INTERNSHIP TEST

Abstract

The following is a set of tests used as an evaluation for internship candidates applying at division5. We do not expect that you know how to implement what is requested in this document, however, we do expect that you learn in the process, deliver what is requested and also gain an understanding along the way.

This test will be a way for us to test how fast you learn and adapt which will tell us whether you are a good fit for our company.

Expectations

These tests are entry-level excercises designed to define if you are a good fit for our internship program. At the end of this test, you will receive a thorough feedback regarding your application in complete transparency.

In order to be qualified for the next step, you must provide a correct answer for all five excercises, and gain a deep understanding of the implementation along the way. You must be able to explain practically and theoretically what you have implemented.

Future

At the end of this application, you will receive our review which, if positive, will make you eligible for the next step. The next step will be an interview to ensure you are a good fit for us but also if division5 is what you are looking for also culturally speaking. If that is also fine, you will be eligible for our internship program. For any questions or uncertainties, please do not hesitate to contact us at talents@division5.co.

Delivery and deadline

Every test has and should have a deadline. This ensures there is an expected target to achieve. Also, working with deadlines improves reliability and makes everyone able to achieve goals frequently and efficiently.

We expect the completed excercises to be delivered in 2 days.

division5

Test

1 - Kerkesa :

Jepet nje array me gjatesi N dhe i perbere nga numra te plote. Shkruani nje funksion i cili e merr si parameter kete array dhe e modifikon duke i dyfishuar vlerat. Nese vlera paraardhese dhe pasardhese te vleres qe po dyfishohet jane te barabarta, te ndryshohet vlera pasardhese me 0. Array perfundimtar, duhet te kete te gjitha 0 ne fillim.

Array i dhene eshte :
[0 2 5 4 1 0 3 3 6 7]

2 - Kerkesa :

Jepet nje matrice me N dhe M dimensione ku vlerat e matrices jane 1 ose 0. Te gjendet nen-matrica katrore me dimensionet me te medha ku vlerat te jene te gjitha 1. Funksioni duhet te ktheje indeksin fillestar te kesaj nen-matrice.

Matrica e dhene eshte :

0 1 0 1 1
0 1 1 1 0
1 1 1 1 0
1 1 1 1 0
1 1 0 1 1
0 1 0 1 0

3 - Kerkesa :

Jepet nje array me gjatesi N dhe i perbere nga numra te plote. Gjeni numrin qe perseritet me shume ne kete array me kompleksitetin O(n) .

Array i dhene eshte :
[2,4,4,5,2,3,3,4,5,6,6,6,1]

4- Kerkesa:

Jepet nje array e renditur me gjatesi N dhe e perbere me string. Te gjendet indeksi qe ka vleren ‘Paul’, Te zgjidhet ne menyren me eficente.

Array i dhene eshte:
[‘Annie’, ‘Bernard’, ‘Daniel’, ‘Jack’, ‘Noel’,’Paul’, ‘Stela’, ‘Tom’]

5 - Kerkesa :

Jepet nje peme ku cdo nyje ka nje numer te fundem por te papercaktuar bijesh. Ne strukture te nyjes nuk ruhet referenca e prindit te nyjes. jepet nje vlere X qe i perket nje nyje te cfaredoshme ne peme. Nese vlerat jane unike ne peme, gjeni vleren e prindit te nyjes me vleren X.

Specifikime :
1 - Ndertoni strukturen per te perfaqesuar nje peme te tille.
2 - Ndertoni funksionin rekursiv per te gjetur vleren e prindit.