Coursework Task

Higher Information Systems

Valid for session 2010/2011 only

Please read Section I carefully before issuing materials to candidates.

Coursework Task

Subject: Information Systems

Level: Higher

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Contents

Section 1

Organisation and Conditions for Assessment

Organisation and Conditions for Assessment

The assessment is designed to test the candidate's ability to apply knowledge and understanding and practical skills, developed through study of the Relational Database Systems and Using Information Units. The mark out of 60 should be submitted to the SQA unscaled. This will be combined with the examination mark out of 140 to establish the candidate's overall grade of award. This mark should also be used in conjunction with internal examination marks or other evidence in the preparation of a candidate's estimated grade of performance.

The notional design length for the assessment is 8–10 hours. However, a candidate may be permitted additional time if required.

The assessment is to be undertaken under "open book" conditions, but under the supervision of a teacher or lecturer to ensure that the work submitted is the candidate's own work. The teacher or lecturer may give the candidate guidance and/or help if requested. Any such help should be reflected in the marks awarded. Once the task has been completed and marked, it should not be returned to the candidate for further work.

These instructions are designed to be used in conjunction with data files provided with the electronic distribution of the task. These can be downloaded from the SQA secure website.

Two versions of a database are being supplied this year. It is essential that candidates are issued with the correct version at the appropriate times. They must not be given access to the second version until they have submitted answers to prior tasks.

Special Arrangements for Higher Coursework 2010-2011

Centres are asked to pay special attention to the following arrangements.

Candidates are not required to spend time entering data into a database. Instead, the data should be prepared beforehand and provided to candidates by the centre.

To facilitate this, Microsoft Access (2003 format) and Filemaker (v.7) files as well as a text (tab) delimited file have been provided. It is intended that candidates will be provided with **two versions** of the database.

The **first database** contains three of the tables of the system; Venue, Band and Promoter. Each table will have all attributes correctly implemented although the tables will not be related. Candidates will be required to create the Gig table from the completed data dictionary and then set up the relationships between all the tables. Candidates will be required to submit a printout of the Documenter (or equivalent) of the **Gig table only** as evidence for Task 2(a). Evidence for Task 2(b) could be generated from the Documenter again (selecting only Relationships in the options) but the evidence must show three correct one-to-many relationships. Candidates will **not** use their database structures to complete Tasks 3-5. Instead, centres should issue candidates with the second, fully populated database.

The **second database** will be a complete implementation of the system. This will include all validations, relationships etc – ie an exact implementation of the data dictionary provided to candidates at Task 2. This working database should be issued to candidates **after** Task 2 has been submitted. Candidates **must** use this working database to complete Tasks 3-5.

Microsoft Access and Filemaker files are provided. Centres using other systems will require to create both versions of the database from the tab separated file provided. This file can also be used if centres encounter any difficulties with the supplied Access or Filemaker databases.
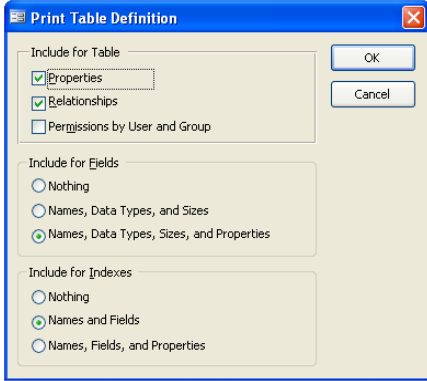
Additional notes follow which detail how candidate evidence is to be generated.

Notes:

Candidates should be given a copy of the marking grid from Section 3 (**not** the detailed marking instructions) before starting the task so that they are aware of the mark distribution for each part.

The entire Coursework Task consists of six tasks. Centres should take note of the points detailed below for each task.

