First Year Case Study

Objectives

- To introduce the first year case study.
- To study the Use Case model.
- To study the case study architecture.
- To consider the analysis model.
- To consider the domain classes.
- To view the JavaDB Database tables.
- To study the design model.
- To execute and use the case study.

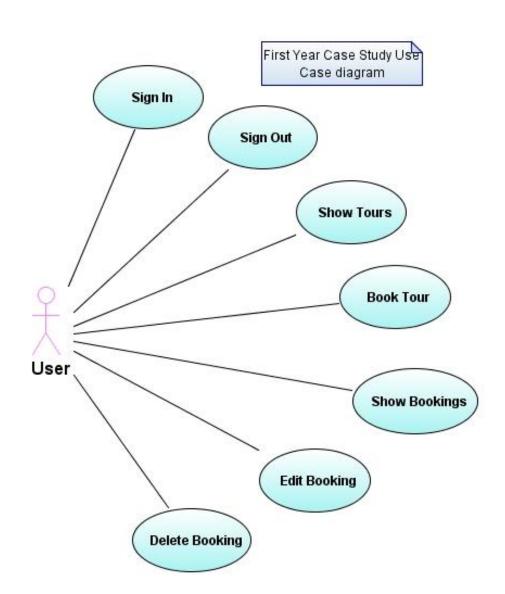
The First Year Case Study - 1

- The case study is a simple 3-tier Web application.
- The application is an E-Commerce application that might be used by a travel company to allow the booking of travel tours.
- Case study clients are thin e.g. a Firefox or Internet Explorer Web browser.

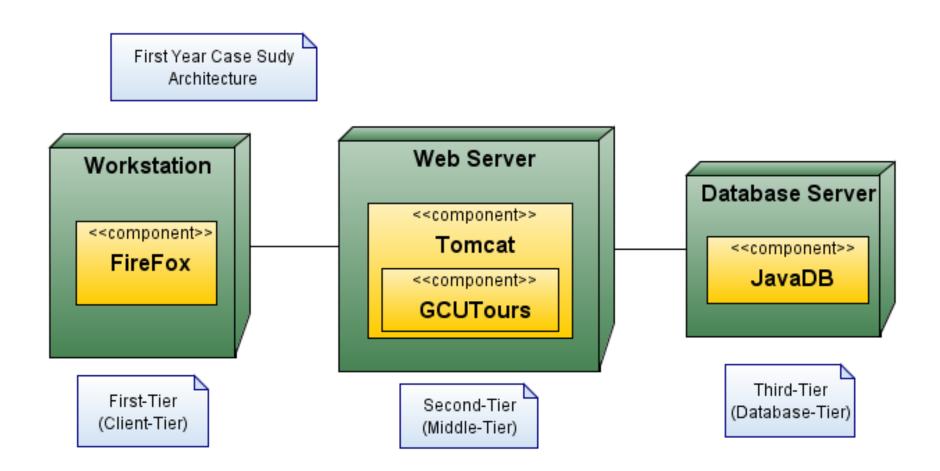
The First Year Case Study - 2

- The middle tier is implemented using Java technology and is responsible for Presentation, Business and Data Access Logic.
- The middle tier uses a server called Tomcat that can serve Web pages and can also execute code in response to client requests.
- The JavaDB database server is the third tier

