

LINE / LINE Fukuoka Corporation

Pre-Test

***Please fill in your name and date before start**

First Names: Eric

Last Name: Suwarno

Date: 2017/08/07

Thank you for applying to LINE/LINE Fukuoka Co., Ltd.

When considering applicants for engineering positions, we strive to place an emphasis on their true technical skill, which cannot be determined by their educational background or previous work experience alone. That is why we ask that you take this pre-test after confirming the following notices.

[1] Please answer directly in the body of this file.

[2] Please avoid using the Internet, literary references, etc. to answer the questions.

[3] Please do not disclose the content of this test to others.

Q1

Where n is a positive integer, the function $f(n)$ satisfies the following.

$$f(0) = 0$$

$$f(1) = 1$$

$$f(n) = f(n - 1) + f(n - 2)$$

(1) Please create a program to find $f(n)$. (You can write in any language that you are good at.)

<?php

```
function f($i) {  
    if ($ <= 1) {  
        return $i;  
    } else {  
        return f($i - 1) + f($i - 2);  
    }  
}
```

(2) What is the result of $f(8181)$.

8180

Q2

Please implement a program that lists the nodes of a random binary tree by nodes at the same depth.

```
ArrayList<LinkedList<TreeNode>> findLevelLinkList(TreeNode root) {  
    int level = 0;  
    ArrayList<LinkedList<TreeNode>> result = new ArrayList<LinkedList<TreeNode>>();  
    LinkedList<TreeNode> list = new LinkedList<TreeNode>();  
    list.add(root);  
    result.add(level, list);  
    while (true) {  
        list = new LinkedList<TreeNode>();  
        for (int i = 0; i < result.get(level).size(); i++) {  
            TreeNode n = (TreeNode) result.get(level).get(i);
```

```

        if (n != null) {
            if (n.left != null) list.add(n.left);
            if (n.right != null) list.add(n.right);
        }
    }
    if (list.size() > 0) {
        result.add(level + 1, list);
    } else {
        break;
    }
    level++;
}
return result;
}

```

Q3

(1) Imagine you are playing a board game. You roll a 6-faced dice and move forward the same number of spaces that you rolled. If the finishing point is “n” spaces away from the starting point, please implement a program that calculates how many possible ways there are to arrive exactly at the finishing point.

<?php

```

function factorial($i) {
    if ($i > 1) {
        return $i * factorial($i - 1);
    } else {
        return 1;
    }
}

function findCombination($n, $r) {
    $combi1 = factorial($n + $r - 1);
    $combi2 = factorial($n);
    $combi3 = factorial($r - 1);
    return $combi1 / ($combi2 * $combi3);
}

```

(2) If $n=610$, how many possible ways are there to arrive exactly at the finishing point?

721,299,029,373

Q4

Please tell us about the technologies you frequently use.

| Levels of competency | Name of programming Language(Year of experience)
Example: Java (3years) |
|--|--|
| Most Proficient
(Please give one answer only) | PHP (3 years) |
| Familiar with | PHP, Laravel, CodeIgniter, Ruby on Rails, Django |
| Minimal experience | Django, Spring, Yii2, Django |

| Question | Answer |
|--|--------------|
| On which platform do you have the most development experience (e.g. iOS apps, Android apps, Linux server, Windows server, etc.)? | Linux server |
| On which platforms are you interested in developing (regardless of experience) (e.g. iOS apps, Android apps, Linux server, Windows server, etc.)? | Android apps |

| Category | Example | Your Experience |
|-------------------|---|-------------------|
| Object Containers | EJB, Spring Framework, Guice, Seasar2 | Beginner |
| MVC | Spring MVC, Struts 2, Play, Grails | Beginner |
| ORM | MyBatis, Hibernate | No experience |
| Testing | JUnit, TestNG, Cucumber, Selenium, WebDriver | No experience |
| IDE/Editor | Eclipse, IntelliJ IDEA, vim, Emacs, Sublime Text, Atom, Visual Studio, Netbeans | Medium experience |
| UML/Diagram | Enterprise Architect, Rational XDE, LucidChart | Beginner |

| | | |
|---|--|--------------------------|
| SCM | CVS, Subversion, Git, Mercurial, Perforce, Visual SourceSafe | Medium experience |
| Builds | Ant, Maven, Gradle, Ivy, sbt | No experience |
| CI/Quality | Jenkins, Bamboo, Sonar, CircleCI | Beginner |
| Java Profilers | Eclipse TPTP, YourKit, JProfiler | No experience |
| Web Applications Performance Profilers | JMeter, Grinder | No experience |
| Issue Trackers | JIRA, Redmine, Bugzilla, Trello | Beginner |
| Agile Processes | Scrum, XP, Kanban | No experience |
| Social Coding Code Review | GitHub, Bitbucket, Stash, Crucible/FishEye | No experience |

Q5

Please answer the questions below.

| Question | Answer |
|--|--|
| What specifically do you want to achieve at LINE Fukuoka? | I want to achieve more knowledge for me to be shared in my home country, because the digital ecosystem environment in my home country, Indonesia, is constantly developing, thus needing new knowledges. |
| What kind of Web or smartphone applications are you interested in?
* Please name at least one app that you always use, and at least one that you have found out about within the last year. | Bukalapak, Qlapa |
| List up to 3 kinds of technology you have gotten interested in recently, and why you are interested in them. | RESTful Web Service and Machine Learning grows my interest most, since |
| 1. What is the most technically | 1. The most difficult task to do when developing a |

| | |
|---|--|
| <p>difficult or interesting thing you have experienced in development or programming so far?</p> <p>2. Why did you find it difficult / interesting?</p> <p>3. What was your solution, and how did you implement it? (Please answer in as much detail as possible)</p> | <p>software is when you expect no errors in your code, but found some errors when testing the code.</p> <p>2. Because I feel that what I expect is not accomplished, thus requiring extra effort to make it work.</p> <p>3. Trying another solution, or re-checking the written code are some of the best thing I can do for fixing the error.</p> |
| Public repository URLs (e.g.: GitHub, Bitbucket, etc.) | https://github.com/wjh94 |
| Public social accounts (if applicable; e.g.: Twitter, Facebook, etc.) | https://twitter.com/Wu_JianHua |
| Which 3 technical books or articles have made a big impact on you? | <p>Software Engineering – A Practitioner’s Approach</p> <p>Webapps in Go the Anti Textbook</p> <p>File Upload in Rails with PaperClip –</p> <p>https://scotch.io/file-upload-in-rails-with-paperclip</p> |

Thank you for your time!
