

## ASSIGNMENT 3 (version 1.1)

Assignment Value: 10% of your final mark  
The assignment is to be done in groups of 2-4 students

Due Date/Time: 8:30am Monday May 26, 2014  
(Note Late submissions will attract a penalty)

### Submission Requirements

You must submit a .zip file containing your assignment to ESP via the URL: <https://esp.it.swin.edu.au/>

- All submissions must be made by a team.
- You **must** register your team **BEFORE** the assignment is due.  
You cannot submit your assignment unless you join an ESP team.  
You must register your team before 5.30pm Friday May 9, 2014.

Your single .zip file must include the following **three** files:

- **A single MS WORD document named ASS3\_TEAM999.DOC (where 999 is your team number) that contains:**
  - A fully expanded and complete ERD diagram.
    - The diagram must be drawn using a drawing tool such as MS Visio
    - The diagram must follow the ERD symbol conventions used in lectures and labs.
  - The Relational Schema.
  - Network diagram (follow the same drawing guidelines from lectures).
- **A text file named ASS3\_SQL\_TEAM999.txt** containing your SQL script that creates the database tables and queries.
- **A text file named ASS3\_OUTPUT\_TEAM999.txt** containing the output generated by the above SQL script.

### NOTE:

Your database solution must work with iSQL Junior

*Late submissions will attract a penalty*

## Thrilling Outdoor Getaway Adventures

### Part 1. (50 marks)

Create a fully expanded **ERD** based on the information in the following narrative.

#### Business Narrative

Thrilling Outdoor Getaway Adventures (TOGA) runs holiday travel adventures throughout Australia. The adventures originate in Melbourne and go to places such as Philip Island, Great Ocean Road and Central Australia.

Each adventure is run on a number of separate occasions.

Each adventure has an adventure code, a description and a duration (number of days).

Each time an adventure is scheduled to run, TOGA record the tour date and the tour price.

No two tours for the same adventure code commence on the same date.

TOGA has a number of qualified staff. Usually 3 to 6 staff attend each adventure tour. About 4 weeks prior to the departure date of a tour the staff are allocated to the tour. One of those staff members is designated as the tour leader. A staff member who is a leader of one tour may be an assistant of a different tour.

All staff members have a staff id, first name and surname. Each possesses a number of skills such as cooking, first aid, bus driver etc.

People interested in participating in an adventure usually ring or email TOGA requesting an adventure brochure. TOGA immediately assigns that person a customer identification code. TOGA also records the name, address and phone number of the person making the brochure request. As well, TOGA records that date the request was made. Normally within a day or two, a printed colour brochure is sent to the customer. TOGA records the day that the brochure was sent.

At some point of every tour, TOGA arranges a special activity afternoon. Activities may include Shark feeding, Shopping, Rock Climbing, Toga Party, Attending a Movie etc. Each activity has an activity code and an activity description. TOGA administrators specify which activities are available for each tour (e.g. this will change from tour to tour depending upon weather conditions, access to resources, time of year etc. Obviously some activities are unlikely to be available on some adventure tours. E.g.. Shark Feeding on the Central Australian Tour is unlikely to occur).

For each customer who books a tour, TOGA assigns the person a customer identification code (unless the person has previously been assigned a customer identification code via a brochure request or a previous booking) and records the person's name, address and phone number.

TOGA also records the total payment(s) that have been made by the customer for the tour. (A customer may make a number of partial payments). For each payment, the amount and the payment date is recorded.

Customers cannot make bookings or payments on behalf of other people on the tour. (For this assignment, consider a family of four people as 4 individual customers.)

TOGA records which tour activities each booked customer has a preference for (customers are encouraged to nominate for more than one activity in case one or more activities are cancelled due to unforeseen circumstances). Obviously customers can only choose activities that are available for the tour that they have selected.

**Once your ERD is complete you MUST show it to your tutor for approval.**

**IMPORTANT: You must not attempt Part 2 of this assignment until your ERD has been approved.**

### **Part 2. (10 marks)**

- Create a Relational Schema based on your ERD.
- Create a Network Diagram based on your relation schema.

