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P R E S E N T A T I O N

W1

Wednesday, Dec 6, 2000

The ABC of e-Testing

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1-2-3 of e-Commerce Testing

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How can
Automated Software Testing
make you more attractive to the
opposite sex...?

GRESHAM



GRESHAM

For Further Information Please See our Website...

<http://www.company.com>

Netscape



Netscape is unable to locate the server www.company.com.
Please check the server name and try again.

OK

1
AVAILABILITY =
SiteCheck

➤ *Site Availability*

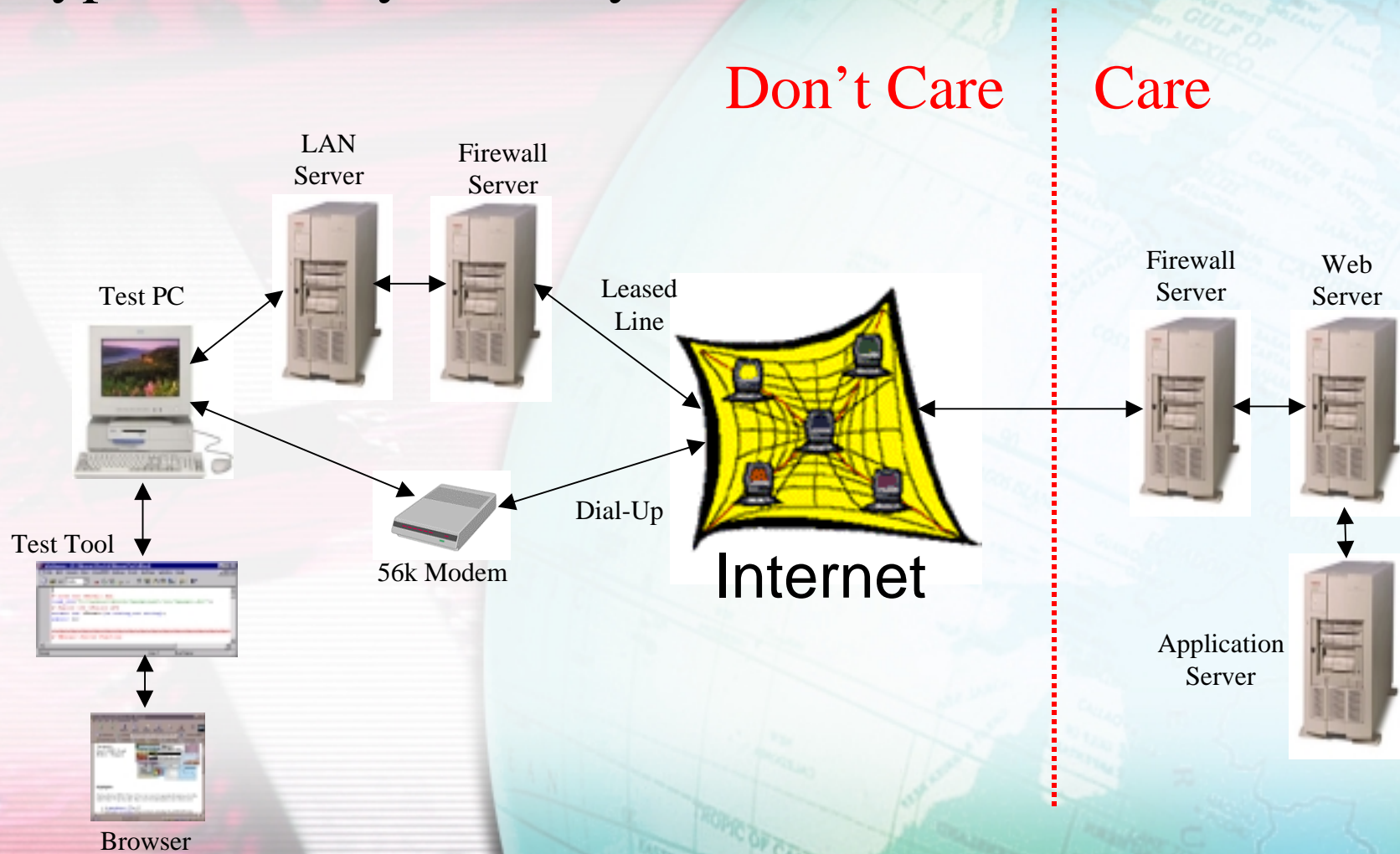
- Immediate Faults
 - ◆ Instantly Recognised Problems
- Timed Faults
 - ◆ Acceptable Thresholds