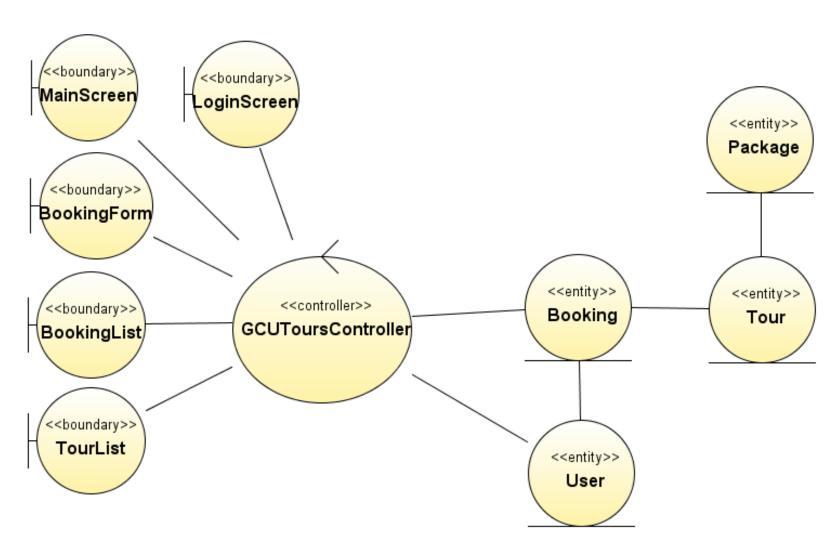
The Use Case Model



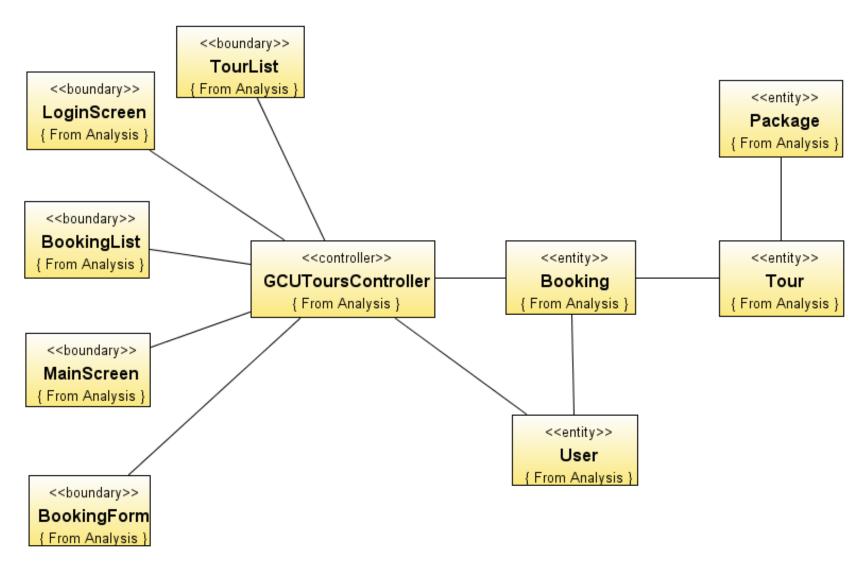
The Architecture



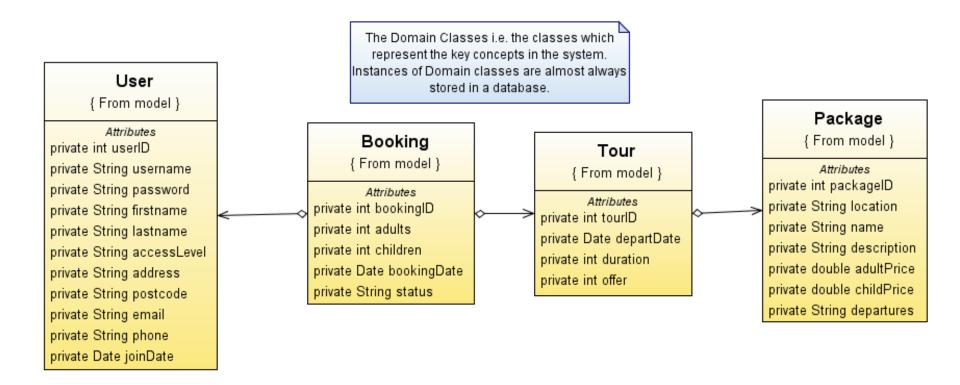
The Analysis Model (icon)



The Analysis Model (non icon)



The Domain Classes



The JavaDB Database Tables

- The JavaDB database has Four tables to support the saving of instances of the User, Booking, Tour and Package classes
- The tables are:
 - USERS for instances of the User class
 - TOURS for instances of the Tour class
 - BOOKINGS for instances of the Booking class
 - PACKAGES for instance of the Package class
- A single row in each table is used to hold each class instance.