### **Part 3. (20 marks)**

- **Download** the file called Ass3\_SQL\_Script.TXT which contains SQL statements that will eventually be executed by your tutor. All SQL statements added to this file must be able to be executed successfully in ISQL Jr.  
**Rename** this script to ASS3\_SQL\_TEAM999.txt (where 999 is your team number)
- Add the **Create Table** statements to the script file to create all of the tables.
- All tables must enforce **primary key** and **foreign key** constraints
  - Surrogate Keys must not be introduced into your solution.
- **Populate** your tables with the data used in Appendix A below.  
**Do not add your own data.**

### **Part 4. (10 marks)**

- Write **insert** statements that **test** your primary key and foreign key constraints
- Each of the above insert statements **must fail**, due to constraint errors such as duplicate primary key, invalid key , parent key not found etc.

#### **Validation of data:**

You are expected to have Primary Key and Foreign Key constraints.  
However, you are **not** expected to attempt to validate data such as

- Ensure that a customer books on two tours that overlap
- Ensure that staff members are no allocated to two tours that overlap
- Ensure that customers have not underpaid or overpaid their booking payments.

These are **beyond the scope** this assignment. Such restrictions would normally be programmatically solved using Stored Procedures/Functions, Triggers or some other programming technique). Enrol in INF20010/60014 to learn how! ☺

**Part 5. (5 marks)** Create a SQL queries to do the following:

- Query 1.** List **Customer No, Name and Address of all customers.**  
The List must be in Customer No sequence.
- Query 2.** List adventure code, tour date, allocated staff names of all tours.  
The List must be in adventure code, tour date, staff name sequence.
- Query 3.** List adventure code, tour date, customer no and customer name for every booking made  
The List must be in adventure code , tour date, customer no sequence.
- Query 4.** List adventure code, tour date, activity code and activity description for all activities **offered** on all tour. The List must be in adventure code, tour date, activity code sequence.
- Query 5.** List adventure code, tour date, customer no, customer name, activity code and activity description for all activity **chosen** by customers on all tours. The List must be in adventure code, tour date, customer no, activity code sequence.

**Part 6. (5 marks)**

- Query 6.** List Customer No, Customer Name, Total payments made by all customers who have made bookings.  
Include customer that may never made a booking.  
The List must be in Customer No sequence
- Query 7.** List Tour Code and Total Payments made for all tours.  
The List must be in Tour Code sequence
- Query 8.** List **activity code** and **activity description** and total number of times that a **activity** has been selected by a booked customer.  
Include all **activities** that may never have been selected.  
The list must be in descending total sequence
- Query 9.** List all adventure codes, descriptions and the most recent price for each adventure. E.g.
- | Adventure Code | Description      | Most Recent Price \$ |
|----------------|------------------|----------------------|
| PER1           | Tour of Perth    | 1750                 |
| TAS1           | Tour of Tasmania | 500                  |
- Query 10.** List Customer No, Customer Name, Adventure Code, tour date for all customers who requested a brochure for an adventure and then made a booking for that adventure.

**Script execution and output requirements**

Your submission must include the output generated by the **ASS3\_SQL\_TEAM999.txt** after the entire script has been executed in ISQL Jr. The output must be pasted and copied into a text file (in a similar fashion to Ass1 and Ass2). The name of the must be **ASS3\_OUTPUT\_TEAM999.txt**. Obviously, your queries should still work correctly – even if the data in the tables were to change.

## Existing Documents

Below are copies of various handwritten reports / documents that are manually prepared by staff at the TOGA Adventures.

## TOGA Data (taken from various hand written documents).

### ADVENTURES

| Code | Duration (days) | Description                      |
|------|-----------------|----------------------------------|
| GR1  | 3               | Great Ocean Rd Motel Adventure   |
| GR4  | 7               | Great Ocean Rd Camping Adventure |
| YV2  | 2               | Yarra Valley Winery Getaway      |
| MRG1 | 5               | Murray River Golf Getaway        |

### Tour Calendar

| Code | Start Date | Tour Leader      | Tour Assistants                   | Activities Offered |
|------|------------|------------------|-----------------------------------|--------------------|
| YV2  | 2013/09/17 | Buffy Summers    | Xander Harris<br>Tara Maclay      | A4, P1, S1         |
| MRG1 | 2013/09/18 | Cordilia Chase   | Riley Finn                        | M1, P1, G1         |
| GR1  | 2013/09/18 | Willow Rosenberg | Jonathan Levinson<br>Rupert Giles | S1, S2             |
| GR1  | 2013/09/25 | Rupert Giles     | Xander Harris<br>Cordilia Chase   | S1, S2, G1         |