➤ *Immediate Faults*

- The Page didn't download. Why?



Typical Test System Layout



➤ *Points of Failure*

- Test System (TS) Software
- Test System Hardware
- Test System Network
- Test System Connection
- External Network / Internet Nodes
- Internal Network - Firewall
- WebServer
- Application Server

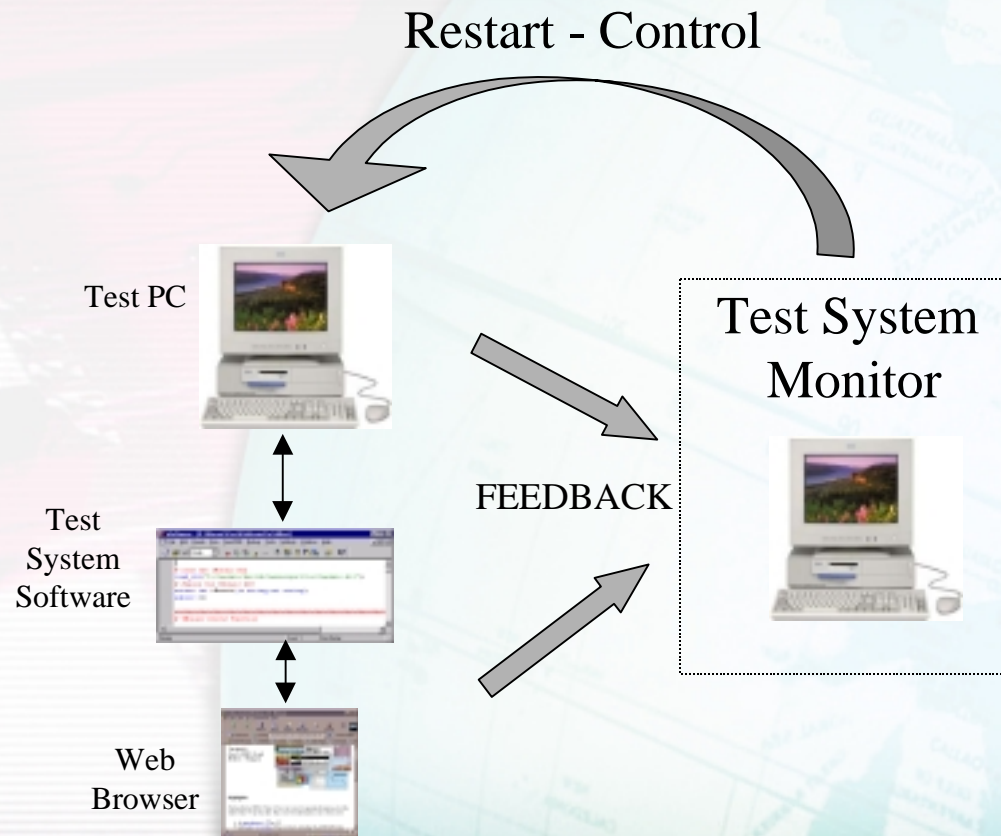
➤ *Test System Software Faults*

- Operating System
- Automation Tool
- Browser
- Notification Software - E-Mail / SMS Engine / Pager Engine
- Other Components

