

Majestic Applicant Tests

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1 Test A - Template Toolkit and Catalyst

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.

1.1 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.

1.2 Answer

- a) **Model**
- b) **Controller**
- c) **View**

1.3 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'
  },
];

```

1.4 Answer

```

<table style="width:100%">
%% FOREACH shoe IN [% Shoes %]
  <tr class="model"> [% shoe.Model %] </tr>
  <tr class="make"> [% shoe.Make %] </tr>
  <tr class="size"> [% shoe.Size %] </tr>
%% END
</table>

```

2 Test B - Data Visualisation

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

2.1 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 dont 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.