

1. How can we make our APIs secure?

- a). To rate limit APIs
- b). Add an extra layer of authentication
- c). Introduce privilege based access to avoid unnecessary data access
- d). All of these

Correct Answer: All of these

2. How do you select all the columns from a table named "Persons"?

- a). `SELECT * FROM Persons`
- b). `SELECT Persons`
- c). `SELECT [all] FROM Persons`
- d). `SELECT *.Persons`

Correct Answer: `SELECT * FROM Persons`

3. Suppose we use JWT in our e-commerce app(which can run on multiple devices) and a user adds some product to a cart(we store cart details in a database) using a desktop website and if he wants to later checkout using a mobile app, what will happen?

- a). The user won't be able to do it as the JWT token will be different for app and website
- b). It won't affect, users will be able to checkout smoothly, as the JWT task is only to authorize the user and since the user would have to login into both the env, it doesn't matter where he/she adds the product to the cart and where he/she checkouts if the user is authenticated and authorized.
- c). None of these
- d). All of these

Correct Answer: It won't affect, users will be able to checkout smoothly, as the JWT task is only to authorize the user and since the user would have to login into both the env, it doesn't matter where he/she adds the product to the cart and where he/she checkouts if the user is authenticated and authorized.

4. Which of the following module is required to create a web server?

- a). net module
- b). http module
- c). web module
- d). url module

Correct Answer: http module

5. Which of the following are the DDL queries?

- a). DROP table
- b). ALTER table
- c). TRUNCATE table
- d). All of the above

Correct Answer: All of the above

6. Which of the following function arguments are available to Express.js Route handlers?

- a). req - the request object
- b). res - the response object
- c). next

d). All of the above

Correct Answer: All of the above

7. Which of the following is not a valid aggregation function in MySQL?

a). SUM()

b). PRODUCT()

c). AVG()

d). FIRST()

Correct Answer: PRODUCT()

8. How can we access the params from the request object?

a). request.parameters

b). request.arguments

c). request.params

d). request.param

Correct Answer: request.params

9. What HTTP verb should be used for just returning the header?

a). HEAD

b). POST

c). GET

d). TRACE

Correct Answer: HEAD

10. In which join all the rows from the left table appear in the output irrespective of the content of the other table?

- a). RIGHT JOIN
- b). LEFT JOIN
- c). INNER JOIN
- d). OUTER JOIN

Correct Answer: LEFT JOIN

11. JWT token should be passed to the server through?

- a). Cookies
- b). Query params
- c). Headers
- d). Only b and c

Correct Answer: Only b and c

12. What are the essential user account functionalities that one must integrate in their app?

- a). Login
- b). SignUp
- c). Logout
- d). All of the above

Correct Answer: All of the above

13. Sequelize supports which of the following dialect?

- a). mysql
- b). sqllite
- c). postgresql
- d). All of the above

Correct Answer: All of the above

14. Which of the following method creates http server?

- a). createServer()
- b). putServer()
- c). setServer()
- d). getServer()

Correct Answer: createServer()

15. Suppose we want to send json response to the client, which method will we use?

- a). response.send()
- b). response.json()
- c). response.sendStatus()
- d). response.text()

Correct Answer: response.json()

16. Why do we need to pass a callback to the `app.listen(port,callback)` function?

- a). To perform some operations on startup
- b). It is optional to pass and can be ignored
- c). It is a syntax and we need to follow
- d). None of these

Correct Answer: It is optional to pass and can be ignored

17. What are operations that we must perform when user logouts?

- a). Clear local storage from browser
- b). Invalidate JWT token
- c). Both a and b
- d). None of the above

Correct Answer: Clear local storage from browser

18. Which of the following is not a benefit of using modules in Express?

- a). It provides a means of dividing up tasks.
- b). It provides a means of reuse of program code.
- c). It provides a means of reducing the size of the program.
- d). It provides a means of testing individual parts of the program.

Correct Answer: It provides a means of reducing the size of the program.

