14

Resources	homework_lesson_14_process_design.pdf
Tags	process flow

Question 1

Scenario:

Design a cinema booking system. Think how you would approach the problem and what are potential ways of solving it?

You do not need to write actual code, but describe the high-level approach:
• Draw a list of key requirements
• What are your main considerations?
• What would be your common or biggest problems?
• What components or tools would you potentially use?
• You are welcome to draw a diagram (a very simple one) for the process flow to explain how
it is going to work.

Key requirements (i.e., functions that the system must be able to perform)

- Display and continuously update (e.g., add or remove films) information from the cinema schedule database
- Display information about each film e.g., synopsis, ratings, reviews, duration, release date etc.
- Allow users to search for a specific film
- Allow users to filter the displayed films into specific categories e.g., based on genre or age restrictions
- Allow the list of films and schedules to be sorted e.g., according to release date or ratings
- Show users multiple booking availabilities once a film has been chosen

- Display which seats are available in a given cinema theatre for reservation
- Not allow participants to book screenings where all seats are taken
- Allow users to pay by vouchers
- Allow users to pay by card for their bookings
- Send booking confirmation emails and receipts
- Allow (returning) users to create an account if they wish
- Allow for cancellations of bookings and refunds

Main considerations (i.e., questions about the system)

- Does the system allow users to reserve seats or is it first come first serve?
- What methods can users pay for their bookings with? do they pay online or do they pay when they turn up at the cinema?
- How will it be ensured that an <18 is not booking for an >18 film?
- How will the card details from the user be stored? where will they be stored, and how long for? How can the system guarantee that no third party will have access to this confidential information?
- Will cookies be used to recommend films to the user? If a film the user wants to see if booked up, will the system recommend similar films?
- Which APIs will the system use to retrieve data about the variable information for each film e.g., ratings, reviews?
- How will the system cope with periods of popular use e.g., when a much anticipated film becomes released and everyone wants tickets?
- How will the system adapt for those who cannot see or hear?
- How long can a user hold an item in their 'cart' for before it becomes invalid
- How many tickets can a single person buy (i.e., some website limit to 6)

Problems

- Validating the age of the person booking the film - may require personal information e.g., passport and a complex API to verify the age
- Using APIs to sync information about the films to the booking system - which websites would be chosen for the reviews and ratings to ensure they are as unbiased as possible?
- Choosing which new-release films to display - what information is there to go off to deem whether a film might generate profit through bookings? may require complex algorithms to see what genres of films the returning users generally choose to see

Tools

- Python to build the API that allows the cinema schedule to run
- mySQL for information about the film schedules and booking availabilities