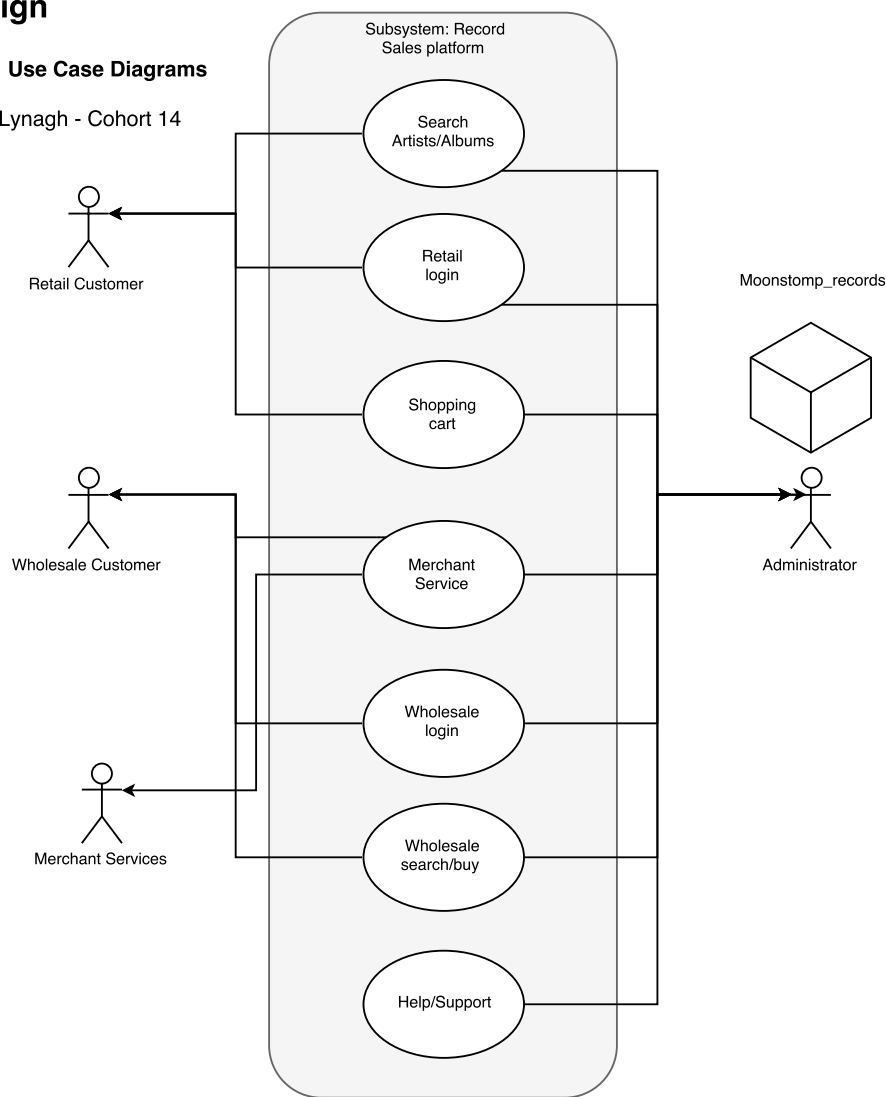


A&D A.D 1

Analysis and Design

A.D. 1 Use Case Diagrams

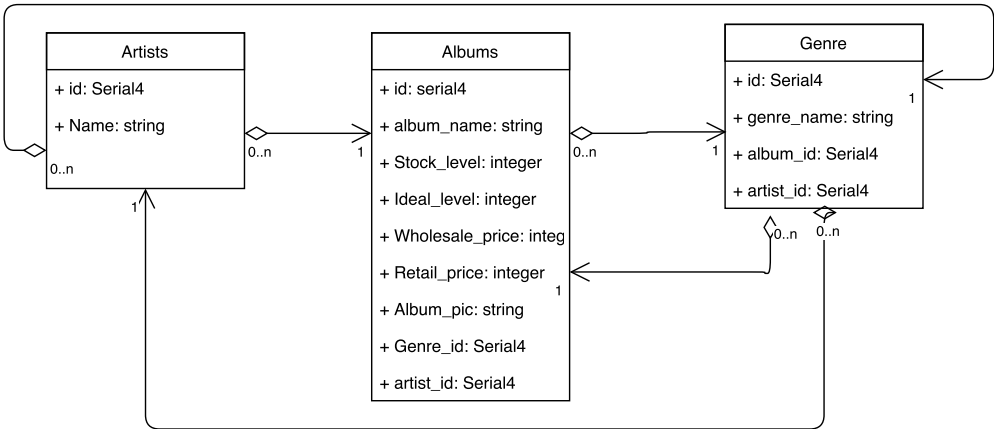
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A.D. 2 Class Diagrams