Task	Evidence
1	Hardcopy of proforma provided or can be produced by the candidate. **Task 1 must be completed and data dictionary handed in for marking before the materials for Task 2 are issued**.
2 (a)	Documenter (MS Access) printout or equivalent showing table structure for the Gig table only – ignore "Format" for marking purposes.
2 (b)	Printout showing correct cardinality of relationships (Documenter in Access can be used to produce **only** the relationships information through the options). o In FileMaker Pro8, to get a printout of the design, candidates should adhere to the following instructions. (1) Select the "Define" option from the File menu and then select the "Database" option from the sub-menu. (2) Click on the Tables tab. (3) Highlight both tables by clicking on the name of the first table then holding down the shift key and clicking on the other table. (4) Click on the Print button. o In MS Access, to get a printout of the design, candidates should adhere to the following instructions. (1) Select the "Analyze" option from the Tools menu and then select the "Documenter" option from the sub-menu. (2) Select the table(s) required and then click Options button. (3) Make sure that the following options are checked/selected: • Include for Table ➢ Properties ➢ Relationships • Include for Fields ➢ Names, Data Types, Sizes and Properties • Include for Indexes ➢ Names and Fields (4) Required table design is displayed on screen and can be printed.

Print Table Definition

Include for Table
☑ Properties
☑ Relationships
☐ Permissions by User and Group

Include for Fields
○ Nothing
○ Names, Data Types, and Sizes
◉ Names, Data Types, Sizes, and Properties

Include for Indexes
○ Nothing
◉ Names and Fields
○ Names, Fields, and Properties

OK
Cancel

Task 2 (b) also requires a printout or hardcopy of the relationships.

o   Printing Relationships in FileMaker 8.

(1)   Select the "Define" option from the File menu and then select the "Database" option from the sub-menu.

(2)   Click on the Relationships tab then click on the Print button.

o   Printing Relationships in Access

(1)   Open the Relationships window.

(2)   Select the "Print Relationships" option from the File menu.

3	Printout of report.
4	Printout of report and printout of screenshots showing two sorts.
5	Hardcopy that clearly shows use and details of macro or script (again, available through Documenter in Access – simply change options in dialogue box).
6(a)	Printout of style definitions.
6(b)	Brochure
6(c)	Printed 8 page brochure. Screen shots with style area or equivalent to show applied styles.

Section 2

Coursework Task

Coursework Task: GoToGigs

Higher Information Systems Coursework Task 2010-2011

Background

GoToGigs is an organisation that owns and manages a number of concert venues throughout Scotland. They have venues in Aberdeen, Dundee, Edinburgh and Glasgow. All venue details are stored as part of a relational database in a table called **Venue**. Venue names are unique. As well as the venue name and address, the following details are stored:

- Seating Capacity (between 1,000 and 12,000)
- Hire Cost (between £750 and £9,850)

Promoters of bands register with GoToGigs and their contact details are stored in a **Promoter** table. Promoters are allocated a unique ID. Promoters charge each band they represent a fixed commission fee for every gig they book, based on a percentage of ticket sales. No promoter charges more than a 10% fee.

Bands are represented and managed by promoters. A band can only be managed by one promoter, although the same promoter can be responsible for many bands. The details of the bands that each promoter represents are stored in a **Band** table. Band names are unique.

When a promoter wants to arrange a concert for one of the bands they represent they negotiate with GoToTickets to decide which venues will be played, which dates will be played, the price of tickets etc. Tickets are priced between £15 and £65. No venue can host more than one band on any given date. These details are stored in table called **Gig**.

Bands, promoters and customers attending concerts frequently make requests to GoToGigs for specific information.

GoToGigs use a relational database to manage this information.

The relational data model is shown on the next page.

Entities

The resulting data model is shown below where primary keys are shown in **bold and underlined**, while asterisks (*) indicate foreign keys.)

Promoter   (**Promoter ID**, PromoterName, PromoterPhone, CommissionRate)

Band   (**BandName**, NumberofMembers, YearFormed, PromoterID*)

Venue   (**VenueName**, VenueAddress, VenueCity, SeatingCapacity, HireCost)

Gig   (**VenueName***, **Date**, BandName*, CostPerTicket, TicketsSold)

The entity-relationship diagram for the system is shown below.

```
┌───────────┐      ┌───────────┐      ┌───────────┐      ┌───────────┐
│ Promoter  │─────<│   Band    │─────<│    Gig    │>─────│   Venue   │
└───────────┘      └───────────┘      └───────────┘      └───────────┘
```

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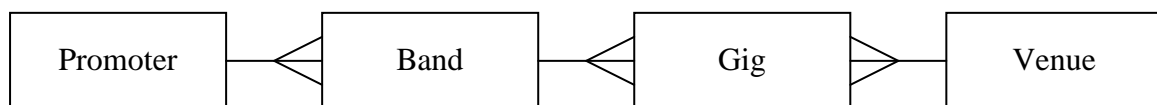
A data dictionary has been produced prior to implementation in a relational database. Part of this is shown below.

