QA Consulting

Pre Assessment Day Pack

ABSTRACT

This document contains tasks and learning objectives that a candidate is required to complete prior to getting invited to an assessment day.

Foreword

400% growth in 2016... 6000 clients... 80% of the FTSE 100... 4th Top Tech Company for Graduates...

QA Consulting has never been a more exciting business to work for, and you can share in our success.

We give Graduates the opportunity to become IT Consultants, working with the latest in demand technologies supporting some of the most recognisable brands and prominent public sector organisations throughout the UK & US.

We carefully research and adopt the hottest technologies. This ensures our Consultants have the best opportunity for a long and successful career in areas including Cyber Security, Big Data, Analytics, Software Development, DevOps, Cloud and artificial Intelligence & Robotics.

“Hard work and fun is at the heart of QA Consulting. Our Consultants go through an intense but rewarding 12-week training programme before hitting the wider industry with their newly acquired skills.

We value our consultants and aim to provide them with the best platform to develop a successful career in technology.”

TONY LYSAK - MANAGING DIRECTOR

Objectives

Prior to attending an assessment day each candidate is requested to complete the following technical exercise. This exercise is used to assess a potential candidate's ability to independently research a technical subject and provide a simple solution. The following instructions provide a guide on how to approach and complete this exercise.

The Exercise is designed to take a maximum of two weeks to deliver if you do not have a technical background, and a maximum of 1 week if you do have a technical background.

RESEARCH

The following topics are to be researched and understood before attempting the technical exercise.

- **Object Orientated Programming (OOP) with Java**
  - Inheritance
  - Encapsulation
- **Basic java programming syntax**
  - Variables
  - Classes
  - Object
  - Methods
  - Conditionals
  - Iteration

Materials

The following resources are recommended for learning basic Java and OOP to complete this exercise:

ONLINE RESOURCES

- **TutorialsPoint**
- **Pluralsight**
- **10 day/200 minute free trial by signing up at website**
  - Free trial can be extended by signing up for a free account and redeeming the 3 month free voucher @ www.visualstudio.com/dev-essentials/
  - The following course is highly recommended to learn basic Java: https://app.pluralsight.com/library/courses/java-fundamentals-language/
- **CodeAcademy**
- **Oracle Java Tutorials**

LITERATURE

- **Head First Java, 2nd Edition**
- **Beginning Programming with Java For Dummies**
- **Both can be accessed by creating a free trail @ https://www.safaribooksonline.com/**

Exercise 1

Define the following key Object Orientated Programming (OOP) principles with examples:

- **Encapsulation**
- **Inheritance**
- **Polymorphism**
- **Abstraction**

These concepts will be discussed further if you are invited to an assessment day.

Exercise 2

QA Cinemas is a well-known company in the Cinema industry that has been running since 1859. Currently the company do all their ticket pricing manually, and therefore, they want to commission an external party to build an electronic system to replace this outdated manual process.

REQUIREMENT

You are required to create a simple prototype cinema system that provide the ability to purchase tickets and return the total price of a customer's order.

Ticket prices for all movies at this cinema are as follows:

- **Ticket prices:**
  - Standard - £8
  - OAP - £6
  - Student - £6
  - Child - £4

QA Cinemas also offers a discount each Wednesday where every ticket is £2 cheaper.

For example, if a family consisting of a standard admission, a student and a child attended an appropriate film showing on a Monday. The program would output something similar to the following:

- **The total cost of tickets for this movie is £18.**

TASK

You are required to create a java project that meets the requirements outlined above. We expect a minimum of 4 classes to be created and for you to utilise the concepts outlined in exercise 1.

Distribution

Both exercises should be submitted on **Github** for review. Exercise 1 can be published as a text file, and exercise 2 by committing the relevant source code to a Github repository. Information can be found at the following URL on how to complete this task: https://help.github.com/articles/git-and-github-learning-resources/

Once this task is finished please share the Github link with the following QA trainer: Elliot.Womack@qa.com