



**MODULE:  
ADVANCED JAVA**

**ASSIGNMENT TITLE:  
HOME IMPROVEMENTS**

**DECEMBER 2009**

**Important Notes:**

- ❖ Please refer to the Assignment Presentation Requirements for advice on how to set out your assignment. These can be found on the NCC Education *Campus*. Scroll down the left hand side of the screen until you reach Personal Support. Click on this, and then on Policies and Advice. You will find the Assignment Presentation Requirements under the Advice section.
- ❖ You must familiarise yourself with the NCC Education Academic Dishonesty and Plagiarism Policy and ensure that you acknowledge all the sources which you use in your work. The policy is available on *Campus*. Follow the instructions above, but click on Policies rather than Advice.
- ❖ You must complete the ‘**Statement and Confirmation of Own Work**’. The form is available on the Policies section of *Campus*. Scroll down the left hand side until you reach Personal Support. Click on this and then click on Policies and Advice.
- ❖ Please make a note of the recommended word count. You could lose marks if you write 10% more or less than this.
- ❖ You must submit a paper copy and digital copy (on disk or similarly acceptable medium). Media containing viruses, or media which cannot be run directly, will result in a fail grade being awarded for this module.
- ❖ All electronic media will be checked for plagiarism.

**Marker's comments:**

**Moderator's comments:**

**Mark:**

**Moderated**

**Final**

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## Introduction

*THREE D's* is a company that owns a chain of Home Improvement and DIY stores that have branches throughout the country of Datalia. It markets a range of goods from plumbing materials, timber, tools to complete kitchens, carpets, decorating materials, in fact anything that could help to improve the home.

At this time *THREE D's* has a very inadequate Web site to advertise its business.

The management has decided to commission a new web site and has produced an outline specification:

“The Web site must include the following features all of which must be easily updateable by designated maintenance personnel:

- A directory giving the location of all the stores throughout the country. Each directory entry must include the address of the store, web pages specific to the store, map of the location of the store.
- A directory detailing the details of all products marketed by the company listed in category groups (e.g. gardening equipment, power tools). However, not all stores will stock all products hence the directory entries will have to cross reference to particular stores. All goods are to be priced but, of course, this data must be easily updateable.
- A facility whereby statistics relating to the hits on the web site are recorded, for example, the geographical distribution of interest shown in the various stores.
- A facility for a potential customer to send emails to the managers of individual stores. All such emails to be stored, a fact about which the intending sender must be informed.

**Note:** that at this time we do **not** have firm plans to provide online ordering via the web site.”

## Aim

To develop a working prototype of the system as defined so far by *THREE D's* using the facilities of the Java programming language.

To do this you will need to design and implement a sample system around:

- Four categories of goods
- Three stores.

The system will be driven by a suitable database that you will have to design and populate with suitable dummy test data. Note that with all such prototypes the test data must be comprehensive but not exhaustive.

The user view of the system will be a number of interacting and interactive Java Server Pages.

It is critical that data validation and error trapping is comprehensive.

## Task 1 – 25 Marks

Design suitable Java Server Pages to meet the requirements of the outline specification above. Pay particular attention to the design of the home page.

Include in your design the algorithms required for:

- Comprehensive data validation
- The means of navigation between the pages
- Collecting the pages hit information and email enquiries

### **Task 2 – 10 Marks**

Design the user interface by which the information that drives the system can be updated by authorised personnel only.

### **Task 3 – 15 Marks**

- Design the database required to drive the user options provided by your design in Task 1.
- Set up the structure of this database using Microsoft Access or SQL Server.
- Design suitable test data and use it to populate the database that you have just set up.

### **Task 4 – 5 Marks**

- Design the database required to collect the Web pages hit information and email enquiries.
- Set up the structure of this database using Microsoft Access or SQL Server.

### **Task 5 – 35 Marks**

Implement and test the designs you detailed in Task 1 and Task 2.

### **Task 6 – 5 Marks**

Produce a report of system testing of the completed prototype. This report must contain relevant screen shots.

### **Task 7 – 5 Marks**

Produce a working copy of a compiled version of the completed system together with some installation notes.

This working copy should be on an appropriate medium (DVD, CD-ROM etc.). The installation notes should include the system requirements e.g. the operating system.

## **Guidance**

The assessment of your project will to a large extent depend upon the quality of the documentation that you have produced. Thus, for **each stage** of the development of software:

- Give a detailed design including, where appropriate, the design of any algorithms.
- Build in error handling to involve meaningful messages that would ease any future maintenance of the software.
- Annotate all implementation.
- Design a testing strategy.
- Justify the design of suitable comprehensive test data.
- Show evidence of testing.
- Where appropriate, detail any major remedial action that you have taken in the light of the testing process.

In addition produce evidence that the user interface is likely to be understood by users.

For the completed project:

- Evidence of the testing of the project as an integrated piece of software.
- A short installation guide to include hints on troubleshooting.

## **Submission Requirements**

A word-processed document incorporating the full documentation of each of the **SEVEN** Tasks detailed above.

Refer to the Guidance Notes above when producing your final documentation.

Note the requirement in **Task 7** to submit a working copy of the compiled software.

### **Warning: All media must be virus free!**

Media containing viruses, or media which cannot be run directly, will result in a FAIL grade being awarded for this module.

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your assignment.**