19. What does DQL stands for in MySQL?

- a). Data Query Languauge
- b). Data Query Lessons
- c). Digest Query Language
- d). Digest Query Lessons

Correct Answer: Data Query Languauge

20. What does MVC help us to achieve?

- a). It provides us to define a solid distinction between database, APIs, and view(UI)
- b). It helps to make code cleaner, readable, manageable, and easily debuggable.
- c). It supports rapid and parallel development
- d). All of these

Correct Answer: All of these

21. Suppose your eCommerce app runs on multiple devices, and the user adds a product into the cart using the app's website, and suppose he later wants to check out the product in the mobile app, how can it be handled through the backend?

- a). Cannot be done
- b). Store the data in browser's local storage
- c). Store the user cart details in the database and retrieve it later on any device
- d). Can't say

Correct Answer: Store the user cart details in the database and retrieve it later on any device

22. MySQL is which type of database?

- a). SQL
- b). NoSQL
- c). Both a and b
- d). None of the above

Correct Answer: SQL

23. Which of the following is not true about middlewares in nodeJS?

- a). Middlewares can return the response by terminating the request flow in between.
- b). Middleware functions have access to the request and response object in the request-response cycle.
- c). Middlewares are always invoked in the order in which they are added.
- d). None of the above

Correct Answer: None of the above

24. What are the properties of the Primary Key in MySQL?

- a). Unique Value
- b). Non-Null
- c). Only one primary key per table
- d). All of the above

Correct Answer: All of the above

25. In the model-view-controller (MVC) architecture, the model defines the?

- a). Presentation layer
- b). Interface layer
- c). Business-logic layer
- d). Data-access layer

Correct Answer: Data-access layer

26. JWT is used for?

- a). Authentication
- b). Authorization
- c). Both a and b
- d). None of the above

Correct Answer: Both a and b

27. Why should we encrypt the password before storing it into database?

- a). To make the system secure and avoid data leak incase system security is compromised
- b). Because it is a current market trend
- c). Both a and b
- d). None of the above

Correct Answer: To make the system secure and avoid data leak incase system security is compromised

28. What is the correct SQL query to return the first 10 results?

- a). Select * from product size 10;
- b). Select * from product limit 10;
- c). Select * from product count 10;
- d). None of these

Correct Answer: Select * from product limit 10;

29. What does REST stands for?

- a). Representational State Transfer
- b). Represent State Token
- c). Represent State Transfer
- d). Representational State Token

Correct Answer: Representational State Transfer

30. What is the correct query to update columns?

- a). <pre>

UPDATE column1 = value1, column2 = value2, ...

IN table_name

WHERE condition

</pre>

- b). <pre>

Select from table_name

WHERE condition

SET column1 = value1, column2 = value2, ..

</pre>

c). <pre>

Select from table_name

SET column1 = value1, column2 = value2, ...

WHERE condition

</pre>

d). <pre>

UPDATE table_name

SET column1 = value1, column2 = value2, ...

WHERE condition

</pre>

Correct Answer: <pre>

UPDATE table_name

SET column1 = value1, column2 = value2, ...

WHERE condition

</pre>

31. Which of the following is not a valid type of MySQL Query?

a). DML

b). DQL

c). DFL

d). DDL

Correct Answer: DFL

32. Why do our applications need external dependencies?

a). It is a norm to have external dependencies

b). Without external dependencies our application won't run

c). We need external dependencies if some feature is not inbuilt and is readily available via third-party packages

d). All of these

Correct Answer: We need external dependencies if some feature is not inbuilt and is readily available via third-party packages

33. What is the full form of MVC?

a). Model Viewer Center

b). Multi View Controller

c). Model View Center

d). Model View Controller

Correct Answer: Model View Controller

34. What does MVC help us to achieve?

a). It provides us to define a solid distinction between database, apis and view(UI)

b). It helps to make code cleaner, readable, manageable and easily debuggable.

- c). It supports rapid and parallel development
- d). All of these

Correct Answer: All of these

35. What does ORM stands for?

- a). Object Relative Map
- b). Object Relational Mapping
- c). Object Relation Mask
- d). None of these

Correct Answer: Object Relational Mapping

36. Which of the following is true about Sequelize?

- a). It is a promise based ORM
- b). It performs management version of the database
- c). It performs model mapping to database
- d). All of the above

Correct Answer: All of the above

37. Which of the following is true about Middlewares in Nodejs?

- a). Middlewares are executed in the order they are specified in the code
- b). Middlewares can terminate the request
- c). Both a and b

d). Only a

Correct Answer: Only a

38. How does the request flow in MVC architecture?

a). Server sends request to the client controller, request is redirected to database to query for data and forms the data model and then the appropriate view renders the output.

b). Browser sends request to the MVC application, the request is redirected to the controller, controller processes the request and forms the data model, the model is then passed to the view, finally the view renders the output

c). Browser sends request to the MVC application, the request first forms the data model and controller processes the request and runs business logic using data model, finally view renders the output.

d). There is no such specific standard flow for MVC architecture.

