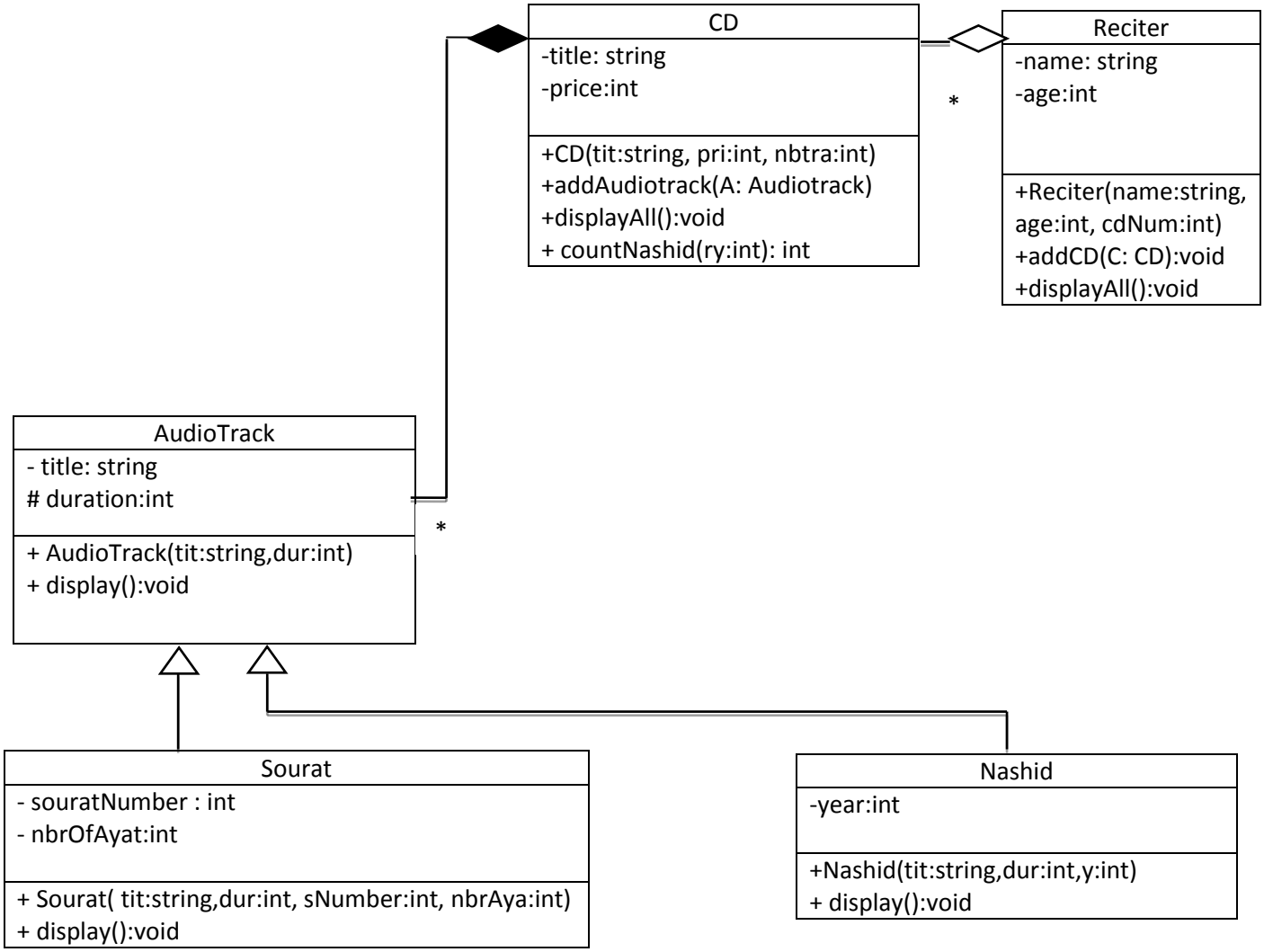
King Saud University
College of Computer and Information Sciences
Department of Computer Science
CSC 113 – Computer Programming II Mid Term 1 Exam

Question1: Consider the following UML class diagrams.



AudioTrack class

o ATTRIBUTES:

- ***title***: title of the audio track
- ***duration***: duration of the audio sequence in minutes.

o METHODS:

- ***AudioTrack(tit:string,dur:int): constructor.***
- ***display()***:

  For Sourat: this method prints souratNumber and nbrOfAyat.

  For Nashid: this method prints the year.

CD class
o ATTRIBUTES:
- ***title:*** title of the CD.
- ***price***: price of the CD.

o METHODS:
- ***CD(tit:string, pri:int, size:int):*** constructor.
- ***AddAudioTrack (A: Audiotrack):*** this methods adds a new AudioTrack object to the CD.
- ***displayAll():*** this method prints the attributes of all the objects that belong to the CD.
- ***countNashid*****(ry:int): int** : this method counts the number of Nashid recorded during the year ry.

Reciter class
o ATTRIBUTES:
- ***name:*** name of the reciter.
- ***age:*** age of the recite.

o METHODS:
- ***Reciter(name: string, age: int, size: int):*** constructor**.**
- ***addCD(C: CD):*** This method adds a new CD object to CDs of the reciter.
- ***displayAll()***: this method prints all the attributes of all the objects belong to the CDs of the reciter.

Sourat class
o ATTRIBUTES:
- ***souratNumber:*** number of the sourat
- ***nbrOfAyat***: number of ayat in the sourat

o METHODS:
- ***Sourat(tit: string, dur:int, sNumber:int, nbraya: int):*** constructor**.**

Nashid class
o ATTRIBUTES:
- ***year***: recorded year of the nashid

o METHODS:
- ***Nashid(tit: string, dur:int, ry: int):*** constructor**.**
- ***Nashid(nsh: Nashid)***: copy constructor

QUESTION: Translate into Java code ***AudioTrack***, ***Sourat***, ***CD*** and ***Reciter*** classes only, taking into consideration the above specifications.
Note: We consider that setters/getters methods of all the classes are implemented

Question 2:

Write a class ***Application*** that contains a ***main()*** method to implement the following in the given order:

- Create a ***CD*** object **CD1** that contains 3 audio tracks.
    - Sourat: Title: Al Rahman, duration: 5 mn, Sourat#: 55 , Number of Ayat: 78
    - Sourat: Title: Al Kahef , duration: 9 mn, Sourat#: 18 , Number of Ayat: 110
    - Nashid: Title: Allahou Akbar, duration: 4 mn, year: 2011
- Create a ***CD*** object **CD2** that contains 2 audio tracks.
    - Sourat: Title: Al Shams, duration: 2 mn, Sourat#: 91 , Number of Ayat: 15
    - Nashid: Title: Al sabah, duration: 7 mn, year: 2011
- Add the audio tracks to CD1 and CD2.
- Create a Reciter object that contains the following information:
    - Name: " Bader", age: 45
- Add to the Reciter object CD1 and CD2.
- Display the number of Nashid recorded during the year 2011 in the CD1 and CD2 created earlier.