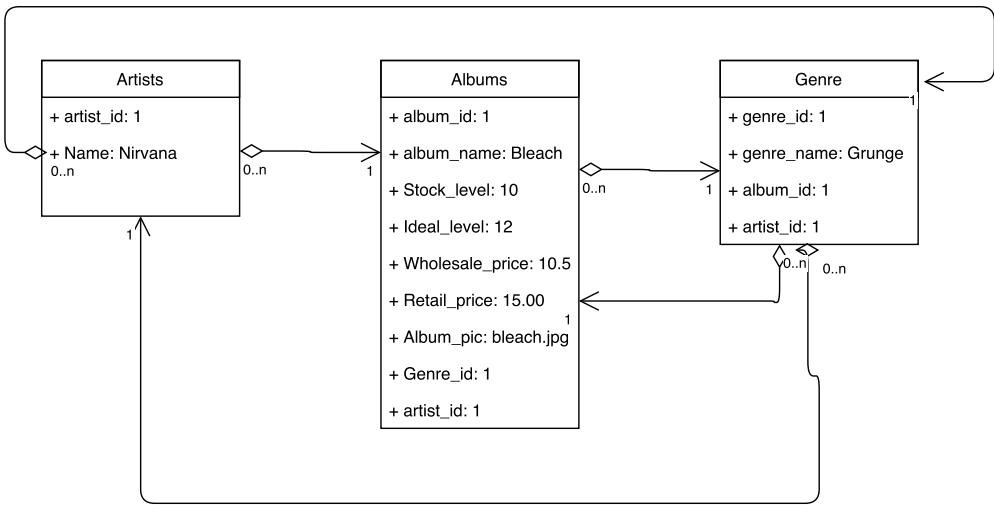
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Analysis and Design

A.D. 3 Object Diagrams

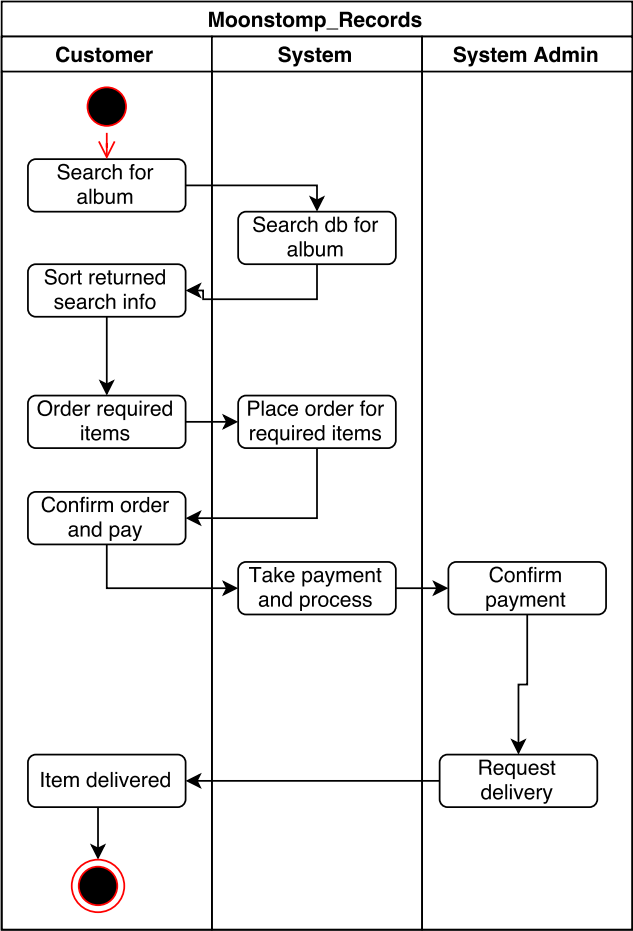
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Analysis and Design

