Chapter 5: Aggregation and Composition

EECS 1030

moodle.yorku.ca

Expedia

Problem

Expedia asks you to implement this API.

Cheap traveller

A cheap traveller has bought a ticket from Expedia and tries to change the date of departure by one day without paying the change fee.

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Show `Traveller` app.

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Show `Traveller` app.

Problem

How can you avoid in your implementation of the `Ticket` class that the cheap traveller is successful in changing the date?

Collection

Question

What is a collection?

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Answer

A collection is a special type of aggregation where the number of components may vary.

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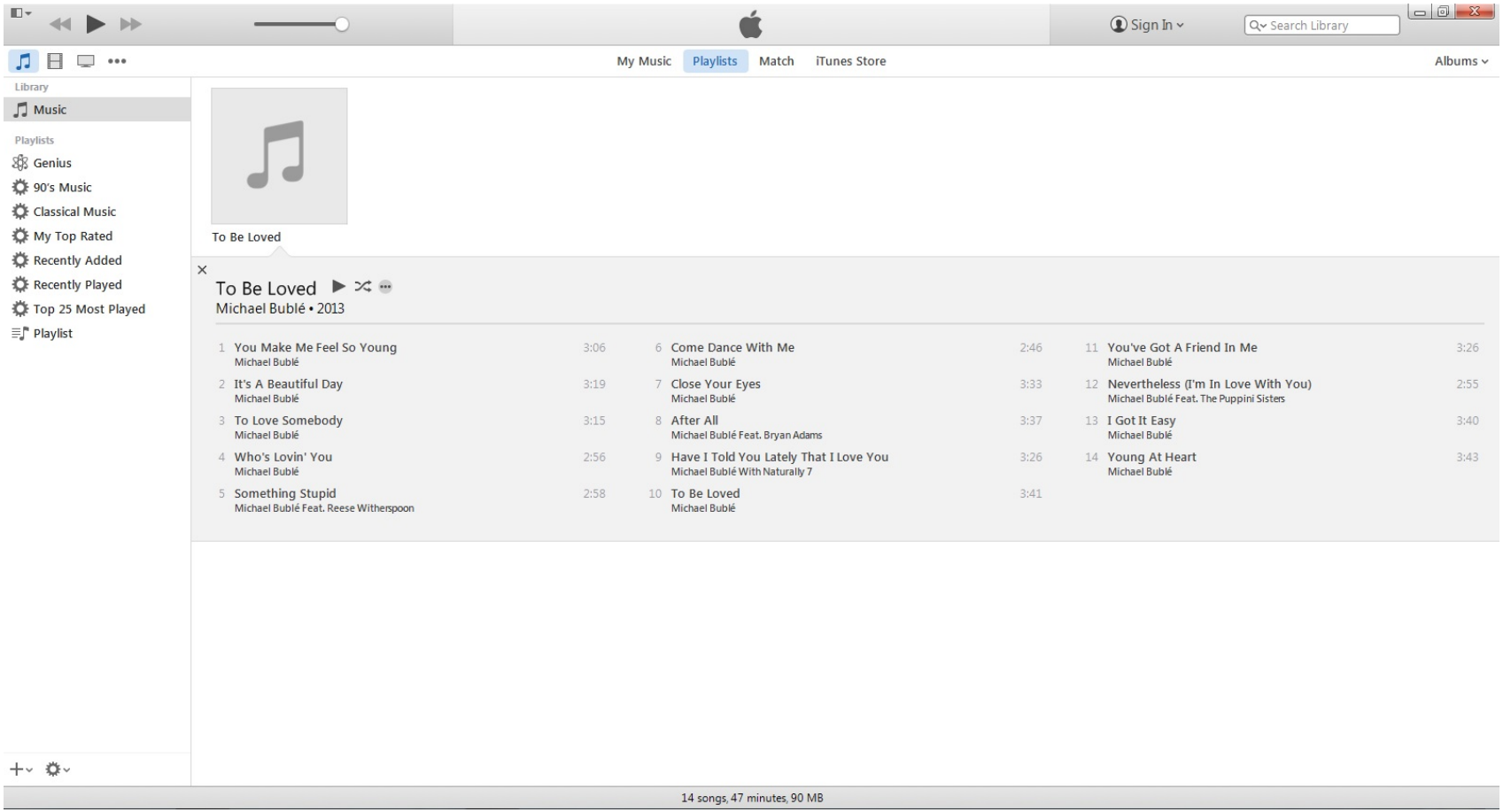
Answer

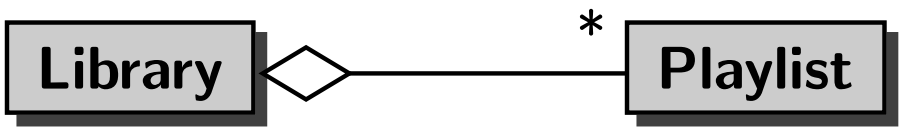
A collection is a special type of aggregation where the number of components may vary.