Data Dictionary

Entity	Attribute	PK/ FK	Data Type/Size	Unique	Required	Validation	Format
Promoter	PromoterID	PK	Number	Y	Y		
	PromoterName		Text (20)	N	Y		
	PromoterPhone		Text (15)	Y	Y		
	CommissionRate		Number	N	Y	<=0·10	
Band	BandName	PK	Text (30)	Y	Y		
	NumberofMembers		Number	N	Y		
	YearFormed		Number	N	Y		
	PromoterID	FK	Number	N	Y	Lookup from Promoter	
Venue	VenueName	PK	Text(20)	Y	Y		
	VenueAddress		Text (40)	Y	Y		
	VenueCity		Text (15)	N	Y		
	SeatingCapacity		Number	N	Y	>=1000 and <=12000	
	HireCost		Number	N	Y	>=750 and <=9850	
Gig	VenueName			N	Y		
	Date		Date	N	Y		
	BandName			N	Y		
	CostPerTicket		Number	N	Y		
	TicketsSold		Number	N	Y		

	Task	Evidence Required
1	Your teacher/lecturer will provide you with a partially completed data dictionary for the Gig table. Using the background information provided, complete the data dictionary for the Gig table by making appropriate entries in the shaded areas as indicated.	Completed data dictionary (Proforma 1)

You must now submit your answer to Task 1 to your teacher/lecturer.

Before attempting the tasks in this section ask your teacher/lecturer for a <u>completed data dictionary</u>.

You will also need access to pre-prepared database tables.

You **MUST** complete tasks in the sequence indicated.

Task			Evidence Required
2		Database tables have been created for the Venue, Promoter and Band tables.	
	(a)	Using the completed data dictionary issued by your teacher/lecturer, create the Gig table. You should pay particular attention to: • data type (text size) • required • validation • primary and foreign keys	Hardcopy (printout or screenshots) of table structure including field types, validation checks etc.
	(b)	Set up/edit the relationships between all the tables as indicated by the entity-relationship diagram.	Hardcopy (printout or screenshots) of relationships between tables – **evidence must show correct cardinality**

You must now submit all hardcopies for Task 2 to your teacher/lecturer.

Ask your teacher/lecturer for the <u>complete</u> database. This database must be used to carry out Tasks 3-5.

A music magazine had made a request for information from GoToGigs concerning the popularity of venues for concert goers. They wanted to publish a list of the most popular cities in terms of total number of tickets sales. GoToGigs prepared the following report.

Tickets sold by City

VenueCity	Total number of tickets sold
Edinburgh	162098
Glasgow	143575
Aberdeen	96879
Dundee	80880

The magazine now wants a similar list but this time it should show the **total revenue** generated by ticket sales for each city. The list should be ordered from the city with the largest revenue. The revenue is calculated as the sum of tickets sold multiplied by the cost per ticket.

Task		Evidence Required
3	Using appropriate database functions, create a report that displays the total revenue generated by gigs played at each of the four cities. The report data should be ordered with the city with the biggest revenue first. Your report should include only the name of the city and the total amount of revenue generated. The revenue should be displayed in currency format.	Printout of report/layout

GoToGigs have been monitoring which of the promoters has been arranging the most concerts and created the report shown below.

Total Gigs by Promoter

PromoterName	Total gigs arranged
Emma Domineche	8
Gordon Neil	15
Iain Allan	16
Liz Laird	9
Mary Hughes	22
Sean Stevens	10

They have decided that the report does not provide enough detail and have asked you to improve the information shown by displaying a breakdown of how often each promoter arranges gigs in each of the four cities. A sample layout has been provided below.

