Welcome

Dr. Luigi Barone
Room 2.12
luigi@csse.uwa.edu.au

Dr. Rowan Davies
Room 2.16
rowan@csse.uwa.edu.au

A unit about space, time, and integrity.
Handbook Description

At the core of most computer applications is the storage and retrieval of information. The way that the stored data is structured has a strong impact on what can be retrieved, how quickly it can be retrieved, and how much space it occupies. The use of generic structures, or abstract data types (ADTs), to encapsulate the data also allows software engineering principles of independent modification, extension and reuse.

This unit studies the specification, implementations and time and space performance of a range of commonly-used ADTs and corresponding algorithms in an object-oriented setting. The aim is to provide students with the background needed both to implement their own ADTs where necessary, and to select and use appropriate ADTs from object-oriented libraries where suitable.
This Lecture

- Introductory information — teaching sessions, teaching staff, assessment, lab rules, unit software, on-line resources, teaching and learning agreement

- Introduction to ADT’s

Wikipedia disambiguation:

1. Abstract data type: a computer programming term
3. Automatic double tracking: an audio recording technology invented for The Beatles
5. Average Daily Traffic: to show the volume of traffic on a road in transportation planning
6. Active Denial Technology: also known as the pain ray
Timetable

- **Lectures**
  - 2pm-3pm Tuesdays, Webb Lecture Theatre
  - 10pm-11am Fridays, Gentilli Lecture Theatre

- **Tutorials**
  - 2pm-3pm Thursdays, Engineering Lecture Theatre 1

- **Laboratories**
  - 10am-12pm Thursdays, CSSE Lab 2.01
  - 12pm-2pm Thursdays, CSSE Lab 2.01
  - 3pm-5pm Thursdays, CSSE Lab 2.01
  - **Only the hours 12noon-1pm and 3pm-4pm are supervised**

- **Consultation**
  - Luigi: 3pm-5pm Tuesdays, CSSE Room 2.12
  - Rowan: 2pm-4pm Mondays, CSSE Room 2.16
Help Forum

Aside from the aforementioned activities, you may also get help via the help2200 electronic forum — a public discussion board for all queries relating to the unit.

Assessment

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Date</th>
<th>% of Final Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laboratory work</td>
<td>Selected weeks, starting Week 4</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-semester test</td>
<td>Tuesday, Week 8</td>
<td>10%</td>
</tr>
<tr>
<td>Project</td>
<td>Weeks 10-13</td>
<td>20%</td>
</tr>
<tr>
<td>Final examination</td>
<td>June examination period</td>
<td>60%</td>
</tr>
</tbody>
</table>

References

Further Reading

There are many different books on the subject of data structures as well as books on the subject of Java, including some which combine the two. A few examples of books worth looking at include:


Topics Of Study

We will study the following topics this semester:

<table>
<thead>
<tr>
<th>1. Introduction</th>
<th>2. Java Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. Recursive Data Structures</td>
<td>4. Abstract Data Types</td>
</tr>
<tr>
<td>5. Queues and Stacks</td>
<td>6. Complexity Analysis</td>
</tr>
<tr>
<td>7. Objects and Iterators</td>
<td>8. Lists</td>
</tr>
<tr>
<td>11. Sets, Tables, and Dictionaries</td>
<td>12. Priority Queues</td>
</tr>
<tr>
<td>13. Hash Tables</td>
<td>14. Revision</td>
</tr>
</tbody>
</table>
What You Should Do This Week

1. Get set up to use the School’s Computer Systems:  
   https://secure.csse.uwa.edu.au/run/csentry?pw1=yes
2. Begin to familiarise yourself with the Unit’s web site.
3. Have a go at *An Introduction to MacOSX* and the first labsheet.

Laboratory and tutorial classes start Thursday, Week 2.