

## ADVANCED JAVA CASE STUDIES

### CASE STUDY 1: Online E-Post Office System

This system is required for the automation of the current mailing system. This system changes the view of mailing with the smart technique of E-mailing. This system will reduce the time of mailing with a drastic change in time. The mails that were taking 5 days will now be sending within hours.

A government firm wants to have this functionality of mailing and other features such as:

1. A person will take its mail to the office where it will be either typed or scanned and then send by on official as e-mail to the respective city where the person wants to send the mail. On the other end the e-mail will be received by the other official, takes printout, enveloped it and send it to the actual address in that city.
2. If a user wants to send mail to any village or any town by his computer system should have that feature also with the fees for sending such mails through Internet.
3. A user can also do a money order with such system. The payment in such case should be allowing by providing link to several banks for this transaction by their ATM and Credit cards.
4. Other than this if a person wants to money order as fast as possible he can just give money to official who will take money and send a confirmation mail to the other city official from where he will take money enveloped it and send it to the actual address with help of it's staff.

This system has to be developed with high user interactive techniques by using J2EE and following the MVC architecture.

### **Case Study 2: Shopping mall management system**

A very popular shopping mall in the city is having a huge number of items in their mall. With the network of many internal shopping stores:

1. Electronics stores
2. Dress wears
3. Foot wears, domestic things
4. Food materials.
5. Daily use things etc.

Each store staff is currently having a manual system to note down each item entry in their own store records and then keep inform the management of mall for their daily sales. Some of the entries of items are common within all store products that is required by the mall management to keep the record of the sales. Entries are:

1. Product id
2. Product name.
3. Product category.
4. Product cost.
5. Date of purchase from vendor.
6. Date of sailing to customer.

Now the mall staff wants a centralized JAVA based online system for all of their stores with the facility to enter these entries of their products such that at the time of their sales the entries should be done in a centralized system so that mall staff can also have a daily record.

With above requirements the system must have following features:

1. The stores staff should have the facility to generate a print format of the bill produced to the customer.
2. The system should be very fast with no server delays.

Technically, this online system must follow the MVC architecture. The load on server should be very less from each request as there are hundreds of requests in such system.

### **CASE STUDY 3: Multiplex ticket and management system**

A new huge multiplex is opened in the city with the total of 8 screens to show 8 movies simultaneously. The multiplex head of department wants an online system for the following purposes:

- A single system dedicated for online users and staff of multiplex.
- Users after their simple registration can book the movies ticket online.
- Staff for online booking ticket should also use the same system but they will be login as employee.
- The head also want to keep track of vehicles which gets into the multiplex for security reasons. So this system should have an option for parking records.

Above requirements can be understood in details as follows:

1. Online tickets booking by Users: User shall simply book a ticket after providing his/her name with contact number. The payment should be allowed online by approaching several bank gateways.  
Here Users should have the choice of the movies, timings and seats (balcony, middle, lower).
2. There should be separate login column for ticket booking staff. Here they should be able to fill info and take the print of ticket:
  - Seat area (balcony, middle, lower),
  - Time of show
  - Screen no.
  - Acc. To seat area cost of ticket should be entered automatically.
3. Parking link in web page should have:
  - A separate login for parking employees.
  - A vehicle no. to be entered.
  - Entry time.
  - Parking fees option for 2 wheelers and four wheelers.

**In the user section there should be display of complete information of the movies. The ticket booking and employees must have a very fast working and also the efficient system.**

**So with the above requirements, technically, this online system must follow the MVC architecture. The load on server should be very less from each request as there are hundreds of requests in such system.**

#### **CASE STUDY 4: Online University information System**

**A University wants to have an online website which shows the various information as follows:**

- 1. The website should have an enriched look and feel to show all the features of the University**
- 2. It should have all the list of its colleges.**
- 3. System should have a separate login for their employees who can fill student results, see the complaints, see the requests for their applications and take the print of it.**
- 4. There should be a facility of availability of different forms for students.**
- 5. A news facility which hourly updates the students with the progress of the University work progress.**
- 6. A result management system that shows the current semester results of all the University and its colleges students with a proper print of that marksheet.**
- 7. Online applications for duplicate mark sheets, complaints about any problem in colleges.**

**The University wants its website to have a very fast management system for the result purpose as when the result declares thousand of its students requests for the result.**

**The University wants its system to be developed in Advanced JAVA with following the MVC architecture.**

### **CASE STUDY 5: University Management System**

A XYZ technical university is developed very rapidly in the past 5 years. With the inclusion of several other colleges, their work load has been increased. Now they are having problems regarding management as they have to do lots of paper work for maintaining data of students belonging to several other colleges.

The following information shows the current status of the university:

- No. of colleges :19
- No. of branches in each college:4
- No. of students in each college:240
- No. of employees in management staff in university:120

University requires to have an online system for their management staff so that they can have facilities like:

1. Insertion of student records.
2. Update their records.
3. Keeping their records year wise.
4. Displaying or records.
5. Fully password protected system with 120 user ids.

Students information to be entered are:

1. Name of the student.
2. Branch of student.
3. College Name.
4. Contact Address.
5. Course Starting year.
6. Pass out year.
7. Current studying year

With the above information the University wants this system to be developed using the Advanced Java Technology with supporting MVC architecture so that any future enhancements will be easily possible.