### STAFF DETAILS

| Staff Id | Name              | Skills                           |
|----------|-------------------|----------------------------------|
| 101      | Buffy Summers     | Cooking, Bus Driver, First Aid   |
| 125      | Xander Harris     | Horse Riding, Cooking, First Aid |
| 174      | Tara Maclay       | Bus Driver, First Aid            |
| 213      | Rupert Giles      | First Aid, Surfing               |
| 333      | Riley Finn        | Golf, Bus Driver                 |
| 351      | Cordilia Chase    | Golf, Horse Riding               |
| 394      | Jonathan Levinson | First Aid                        |
| 400      | Willow Rosenberg  | Bus Driver                       |

### Activities

| Code | Activities    |
|------|---------------|
| S1   | Shopping      |
| S2   | Surfing       |
| G1   | Golf Lessons  |
| M1   | Movies        |
| P1   | Pottery       |
| A4   | Art Tour      |
| R1   | Rock Climbing |
| T2   | Toga Party    |

### Customer Details

| Cust Number | Name          | Address                  |
|-------------|---------------|--------------------------|
| 1145        | Rose Tyler    | 12 Glenferrie Rd Malvern |
| 1444        | Mickey Smith  | 7 Green Ave, Hawthorn    |
| 1805        | Rory Darvill  | 2 Red St Richmond        |
| 1274        | Martha Jones  | 1 John St, Kew           |
| 1333        | Amy Pond      | 2 Bell St Dingley        |
| 1810        | Wilfred Mott  | 7 Oak Rd Hawthorn        |
| 1334        | Jack Harkness | 2 Bell St Dingley        |
| 1299        | Harold Saxon  | 4 Hill Ave Kew           |
| 521         | Donna Noble   | 8 Dale St, Kew           |

### BOOKINGS

| Customer | Adventure     | Code | Tour Date  | Fee   | Activities Selected |
|----------|---------------|------|------------|-------|---------------------|
| 1145     | Rose Tyler    | GR1  | 2013/09/25 | \$580 | Surfing             |
| 1444     | Mickey Smith  | YV2  | 2013/09/17 | \$195 | Pottery, Shopping   |
| 1274     | Martha Jones  | YV2  | 2013/09/17 | \$195 | Art Tour, Pottery   |
| 1333     | Amy Pond      | GR1  | 2013/09/18 | \$580 | Surfing             |
| 1334     | Jack Harkness | GR1  | 2013/09/18 | \$580 | Surfing, Shopping   |
| 1299     | Harold Saxon  | MRC1 | 2013/09/18 | \$695 | Golf Lessons        |
| 521      | Donna Noble   | MRC1 | 2013/09/18 | \$695 | Golf Lessons        |

### Payments

| Customer | Code | Tour Date  | Payment Date | Payment Amount |
|----------|------|------------|--------------|----------------|
| 1145     | GR1  | 2013/09/25 | 2013/09/01   | \$580          |
| 1444     | YV2  | 2013/09/17 | 2013/08/03   | \$100          |
| 1444     | YV2  | 2013/09/17 | 2013/08/28   | \$95           |
| 1274     | YV2  | 2013/09/17 | 2013/08/20   | \$195          |
| 1333     | GR1  | 2013/09/18 | 2013/08/10   | \$580          |
| 1299     | MRC1 | 2013/09/18 | 2013/07/15   | \$695          |
| 1334     | GR1  | 2013/09/18 | 2013/08/14   | \$580          |
| 521      | MRC1 | 2013/09/18 | 2013/06/15   | \$250          |
| 521      | MRC1 | 2013/09/18 | 2013/07/14   | \$250          |
| 521      | MRC1 | 2013/09/18 | 2013/08/16   | \$195          |

### Brochure Requests

| Date Requested | Name         | Address           | Code | Date Sent  |
|----------------|--------------|-------------------|------|------------|
| 2013/07/16     | Martha Jones | 1 John St, Kew    | YV2  | 2013/07/18 |
| 2013/07/21     | Rory Darvill | 2 Red St Richmond | GR1  | 2013/07/21 |
| 2013/07/28     | Harold Saxon | 4 Hill Ave Kew    | MRC1 | 2013/08/01 |
| 2013/08/07     | Wilfred Mott | 7 Oak Rd Hawthorn | GR4  | 2013/08/07 |