Correct Answer: Browser sends request to the MVC application, the request is redirected to the controller, controller processes the request and forms the data model, the model is then passed to the view, finally the view renders the output

39. From which directory do we usually serve static files?

a). public

b). static

c). html

d). None of them

Correct Answer: public

40. Which of the following is not a valid aggregate function in MySQL?

- a). SUM()
- b). MEAN()
- c). MAX()
- d). COUNT()

Correct Answer: MEAN()

Round 2

Question 1

Problem Statement

You are given an $m \times n$ integer grid `accounts` where `accounts[i][j]` is the amount of money the i th customer has in the j th bank. Return the wealth that the richest customer has.

A customer's wealth is the amount of money they have in all their bank accounts. The richest customer is the customer that has the maximum wealth.

Constraint

- $m == \text{accounts.length}$
- $n == \text{accounts}[i].\text{length}$
- $1 \leq m, n \leq 50$
- $1 \leq \text{accounts}[i][j] \leq 100$

Input Format

- The first line of input consists of a m and n as integer value
- The m lines of input consists n space separated integers

Output Format

- Return the wealth customer position (starting from 1)

Sample Input 1

2 3

1 1 4

2 2 3

Sample Output 1

2

Explanation of Sample 1

1st customer has wealth = $1 + 1 + 4 = 6$

2nd customer has wealth = $2 + 2 + 3 = 7$

The 2nd customer is the richest with a wealth of 7.

Sample Input 2

3 2

1 5

5 3

3 7

Sample Output 2

3

Explanation of Sample 2

1st customer has wealth = 6

2nd customer has wealth = 8

3rd customer has wealth = 10

The 3rd customer is the richest with a wealth of 10.

Sample Input 3

2 3

1 2 3

3 2 1

Sample Output 3

1

Explanation of Sample 3

1st customer has wealth = $1 + 2 + 3 = 6$

2nd customer has wealth = $3 + 2 + 1 = 6$

Both customers are considered the richest with a wealth of 6 each, so return 1 (return the latest i.e. minimum position).

Solution:

```
let [people, accounts] = readline().split(' ').map(Number)
```

```
let wealthyPerson = 1

let wealthyAmount = 0

for(let i = 0; i < people; i++){

    var money = readline().split(' ').map(Number)

    var sumAmount = money.reduce((a,b) => a + b, 0)

    if (sumAmount > wealthyAmount){

        wealthyAmount = sumAmount

        wealthyPerson = i + 1

    }

}
```

console.log(wealthyPerson)

<https://ideone.com/VsyiSm>

Question 2:

Problem Statement

Given an integer n , return true if it is a power of four. Otherwise, return false.

An integer n is a power of four, if there exists an integer x such that $n == 4^x$.

Constraint

- $-2^{31} \leq n \leq 2^{31} - 1$

Input Format

- First line contains an integer n

Output Format

- Print “true” if n is power of four else print “false”

Sample Input 1

4

Sample Output 1

true

Explanation of Sample 1

$4^1 = 4$, hence true

Sample Input 2

5

Sample Output 2

false

Explanation of Sample 2

$4^1 < 5 < 4^2$, as for any x $4^x \neq 5$, print false

Sample Input 3

16

Sample Output 3

true

Explanation of Sample 3

$4^2 = 16$, hence print true

Sample Input 4

1

Sample Output 4

true

Explanation of Sample 4

Since $4^0 = 1$, print true

Solution:

<https://ideone.com/1eACjv>

```
process.stdin.on('data', function (userInput) {  
    const inputString = parseInt(userInput); // taking the input string  
    console.log(isPowerOfFour(inputString));  
});
```

```
function isPowerOfFour(n){  
    if(n == 1) return true;  
    if(n == 0 || n%4 != 0) return false;  
    return isPowerOfFour(n/4);  
}
```