➤ *Test System Hardware Faults*

- Local Power Supplies / Local Electricity Company
 - ◆ UPS Systems
- PC
- Modem
- Local Phone System / BT

➤ *“Who Watches the Watchmen?”*



➤ *Test System Network Faults*

- LAN Connection - High Speed Lease Line Connection

- ◆ Local Network Nodes

Scheduled and Unscheduled availability

- ◆ Leased Line, Load

- Dial-UP

- ◆ ISP

- ◆ High Load on ISP - Example: Screaming.net

1 in 10 Connections Failed

90% Dropped whilst Connected

➤ External Network / Internet Faults

- Typical National Route:

15 Nodes

duncanb

Woking01-lan.gresh.com [192.168.154.254]

warsash03-wan.gresh.com [192.168.131.1]

Firewall01-155.gresh.com [192.168.155.252]

Firewall-163.gresh.com [194.216.163.238]

gw4.rea1.gbb.uk.uu.net [158.43.211.4]

fddi0-0-0.cr2.rea1.gbb.uk.uu.net [158.43.210.2]

pos0-2.cr1.lnd4.gbb.uk.uu.net [158.43.254.29]

pos0-0.cr1.lnd8.gbb.uk.uu.net [158.43.254.53]

fe0-0-0.br1.lnd8.gbb.uk.uu.net [158.43.188.69]

195.66.224.11

core1-pos11-0.ealing.bt.net [194.74.65.26]

highspeed1-FE-0-0-0.ealing.bt.net [194.72.9.133]

194.74.72.10

209.10.20.182

209.10.20.150

UKPlus - Responsibility { **www.ukplus.co.uk** [212.111.44.194]

- Dial-up Route is Different

➤ *The Bit that WebMasters Care About...*

- Firewall Server Faults

- WebServer Faults
 - ◆ Hardware
 - ◆ Software

- Application Server Faults
 - ◆ Operating System
 - ◆ Application
 - ◆ Data Server

➤ *How does a Test System differentiate between errors?*

- Knowledge of the Process
 - ◆ At What point was data lost?
 - ◆ Why was data lost?

- Capture Errors - Notify Person Responsible
 - ◆ Test System Owner
 - ◆ WebMaster

➤ *Timed Faults*

- The Page didn't download quickly enough...
 - ◆ Set timing thresholds based on Network Conditions and Service Level Agreements
 - ◆ Where is the Data Bottle-neck?
Again - Knowledge of Process
 - ◆ When to Notify the WebMaster?

➤ *Definition of Fully Downloaded?*

- Not Always as simple as “Done...”
 - ◆ Page Referrals
 - ◆ JavaScript
 - ◆ Video / Audio Sources
 - ◆ Streaming Video?!

➤ *Download Thresholds*

- Set timing thresholds based on Network Conditions and Service Level Agreements.
- Where is the Data Bottle-neck?
 - ◆ Again - Knowledge of Process.
- When to Notify the WebMaster?

2





yup...you're breaking
up...I'm on my
mobile!

Visual Languages and Visual Programming, list of updates for 1996 - Microsoft Internet E...

File Edit View Go Favorites Help




Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen

Links Customize Links Address http://cuiwww.unige.ch/eao/www/Visual/VP.96updates.html

September 26, 1996

- updated the link to [TVL96 on-line info](#), and added a link to its [list of accepted papers](#).
- started listing on-line proceedings in the *Bibliography* section

September 24, 1996

- extensive link checking, marking  links with a  icon and correcting  other links.
- split the *Related lists and WWW resources* section into two parts: *Related lists and information sources* and *Various resources*.

