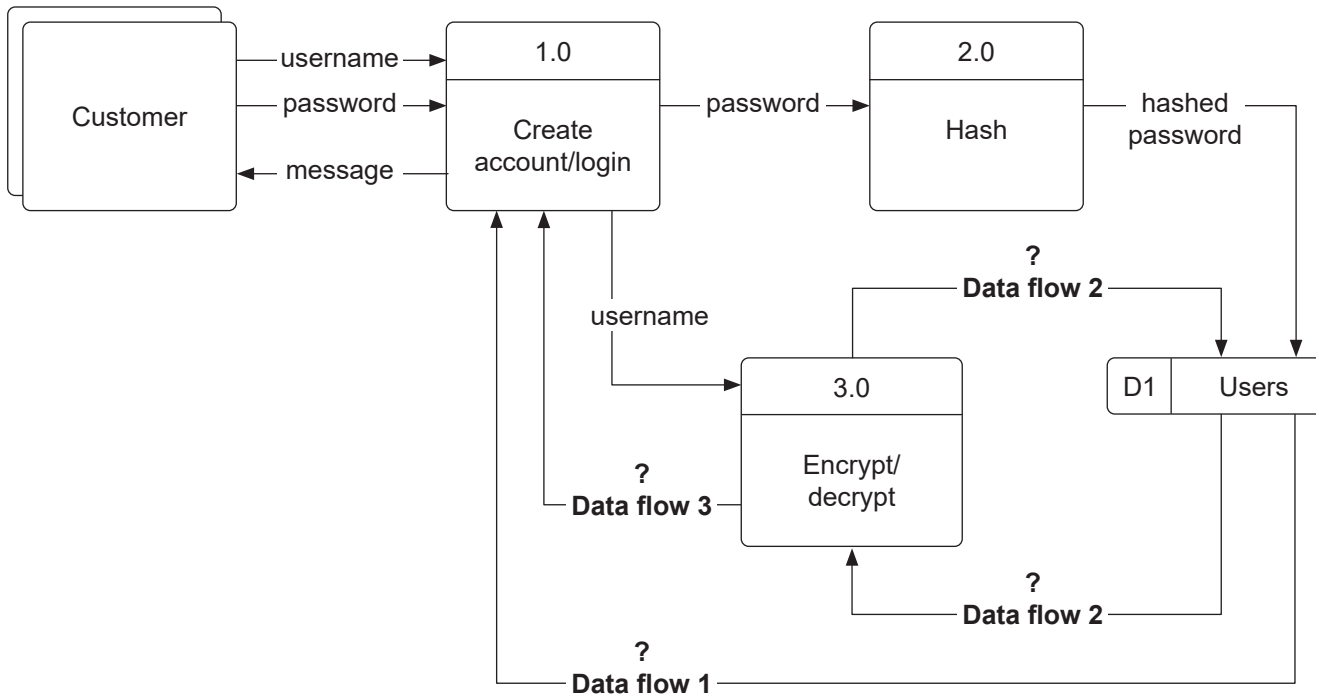
A school is developing a class timetabling solution for their students.

Which is not an essential data store for the initial iteration of the app?

- (A) teacher
- (B) subject
- (C) student
- (D) assessment

**QUESTION 10**

The data flow diagram symbolises data flow for secure user authentication.



Identify the correct data flow labels.

	<b>Data flow 1</b>	<b>Data flow 2</b>	<b>Data flow 3</b>
(A)	hashed password	encrypted username	decrypted username
(B)	hashed password	decrypted username	encrypted username
(C)	encrypted username	encrypted username	decrypted username
(D)	decrypted username	encrypted password	decrypted password

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