Promoters gigs by City

Promoter	Emma Domineche	City	Gigs
		*******************	**
		*******************	**
		*******************	**
		*******************	**
		Total Gigs	**
Promoter	Gordon Neil	City	Gigs
		*******************	**
		*******************	**
		*******************	**
		*******************	**
		Total Gigs	**
Promoter	Iain Allan	City	Gigs
		*******************	**
		*******************	**
		*******************	**
		*******************	**
		Total Gigs	**

Task		Evidence Required
4	Create a report as follows: • Show, for each promoter the number of gigs they have arranged in each of the four cities. • The data for each promoter should be arranged with the city booked most often first. • Where two or more cities have been used the same number of times they should be also sorted. • Include the promoter name, the name of each city, the number of times each city has been used for gigs and the total number of gigs for each promoter.	Printout of report/layout (no requirement for report to be sorted by Promoter)

GoToGigs think it would be helpful to be able to view a list of gigs that are on at each venue. They have decided to create a Venue Selector form/layout where each venue is listed. When a specific venue is chosen the Venue select screen closes and is replaced by a list of all gigs at the chosen venue. The list of gigs also includes a link back to the Venue Selector screen, as is shown in the 2 sample screens below using "The Shack" venue as an example.

Fig (a) Venue Selector Form   Fig (b) Gigs at chosen venue

Task		Evidence Required
5	Your GoToGigs database already includes the Venue Selector form shown in Fig (a) above. Choose **one** venue and create, using a macro or script, a navigational link to a separate form/layout that shows only the gigs from that venue, as shown in Fig (b). **Do not include** the TicketsSold attribute. Include on this form/layout a link back to the Venue select screen, again through the use of a macro or script. **Each navigational link should close the current form/layout and open the selected form/layout.**	Printout of report/layout Printout of macros/ scripts used to control navigational features

GoToGigs want to create a brochure about their company. The brochure will have eight pages.

It will contain a cover page, a contents page, details about the company, information pages about the venues in each city and a summary of events for upcoming months.

The brochure design is shown in the style required in Appendix 3 and the specification of each page is shown overleaf.

GoToGigs use their own house style on all printed documents. You must implement this house style in the brochure.

- **Style 1: Main Text**
  - Any serif font, 12 point, plain style, text colour black, line spacing 1.5
- **Style 2: Heading 1**
  - Any sans serif font, 18 point, plain style, text colour red
- **Style 3: Heading 2**
  - Same font as style 2, 14 point, italic style, text colour red
- **Style 4: Table text**
  - Same font as style 1, 10 point, plain style, text colour black

Your teacher/lecturer will issue the text required for the brochure and the images required for the cover page and watermark.

You must create the brochure to the supplied specification and print a copy. You should also provide evidence of implementing the house style.

Brochure Specification

Page	Heading (using Style 2)	Subheadings (using Style 3)	Watermark Image	Header	Page number	Images	Other
1	www.gotogigs.co.uk	None	No	None	No	Lettering image Coverpage image	Border
2	Contents	None	Yes	None	Yes		Automatically generated table of contents
3	Company Information	None	Yes	None	Yes	Guitarist image	Text Wrap
4	Aberdeen	Collasia Palace The Cut The Turnaround	Yes	24-hour ticket office at www.gotogigs.co.uk	Yes		
5	Dundee	The Nightshade Timeout Club Upstairs Downstairs	Yes	Same as page 4	Yes		Footnote about capacity
6	Edinburgh	The Dome The Jozone Layer The Meeting Point The Office	Yes	Same as page 4	Yes		
7	Glasgow	The Gatehouse The H2O Fountain The Shack The Shed	Yes	Same as page 4	Yes		
8	Programme of Events	November 2010 December 2010	No	Same as page 4	Yes	Landscape Two Columns	Tables (using Style 4)

Task			Evidence Required
6		You are going to create the brochure using the files provided by your teacher/lecturer.	
	(a)	Define the four styles required to implement house style.	Printed definition of styles used.
	(b)	Create the brochure. In creating the brochure you must: • Insert the coverpage at the beginning with the correct images, text and layout. • Insert the image on the company information page and text wrap as shown. • Apply the defined styles in the appropriate places. Main text on each page uses style 1, headings use style 2, subheadings use style 3 and the tables on the back page use style 4. • Change the programme of events page to landscape with two columns. • Add a footnote reference beside the 2000 capacity of Upstairs Downstairs in Dundee. The footnote should read "Currently 1750, extended capacity to be completed by May 2011". This extra information should be included at the bottom of the page referenced by * symbol. • Create the breaks between pages and sections as required. • Automatically generate the table of contents for page 2 which includes page headings, subheadings and page numbers. • Add the watermark image on the pages specified. • Include the words "24-hour ticket office at www.gotogigs.co.uk" aligned to the right in the header on the pages specified. • Insert the page numbers in the footer on the pages specified.	Printed copy of brochure and screen shots out outline showing applied styles
	(c)	Print the brochure and evidence of using the stylesheet. It does **not** need to be printed in colour.	