Internet zone

2

Integrity =
LinkCheck

➤ *A WebSite is a Single Coherent Presentation of Information*

- Internal Integrity

 - ◆ Internal Links

- External Integrity

 - ◆ External Links - Outside your Domain

 - External Information Sources**

 - Partners**

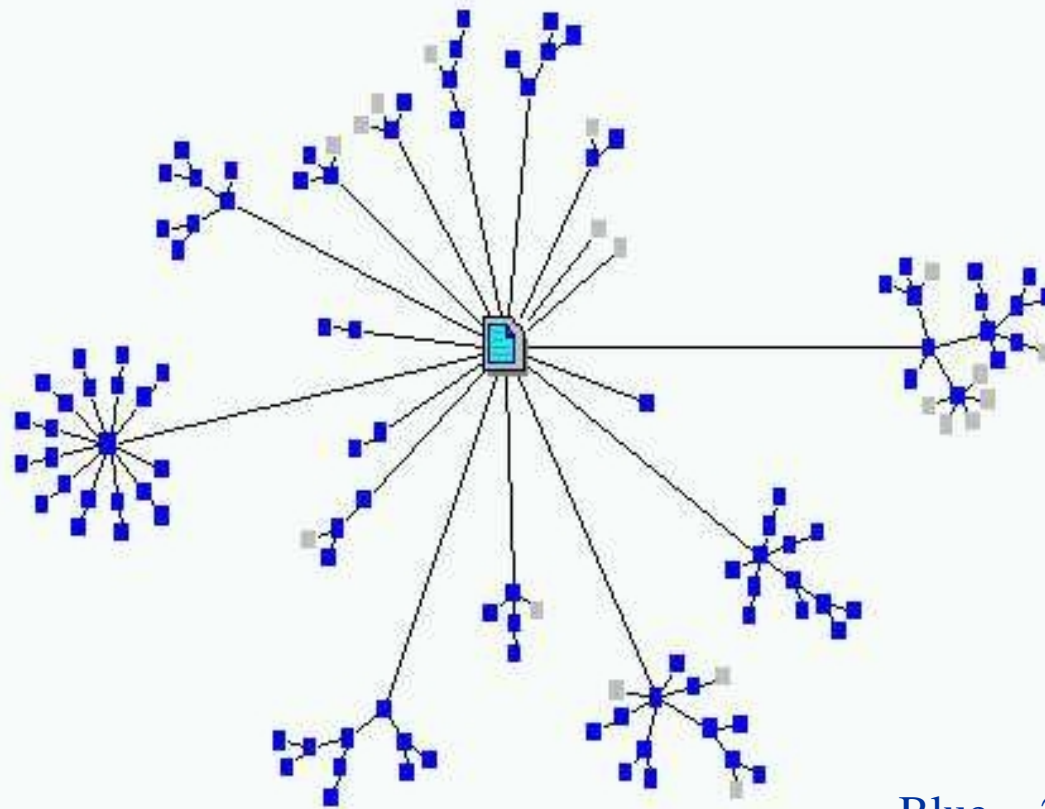
 - Advertisers**

Integrity - LinkCheck

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www.simgroup.co.uk

173 Links



Blue = 2+ Links

➤ ***www.btinternet.com***

- 19,000+ Links

➤ ***How can you map your site?***

- Linkbot
- Astra Sitemanager
- WebTrends
- LinkCop

➤ ***Use the Information & Treat Each Link as a separate WebSite***

- Issues are the Same as Sitecheck

3



argos Shopping - Microsoft Internet Explorer

File Edit View Go Favorites Help

Back Forward Stop Refresh Home Search Favorites History Channels Fullscreen Mail Print Edit

Address &prod_id=&brand=argos&link_id=&domain=&zone_id=&mssc_sid=XRPM71DUUSS12HE600AKHC3M76SD4RSQ

Argos go shopping shopping bag online help store services store finder whats new

sound & vision

Sony KV14T1 Fastext CTV



V34cm screen (14 ins model). Fastext. Black Trinitron screen. Auto set up. Auto tuning. Sleep timer. Front AV socket. Headphone socket. SCART socket. Simple menu system. 60 channel tuning. Tilt and swivel base. Remote control (batteries supplied). Size (W)38, (D)41, (H)39 cm. In order to ensure satisfactory text reception it is recommended that this item is used in conjunction with an external aerial.