Design Model 1 Domain Classes

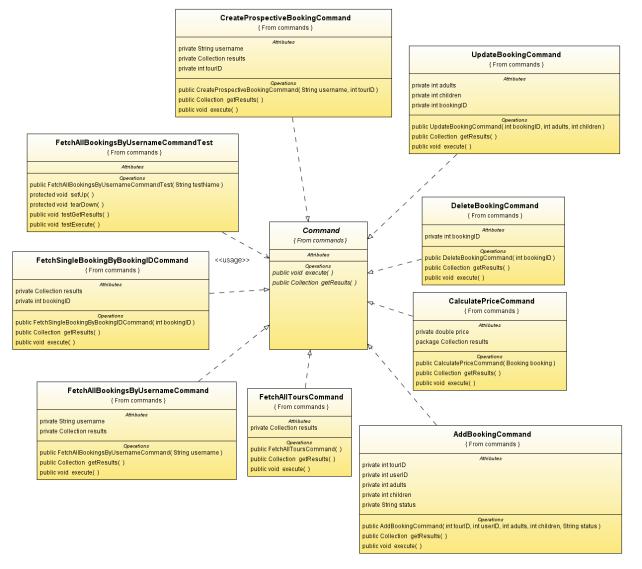
User { From model } Attributes private int userID private String username private String password private String firstname private String lastname private String accessLevel private String address private String postcode private String email private String phone private Date joinDate Operations public User() public int getUserID() public void setUserID(int userID) public String getUsername() public void setUsername(String username) public String getPassword() public void setPassword(String password) public String getFirstname() public void setFirstname(String firstname) public String getLastname() public void setLastname(String lastname) public String getAccessLevel() public void setAccessLevel(String accessLevel) public String getAddress() public void setAddress(String address) public String getPostcode() public void setPostcode(String postcode) public String getEmail() public void setEmail(String email) public String getPhone() public void setPhone(String phone) public Date getJoinDate() public void setJoinDate(Date joinDate)

```
Booking
                 { From model }
                   Attributes
private int bookingID
private int adults
private int children
private Date bookingDate
private String status
                   Operations
public Booking (User user, Tour tour)
public int getBookingID()
public void setBookingID( int bookingID)
public int getAdults()
public void setAdults(int adults)
public int getChildren()
public void setChildren( int children )
public Date getBookingDate()
public void setBookingDate( Date bookingDate )
public String getStatus()
public void setStatus(String status)
public double getAdultPrice()
public double getChildPrice()
public int getOffer()
public int getUserId()
public int getTourld()
public String getPackageLocation()
public String getPackageName()
public Date getDepartureDate()
```

```
Tour
                { From model }
                  Attributes
private int tourID
private Date departDate
private int duration
private int offer
                  Operations
public Tour( Package holidayPackage )
public int getTourlD()
public void setTourlD(int tourlD)
public Date getDepartDate()
public void setDepartDate( Date departDate )
public int getDuration()
public void setDuration(int duration)
public int getOffer()
public void setOffer(int offer)
public double getAdultPrice()
public double getChildPrice()
public String getPackageName( )
public String getPackageLocation()
```

```
Package
                 { From model }
                   Attributes
private int packageID
private String location
private String name
private String description
private double adultPrice
private double childPrice
private String departures
public Package( )
public int_getPackageID( )
public void setPackageID(int packageID)
public String getLocation()
public void setLocation( String location )
public String getName()
public void setName( String name )
public String getDescription()
public void setDescription( String description )
public String getDepartures()
public void setDepartures( String departures )
public double getAdultPrice( )
public void setAdultPrice( double adultPrice )
public double getChildPrice()
public void setChildPrice( double childPrice )
```