We do *not* implement collections (yet), we use collections as an aggregate.

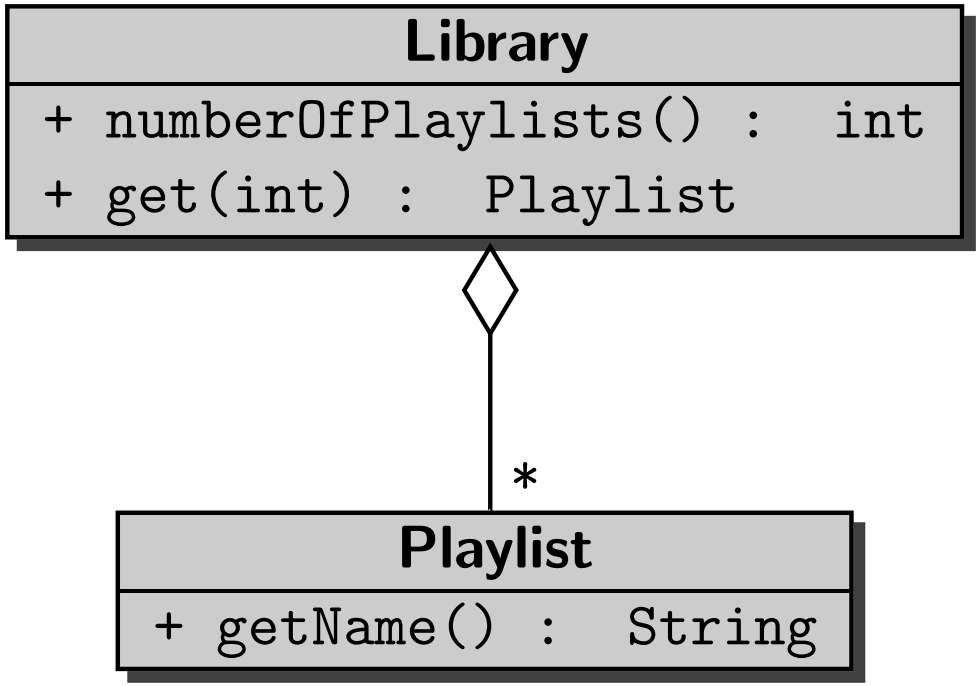
ITunes


Sign In
Search Library
My Music
Playlists
Match
iTunes Store
Albums
Library
Music
Playlists
Genius
90's Music
Classical Music
My Top Rated
Recently Added
Recently Played
Top 25 Most Played
Playlist
To Be Loved
To Be Loved
Michael Bublé • 2013
1 You Make Me Feel So Young 3:06
Michael Bublé
2 It's A Beautiful Day 3:19
Michael Bublé
3 To Love Somebody 3:15
Michael Bublé
4 Who's Lovin' You 2:56
Michael Bublé
5 Something Stupid 2:58
Michael Bublé Feat. Reese Witherspoon
6 Come Dance With Me 2:46
Michael Bublé
7 Close Your Eyes 3:33
Michael Bublé
8 After All 3:37
Michael Bublé Feat. Bryan Adams
9 Have I Told You Lately That I Love You 3:26
Michael Bublé With Naturally 7
10 To Be Loved 3:41
Michael Bublé
11 You've Got A Friend In Me 3:26
Michael Bublé
12 Nevertheless (I'm In Love With You) 2:55
Michael Bublé Feat. The Puppini Sisters
13 I Got It Easy 3:40
Michael Bublé
14 Young At Heart 3:43
Michael Bublé
14 songs, 47 minutes, 90 MB