Section 3

Marking Grid

Marking Grid

Name _____ **Date** _____

Task	Possible Marks	Actual Marks	Evidence	Comment
1.	6		Completed data dictionary	
2.(a)	4		Printout of table structure	
2.(b)	2		Printout showing relationships	
3.	6		Printout of report	
4.	8		Printout of report	
5.	4		Printout of macros/scripts	
6.(a)	4		Printout of style definitions	
6.(b)	3		Cover page	
	2		Insert Image	
	4		Printout of applied styles	
	2		Programme of Events page	
	3		Footnote	
	2		Pagination	
	3		Table of contents page	
	2		Watermarks	
	4		Headers/Footers	
6.(c)	1		Printout of brochure	
	60			

Appendix 1

Task 1 Proforma

Name					
Data dictionary for Gig entity					
Attribute	PK/FK	Data Type/Size	Un iq ue	Re qd	Validation
VenueName			N	Y	
Date		Date	N	Y	-
BandName			N	Y	
CostPerTicket	-	Number	N	Y	
TicketsSold	-	Number	N	Y	-

Appendix 2

Completed Data Dictionary

Only to be issued after completion and submission of Task 1

Entity	Attribute	PK/ FK	Data Type/Size	Unique	Required	Validation
Promoter	PromoterID	PK	Number	Y	Y	
	PromoterName		Text (20)	N	Y	
	PromoterPhone		Text (15)	Y	Y	
	CommissionRate		Number	N	Y	<=0·10
Band	BandName	PK	Text (30)	Y	Y	
	NumberofMembers		Number	N	Y	
	YearFormed		Number	N	Y	
	PromoterID	FK	Number	N	Y	Lookup from Promoter
Venue	VenueName	PK	Text(20)	Y	Y	
	VenueAddress		Text (40)	Y	Y	
	VenueCity		Text (15)	N	Y	
	SeatingCapacity		Number	N	Y	>=1000 and <=12000
	HireCost		Number	N	Y	>=750 and <=9850
Gig	VenueName	PK/FK	Text(20)	N	Y	Lookup from Venue
	Date	PK	Date	N	Y	
	BandName	FK	Text(30)	N	Y	Lookup from Bank
	CostPerTicket		Number	N	Y	>=15 and <=65
	TicketsSold		Number	N	Y	

Appendix 3

Brochure Design

GoToGigs

www.gotogigs.co.uk

Aberdeen
Glasgow
Edinburgh
Dundee

Contents

Company Information

GoToGigs owns and manages a number of concert venues throughout Scotland. We have venues in Aberdeen, Dundee, Edinburgh and Glasgow.

The company was founded in January 2005 and have a proven record of success over the years.

We have been responsible for some of the best concerts and shows in Scotland over the last few years, gradually developing our reputation as the first choice concert organisation in the country.

If you are the promoter for a performer or band, then you can register with us by contacting our head office on 01234 567899.

If you require information about any of our venues, then please read the following pages outlining the venue addresses, seating capacity and hire costs.

For information about forthcoming gigs, such as dates, ticket prices and ticket sales then visit our website at www.gotogigs.co.uk
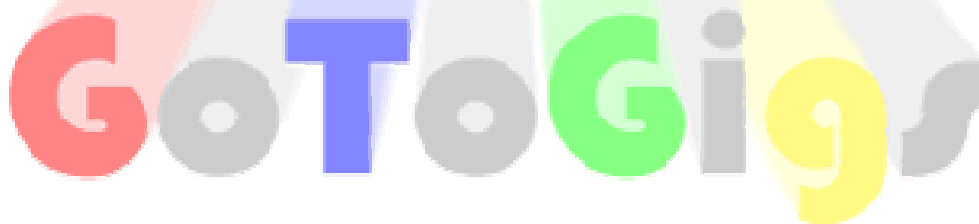
Aberdeen

Collasia Palace

The Collasia Palace is located near the sea front in Aberdeen. It is an ideal venue for small, intimate concerts or debut performances.

