



**Majestic-12 Ltd Applicant Information Pack and Pre-interview Tests**

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Majestic-12 Ltd trading as Majestic

## **Introduction**

Thank you for applying for a position with Majestic. We appreciate the time you have put into your application, please accept our congratulations for proceeding to this stage.

As an applicant, we hope you understand that we can receive a number of applications for any position. As an employer who prides itself on creating “a great place to work”, we try to invest the time to ensure all applicants get an equal chance to demonstrate their suitability for any position. This in turn creates a requirement for a commitment from us to invest a significant amount of time in the recruitment process.

We have therefore created a short test, the results of which will be used in the next tier of selection process. Whilst it is anticipated that you will perform the test yourself, Majestic is very willing to accommodate any individual requirements should a candidate be unable to access a test for any reason – please contact us if that is the case.

You can find the tests in section two of this document. Please answer all questions indicated. A deadline for submission will have been provided to you.

We have also included more information relevant to the recruitment process in section one, please study this information carefully as some may require action on your part.

Please note that any potential offers of employment will be made only in writing and considered speculative until all required documentation, including a contract of employment, has been submitted and agreed by both parties.

Finally,

Good luck with the remainder of the application. We apologise for the continued formality of the recruitment process – our only motivation is to try to achieve a “level playing field” for all applicants.

## **Section One - Company Information and Recruitment Information**

### Recruitment Process.

A summary of the intended recruitment process follows:

1. We review CVs submitted and shortlist for the next phase.
2. A small test exercise is sent to applicants to complete and return.
3. Applicants will then be selected for interview on the basis of work for the “test exercise” submitted.
4. The final decision will be based on a number of criteria relevant to the entirety of the process.

Should an applicant be selected to proceed to interview, we will attempt to negotiate a mutually acceptable time within the timeframes placed upon the business.

More details regarding the interview will be sent to the relevant applicants. The interview will provide applicants with the ability to demonstrate their suitability for the position, and will be structured around:

- The applicants covering letter
- The applicants CV
- Any examples of work provided in support of their application
- Prepared elements – the subject of which will be made available prior to interview

Should, at any stage, insufficient candidates meet the requirements defined for the position, then we may choose to terminate the application process and potentially re-advertise the position.

### Proof of entitlement to work in UK

In keeping with legislation and company policy, all potential employees must present proof of the right to work in the UK prior to employment commencing. Successful applicants will be asked to attend a pre-employment meeting, when we would appreciate it if the relevant qualifying document(s) can be presented.

The legislation is slightly complex, but the current documents which can prove the "right to work" can be found in the sections following the title "LIST A DOCUMENTS WHICH PROVIDE AN ONGOING EXCUSE" in the pdf linked to below:

<https://www.gov.uk/government/publications/acceptable-right-to-work-documents-an-employers-guide>

## **Section Two – Applicant Tests**

This section consists of a number of tests. Each test may contain one or more questions. Please answer all questions within each test.

It is anticipated that any test should take no longer than two or three hours to complete. All aspects of your response may be assessed in terms of selecting candidates to go forward to interview. The most important thing is to attempt the quiz – if it looks difficult take a guess or two, have a go and send it in – we can assess partial answers much better than a lack of response and how you think is as important to us as the answers you give.

## Test A – Template Toolkit and Catalyst – Two Questions.

On the Majestic website, amongst many other technologies, we use a technology called Template::Toolkit. You can read more about Template::Toolkit here:

<http://template-toolkit.org/>

Template Toolkit separates the web pages, which can be produced in a modified form of HTML, from the rest of the program code which is written in Perl and C#. We use a framework called Catalyst which enforces a separation of Model, View and Controller, often called Web MVC

Template Toolkit performs a selection of “mail merge” type functions on html templates.

Given the following data specified in a catalyst action:

```
$c -> stash -> {"Party"} = "World";
```

Some configuration, and the following template file:

```
<html>
  <head>
    <title>Greeting Page</title>
  </head>
  <body>
    <h1>Hello [% Party %]</h1>
  </body>
</html>
```

A web page with a level one heading containing the text “Hello World” will be produced.

### Question 1

For the terms “Model”, “View”, and “Controller”, choose which of the following three phrases best applies:

- a) Where all the business logic should reside
- b) Handles the conversion of user input into calls to the business logic
- c) Returns the webpages to the client.

### Question 2

Create a template file similar to the one used in the example above, which for the following data, uses Template Toolkit ( and the FOREACH block directive ) to create an html table displaying a list of shoe model, makes, and sizes.

```

$c -> stash -> {"Shoes"} = [
  {
    Model => "Aggressor",
    Make => "Shoe Co.",
    Size => "10"
  },
  {
    Model => "LookinGood",
    Make => "Shoe Co.",
    Size => "12"
  },
  {
    Model => "PowerStrike",
    Make => "Footware Inc.",
    Size => "7"
  },
  {
    Model => "RunFast",
    Make => "Footware Inc.",
    Size => "6"
  },
  {
    Model => "RunFast",
    Make => "Footware Inc.",
    Size => "8"
  },
  {
    Model => "Lounger",
    Make => "Comfy Shoe Ltd.",
    Size => "9"
  },
  {
    Model => "Lounger",
    Make => "Comfy Shoe Ltd.",
    Size => "7"
  },
];

```

## Test B – Data Visualisation – 1 Question

There are many ways of visualising data. At Majestic we have lots of data, and wish to visualise it better in the future.

### Question 1

Create a program in one of the languages listed below to display the Top 10,000 domains in the Majestic Million (attached as majestic\_10000.csv) in an interesting way. You don't have to use the whole file, but any adjustments should be justified.

Permissible languages:

Perl, Python, Ruby, C#, JavaScript, java And any popular open source third party library

Attach the program source code and the diagram produced in your answer:

## Test C – Adapting Code and overcoming fear – 1 Question

In this post, we want you to produce a variation of a force-directed graph for some link data seeded from the domains from some academic institutions in the UK.

Using the code available here:

<http://bl.ocks.org/mbostock/4600693> ( Attached as the file CurvedLinks.html )

And the JSON file provided ( domainlinks.json ) containing the link data seeded from the domains from some academic domains in the UK.

Produce a graph using the data file we provide. Explain any modifications you make to the source code, and include an image of the graph produced.