A.D. 4 Activity Diagram

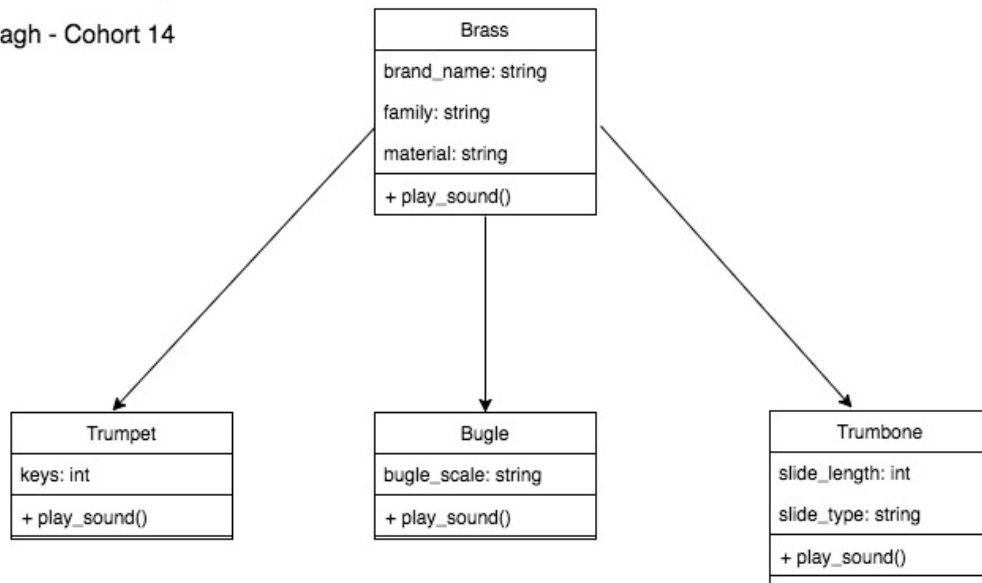
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## Analysis and Design

### A.D. 5 Inheritance Diagram

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Topic	Possible Effect of Constraint on Product	Solution
<b>Hardware and software platforms</b>	Limitations associated with web browsers and versions can create constraints for the individual end user, organisations and the product itself. Web browsers access and display information in different ways and this can potentially lead to people not being able to access information or not displaying as the creator had intended; making the UX poor for the end user.	Develop an understanding of your end user and how they will experience your app. Implement code that considers browser support for the user and offer suitable browser alternatives. Follow semantic guidelines for HTML and CSS references with a broad acceptance across the main browsers accessed by your end user.
<b>Performance requirements</b>	Poorly structured and written code can lead to applications having a poor user experience. Code that has not considered the implications surrounding execution times and storage implications can lead to slow applications and potentially crashing – this in turn will create a poor user experience with slow load times and data not be displayed as intended.	Ensure that code is written in a clean, dry way and consideration has been given to the ‘big O’ implications of more complex algorithms.
<b>Persistent storage and transactions</b>	Failure to identify and regularly monitor data storage requirements could lead to issues with delivery of the app and also impact on the scalability of the app. The end user may experience slow load times, access issues and potential crashes if the app is not able to handle the volume of data and users.	During planning stages, create detailed user stories that identify the who and how they will use your app. Identify outer limits of data storage requirements and the times when data will be under most stress. Ensure that adequate data storage is available and there is flexibility in the data system to cope with a sharp increase in users during the busiest times.
<b>Usability</b>	Creating an app that has not considered the needs of all users and how they interact with app. This will lead to a poor user experience for people with disabilities and potentially exclude people from accessing	Putting user experience at the centre of decision making and understanding how incorporating Accessible Rich Internet Applications (ARIA) into your applications makes it

	your app completely.	more accessible to people with disabilities.
<b>Budgets</b>	Budgeting for storage could create a constraint that would have significant impact on the delivery of your app. Failing to identify and budget for appropriate storage as your app scales up could lead to a poor user experience, slow load times and perhaps crashing completely.	Identify outer limits of data storage requirements and ensure budgeting to allow for this. Also consider alternative budget requirements if short-term data storage is required.
<b>Time limitations</b>	Time constraints combined with poor planning can lead to delivery of an end product that does not necessarily meet the expectations of the brief and also is not providing a worthwhile user experience for the end user.	Ensure suitable planning is undertaken – identify the MVP and agree with client. Include the client in on-going decision making and show working elements of the app to agree on desing decisions as you progress. Chunk the project down into small manageable sections and incorporate a suitable time management methodology to ensure delivery milestones are met.