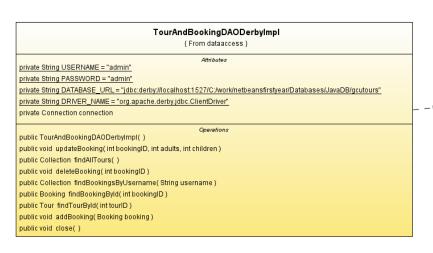
Design Model 2 Commands



Design Model 3 Controllers

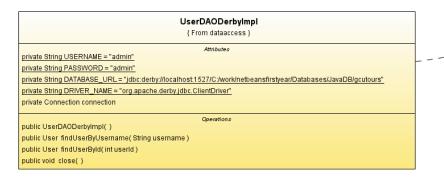
FrontControllerServlet { From controllers } Attributes Operations protected void processRequest(HttpServletRequest request, HttpServletResponse response) private void showBookings(HttpServletRequest request, HttpServletResponse response) private void showEditBookingForm(HttpServletRequest request, HttpServletResponse response) private void updateBooking(HttpServletRequest request, HttpServletResponse response) private void deleteBooking(HttpServletRequest request, HttpServletResponse response) private void signOut(HttpServletRequest request, HttpServletResponse response) private void showBookingForm(HttpServletRequest request, HttpServletResponse response) private void addBooking(HttpServletRequest request, HttpServletResponse response) private void showMain(HttpServletRequest request, HttpServletResponse response) private void showTours(HttpServletRequest request, HttpServletResponse response) private void showView(HttpServletRequest request, HttpServletResponse response, String view) protected void doGet(HttpServletRequest request, HttpServletResponse response) protected void doPost(HttpServletRequest request, HttpServletResponse response) public String getServletInfo()

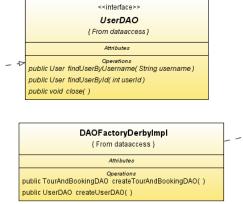
Design Model 4 Data Access







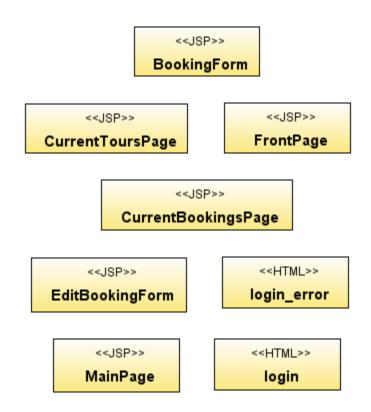




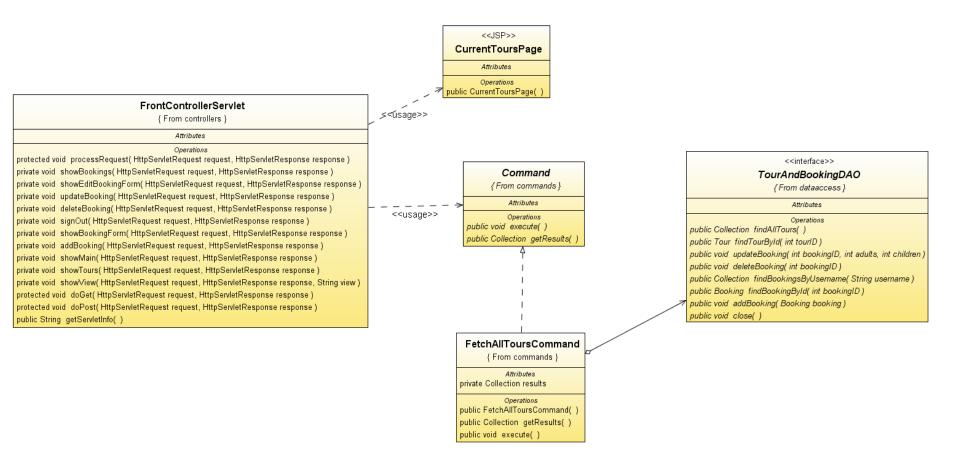
<<interface>>
DAOFactory
{From dataaccess}

Attributes
Operations
public TourAndBookingDAO createTourAndBookingDAO()
public UserDAO createUserDAO()

Design Model 5 User Interface



Design Model 6 Misc



Case Study Demo