Address	Unit 12A Northern Exhibition Centre
Capacity	1000
Hire Cost	£750

The Cut

The Cut is Aberdeen's largest venue, located to the east of the city centre, within easy reach of the town and its many hotels. It has fantastic acoustics and is especially suited for rock bands.

Address	Granite Park
Capacity	12000
Hire Cost	£9500

The Turnaround

The Turnaround is located in the north of the city. It is close to the university campus, making it an ideal venue for young people.

Address	Hilton Park
Capacity	4500
Hire Cost	£3250

Dundee

The Nightshade

The Nightshade sits on the banks of the Firth of Tay with a splendid panoramic view of the Tay Bridge. It is a good, medium sized venue suitable for all types of concerts.

Address	7 Discovery Way
Capacity	3500
Hire Cost	£2200

Timeout Club

The Timeout Club is a new purpose-built arena, located on the east of the city in a new multi-purpose complex with excellent transport links to the city centre.

Address	The Grange
Capacity	8800
Hire Cost	£5300

Upstairs Downstairs

Upstairs Downstairs is ideally situated as a student venue, within easy reach of both the University of Dundee and Abertay University. It is currently undergoing some refurbishment to increase its seating capacity.

Address	26 Douglas Street
Capacity	2000*
Hire Cost	£1850

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* Currently 1750, extended capacity to be completed by May 2011

Edinburgh

The Dome

The Dome is located in a development at the West End of Princes Street. It is one of the city's largest venues and is well suited to rock bands.

Address	West End Park
Capacity	10500
Hire Cost	£9850

The Jozone Layer

The Jozone Layer has recently opened on the west side of the city, with excellent transport links into Edinburgh, Glasgow and Stirling.

Address	2 Crawling Place
Capacity	5500
Hire Cost	£4450

The Meeting Point

The Meeting Point has become one of the busiest venues in Edinburgh as it is very centrally located, close to all amenities.

Address	16 Royal Mile
Capacity	9500
Hire Cost	£8700

The Office

The Office has been converted from a former government building into a modern, exciting new venue offering a large capacity for concerts of all types .

Address	34 Crow Road
Capacity	11500
Hire Cost	£9750

Glasgow

The Gatehouse

The Gatehouse offers an intimate setting for small gigs

Address	Mains Estate
Capacity	1000
Hire Cost	£800

The H2O Fountain

The H20 Fountain is ideally situated in the centre of Glasgow, within easy reach of all bus, train and underground services.

Address	12 Hope Street
Capacity	2500
Hire Cost	£1200

The Shack

The Shack offers a modern arena with excellent facilities in a central location, close to all transport links.

Address	221 Lighthouse View
Capacity	11000
Hire Cost	£8500

The Shed

The Shed is located on the south side of Glasgow, close to the River Clyde. It is developing a reputation as an excellent venue for break through bands.

Address	374 Main Street
Capacity	8500
Hire Cost	£7500

Programme of Events

November 2010

Date	Band	Venue	Town
01/11/2010	The Daredevils	The Shed	Glasgow
02/11/2010	The Daredevils	The Shack	Glasgow
10/11/2010	M & M	The Jozone Layer	Edinburgh
15/11/2010	Cookin Mama	The H2O Fountain	Glasgow
16/11/2010	Shocking Pink	The Nightshade	Dundee
18/11/2010	Koko	The Dome	Edinburgh
23/11/2010	BoyzAloud	Upstairs Downstairs	Dundee
26/11/2010	Koko	The Cut	Aberdeen

December 2010

Date	Band	Venue	Town
07/12/2010	The Crying Babies	The Nightshade	Dundee
07/12/2010	The Running Men	Collasia Palace	Aberdeen
10/12/2010	Fruit Cocktail	The Shed	Glasgow
13/12/2010	Mortified	Collasia Palace	Aberdeen
16/12/2010	The Running Men	The Gatehouse	Glasgow
17/12/2010	The Pookys	The Shack	Glasgow
21/12/2010	Grey Eyed Beans	The Cut	Aberdeen
23/12/2010	The Running Men	The Nightshade	Dundee
31/12/2010	BABA	The Nightshade	Dundee
31/12/2010	A Thousand Words	The Meeting Point	Edinburgh
31/12/2010	Adding Owls	The Jozone Layer	Edinburgh