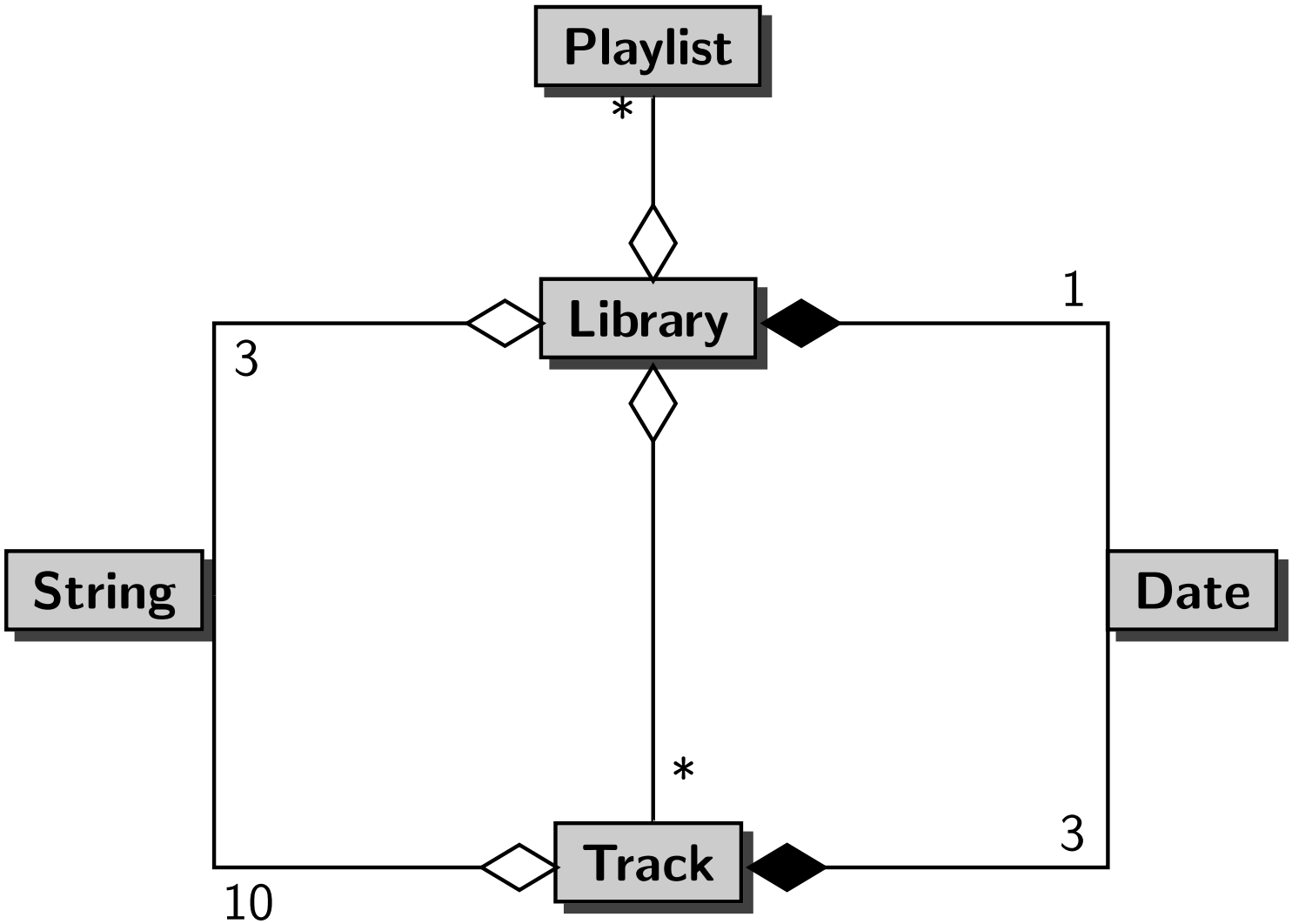
UML Diagrams



UML Diagrams



UML Diagrams



ITunes

Question

Implement this API.

Question

Which methods of the `Library` class are related to play lists?

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Answer

`get(int)` and `numberOfPlayLists`.

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Assume we introduce an attribute named `playLists` to represent the play lists of this library. What is the type of `playLists`?

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Which methods of the `Library` class are related to play lists?

Answer

`get(int)` and `numberOfPlayLists`.

Question

Assume we introduce an attribute named `playLists` to represent the play lists of this library. What is the type of `playLists`?

Answer

`List<PlayList>` (other collections can be used as well).

Problem

Declare the attribute `playLists`.

Library

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Add an accessor and mutator for the attribute `playLists`.

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Problem

Implement the method `get(int)`.

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Answer

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Assume we introduce an attribute named `tracks` to represent the tracks of this library. What is the type of `tracks`?

Answer

`Map<Integer, Track>` (other collections can be used as well).

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Problem

Declare the attribute `tracks`.

Problem

Add an accessor and mutator for the attribute `tracks`.

Problem

Initialize the attribute `tracks` in the constructor.

Problem

Implement the method `getTrack(int)`.

Problem

Implement the method `iterator`.

Iterable

Question

What kind of entity is `Iterable`?

Iterable

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Answer

`Iterable` is an interface.

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Answer

`Iterable` is an interface.

Question

For an implementer, what does `implements Iterable` entail?

Answer

The implementer has to implement all methods in the interface `Iterable`.

Iterable

Question

Which methods does the interface `Iterable` contain?

Iterable

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`iterator`.

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Note

If a class implements the `Iterable` interface then we can use the advanced for loop.

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Answer

`iterator`.

Note

If a class implements the `Iterable` interface then we can use the advanced for loop.

Example

```
for (Track track : library)
{
    ...
}
```