Catalogue Number - 530/8082

Price £ 3.00

Please Select Quantity

add to bag

Done Internet zone

3

Functionality =
tMosaic

➤ *What does a Test System need ?*

- Dynamic Websites = Dynamic Test Systems
 - ◆ Flexibility
 - ◆ Adaptability
- 24x7 Availability = 24x7 Testing
 - ◆ Automation is the only way...
- Table Driven Testing

➤ *The Evolution of Automation...*

- Record/Play-back
- Raw Scripting
- Data Driven Testing
- Table Driven Testing

➤ *All have Pro's and Con's*

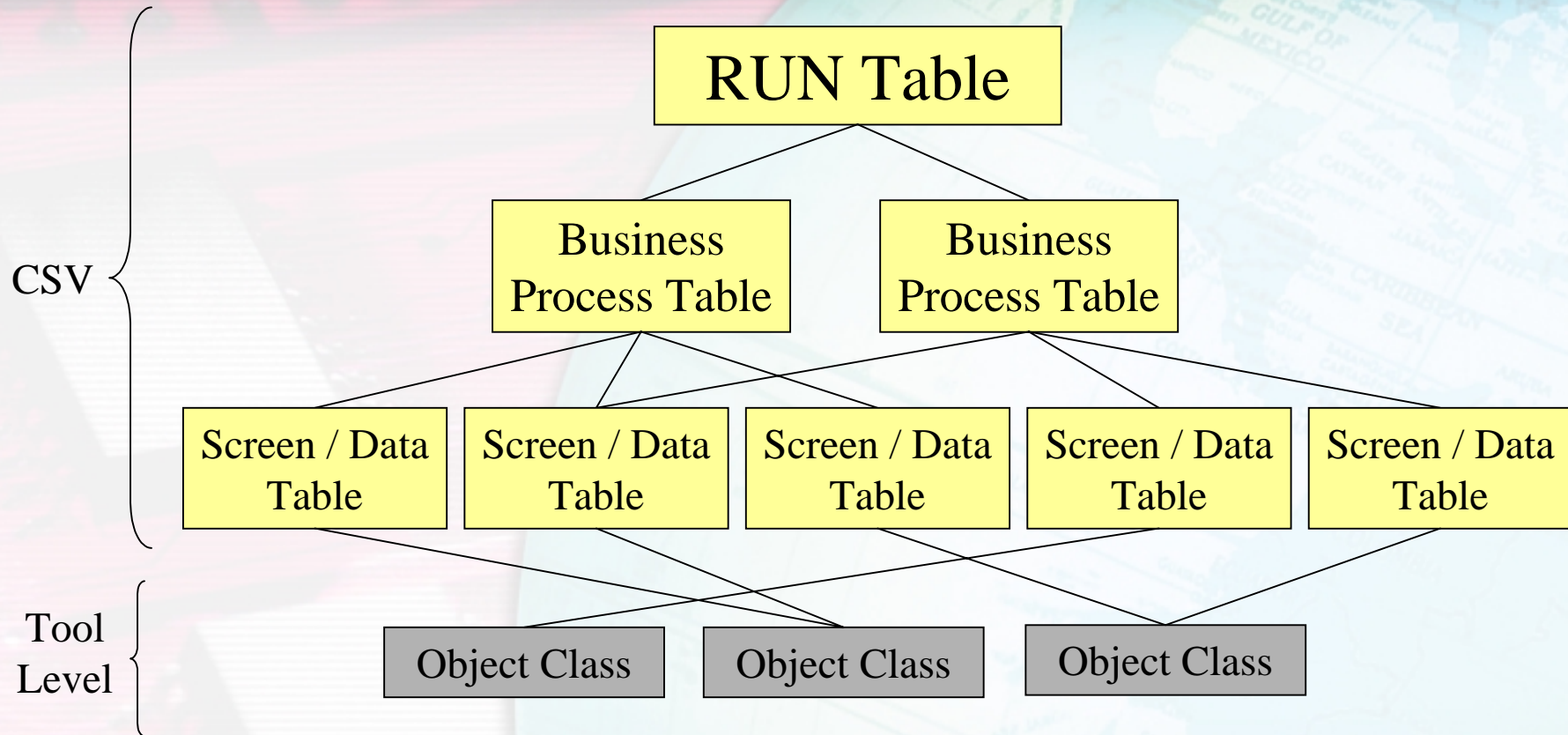
➤ *tMosaic - What is it?*

➤ *What is tMosaic?*

- Testing Methodology based on Table Driven Testing
 - ◆ De-Composition of Business Processes into Re-Usable Components
 - ◆ Analogous to Top Down / Bottom Up Programming in AD but without the Code!
- Tool based Framework to support the Methodology
- Promotes Re-Use
 - ◆ Dynamic
 - ◆ Flexible

Functionality - tMosaic

tMosaic - Table Hierarchy



➤ ***Large Quantities of Data***

- Manage Centrally for all three
 - ◆ Availability, Integrity, Functionality

➤ ***Natural Solution - RDBMS***

- Manage and Archive Large Quantities of Data
- Flexible Querying of Results

➤ ***Management Information***

- Charts - Ad-Hoc
- High Level Reporting - Daily/Weekly/Monthly/Yearly

1-2-3

Availability

Integrity

Functionality

➤ *Continuous Testing on 3 levels*

- 1 Availability - SiteCheck
- 2 Integrity - LinkCheck
- 3 Functionality - tMosaic

The 12 Commandments

GRESHAM



1. *Speed and performance*
2. *Access and availability*
3. *Up to date and accurate information*
4. *Responsiveness visible and apparent*
5. *Tracking of the business conducted*
6. *Customer service is consistent*
