Ignite Solutions Technical Puzzles - 1

We are looking for great developers who enjoy technology. This programming exercise is a way that we evaluate candidates and to have some fun (there are some puzzles in here but don't get stumped. We are sure you can solve them). We ask all our candidates (freshers and senior) to go through some form of this. We hope you have fun doing these puzzles.

Instructions

- Please complete these exercises and email back your answers.
- Please be sure to reference the question numbers in your answers.
- You can attach any additional files (such as program code files). We encourage your to compile and run your code and make sure that it works.
- We prefer answers in Python, PHP or JavaScript. If you don't know these languages, use any other language you are comfortable with (but we expect you to be able to learn Python/JavaScript/PHP)
- Your code should use good programming practices and conventions including consistent indentation, consistent use of variable/function/class/method naming conventions.
- Note - personal integrity is highly valued. It is fine to research using the internet but be sure to answer the questions on your own.

Questions on next page

Question 1. *Python, Ruby or JavaScript*

Write a function that takes an array of integers and returns that array rotated by N positions using Python or Ruby or JavaScript.

> For example, if N=2, given the input array [1, 2, 3, 4, 5, 6]
> the function should return [5, 6, 1, 2, 3, 4]

Question 2. *JavaScript*

In **JavaScript**, answer if the following expressions result in true or false (and explain your answer)

```
a.    "0" == 0        // true or false?
b.    "" == 0         // true or false?
c.    "" == "0"       // true or false?
```

Question 3. *Python, Ruby or JavaScript*

Most languages have a built in sort method that will sort an array of strings alphabetically. Demonstrate how to sort an array of strings by the length of each string, shortest strings first.

Hint: clean, small code wins.

Question 4. *JavaScript*

```
function weird(x) {
      var tmp = 3;
      return function(y) {
            return x + y + ++tmp;
      }
}
var funny = weird(2);
var final_answer = funny(10);
```

What is the value of final_answer at the end of this snippet? Please explain your answer

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Question 5.   *Python, Ruby or JavaScript*

Consider the following pattern:

A → D	M → P	X → A
a → d	m → p	x → a

Now, write a program to solve the following message using Python, JavaScript or Ruby.

Vrphwklqj phdqlqjixo

Hint: The answer is something meaningful.

Question 6.   *Python, Ruby or JavaScript*

Use the following paragraphs (in italics below) as input to the program you wrote for Question 5. It should output a meaningful question. Write a program to solve that question.

Zulwh d surjudp (lq Sbwkrq, MdydVfulsw ru Uxeb) wr srsxodwh dqg wkhq vruw d udqgrpob glvwulexwhg olvw ri 1 ploolrq lqwhjhuv, hdfk lqwhjhu kdylqj d ydoxh >= 1 dqg <= 100 zlwkrxw xvlqj dqb exlowlq/hawhuqdo oleudub/ixqfwlrq iru vruwlqj.

Brxu surjudp vkrxog fduhixoob frqvlghu wkh lqsxw dqg frph xs zlwk wkh prvw hiilflhqw vruwlqj vroxwlrq brx fdq wklqn ri. Surylgh wkh vsdfh dqg wlph frpsohalwb ri brxu dojrulwkp

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Question 7.   *Python, Ruby or JavaScript*

Write a simple program that reads a line from the keyboard and outputs the same line where every word is reversed. A word is defined as a continuous sequence of alphanumeric characters or hyphen ('-'). For instance, if the input is

"We are at Ignite Solutions! Their email-id is careers@ignitesol.com"
the output should be
"eW era ta etingl snoituloS! riehT di-liame si sreerac@losetingi.moc"

HINT: Read the problem and the example carefully before starting.