UEAT

Technical Test
Full-Stack Developer

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The goal of this test is to learn more about who you are as a developer and your skills. There is no trick or puzzle. We look for people that can write robust and clean code, know the best practices and can work efficiently with their colleagues. We do not expect you to be an expert in all areas. We are looking for one strong area as well as a minimal understanding of other areas. Answer the questions with as many details as you can and if anything is unknown to you or unclear, do not hesitate to mention it in the answer.

1. What new Web technologies have you learned recently? Can you talk a little bit about them?

The new technology I've been learning is typescript. Because this technology helps the developer with errors and warnings, it could be said that it is an improvement of JavaScript. This technology integrates well with reactjs, react native and node js, which are my main tools.

2. For you, what are the three most important qualities for a developer?

For me the main qualities are:
Problem solving, at the time of developing software there are many problems that may exist but we must find solutions.
Teamwork is the main quality for interacting with different people who

fulfill specific functions within the development area.
Responsibility, at the moment of developing we must be aware of our times and objectives set.

3. Can you talk about a few design patterns you appreciate? In what situation have you used them?

Design patterns try to identify problems and provide appropriate solutions through trial and error that help us save time.
I have used them in creational themes for prototyping and development when reusing or creating components that will be used in future situations, in the code structure when creating libraries, objects or classes.

4. If you had a slow API call, what would be the methods to optimize it?

One of the methods that could be used is the partial resources that will give us the data that interests us and not consume unnecessary resources. We could also use caching to be able to store the information that we will reuse.

5. You develop a Web page with pretty interactive animations. Unfortunately, those animations are not supported with Internet Explorer 9 and the page does not load. If supporting IE9 was a requirement, how would you solve that?

I would convert that animation as a gift or svg, another option would be to work in css.

6. Most of the users for an app are in an area where the network is unstable. With an app mainly used on mobile, how can you make sure it keeps working when the network connection is lost? What strategy would you use?

It would be that some application packages can be downloaded in the background, the transactions are put in memory when connected to a network can be executed.

7. Can you describe what is a deadlock? How can you avoid making one?

A deadlock is when the transactions are many times executed at the same time with the same keys, it is like in the traffic in a cross track the cars and all of them start at the same time. This can be avoided by creating separate requests or by waiting for one to be executed after the other.

8. When is it relevant to add data to a cache? What would be the consequences on the rest of the system?

I think it's relevant when we need to execute faster transactions or the data is not sensible. I see that the consequences would be that this data can be extracted and misused if it is not encrypted.

9. What would be the best way to save a user password and making sure it is safe from hackers?

For me, the best way is to keep these encrypted and maybe they have a hash since the information would only go on one side and always the key combinations with symbols, signs, numbers and characters.

10. What are the benefits of Cloud Hosting (AWS, Google Cloud, Azure) vs Self Hosting?

I think that the benefits are many since these have better infrastructures for their operation, one of their own suffers many risks, it is necessary to prevent network, electricity failures. we can see the theme of the location among others

11. How can you make sure the deployment of a new version does not create other bugs?

With the most thorough and correct test by a specialist, many times as developers we do not find the errors since we know the correct operation of the software.

12. Describe how you solved a major problem in a past project :

In my last project the main problem was the communication with a web page of the client, this no longer had support and I did not want to change or generate an api on it, the tool to use had previously been tested and functional at the time of deployment I suffer updating by its creators and we were left with a void for using that package which had to be studied thoroughly to get out of that problem.

13. Write in your language of choice a function that converts a roman number *string* to an *integer*. Make sure to build it in a way that will be future proof to new specifications without adding unnecessary complexity. Also make sure it is clean and easy to understand for another developer.

The following symbols represent the values.

I = 1
V = 5
X = 10
L = 50
C = 100
D = 500
M = 1000

Each character adds a number. However, those are the exceptions :

I can be before V and X to be 4 and 9
X can be before L and C to be 40 and 90
C can be before D and M to be 400 and 900

Example 1: XXI is 21
Example 2: XL is 40
Example 3: LVIII is 58

The code can be written within an editor and sent by email in a ZIP.

14. Write unit tests that make sure the function from the previous question is working properly. Make sure to have 100% test coverage and include all possible test cases. Include it in the same ZIP.