7. *Feedback channels work*
8. *Search and intuitive menus*
9. *Real time processing when beneficial*
10. *Verification of business terms*
11. *Presentation and usability*
12. *Security of site, function and data*

The Twelve Commandments

GRESHAM

AVAILABILITY



1. *Speed and performance*
2. *Access and availability* ✓
3. *Up to date and accurate information*
4. *Responsiveness visible and apparent*
5. *Tracking of the business conducted*
6. *Customer service is consistent* ✓
7. *Feedback channels work*
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The Twelve Commandments

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INTEGRITY



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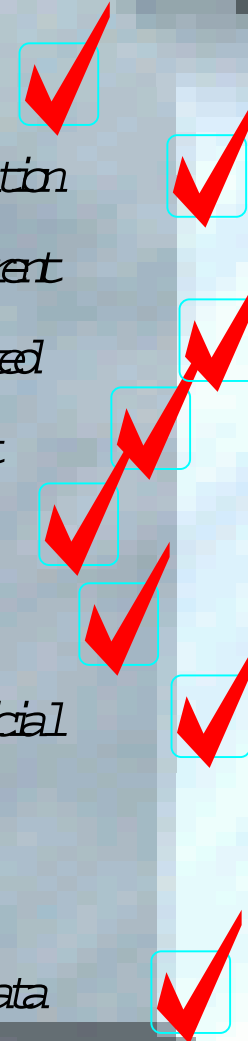
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GRESHAM

FUNCTIONALITY



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Wednesday 6 December 2000

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The ABC of e-Testing

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Duncan Graduated with Honours in Computer Science from Warwick University and joined IBM's Global Services Department. He worked as an analyst programmer and information systems consultant with them for three years before joining the SIM group as a test automation consultant. Since working at SIM he has designed and successfully implemented automated test systems for a wide variety of clients in industry sectors ranging from Banking to Health-care. More recently he has been involved in the testing and automated testing of SIM's ecommerce customers. Duncan has presented at various testing events such as the BCS SIGIST Meetings.

