



THE UNIVERSITY OF THE WEST INDIES  
ST. AUGUSTINE

Department of Computing and Information Technology  
**COMP3550/INFO3410**

**Coursework Exam**

*Date: Wednesday 22<sup>nd</sup> November 2017*

*3:00pm*

**Section 1**

- a) Identify with examples three differences between List and Dictionaries in Python. [3]
- b) Identify with examples three differences between Python and JavaScript. [3]
- c) Create an empty object in JavaScript. [2]
- d) Draw an architectural diagram for the simplest version of the High Availability Architecture. Use the diagram to illustrate how horizontal scaling can be achieved. [6]
- e) List 2 differences between Cloud Hosting and Virtual Private Servers for hosting web applications. [4]

**[Total 18]**

**Section 2**

- a) Identify each of the terms within the MVC architectural design pattern. [3]
- b) Justify why the use of the MVC pattern is needed for backend web-applications. [4]
- c) Explain with examples the difference between an Idempotent and a Safe HTTP method. [4]
- d) The users stored in the server's database can be accessed via the URI "example.com/users". List the HTTP method and URI combination that can be used to perform all four CRUD data operations on a specific user with the id 32. [4]

**[Total 14]**

### Section 3

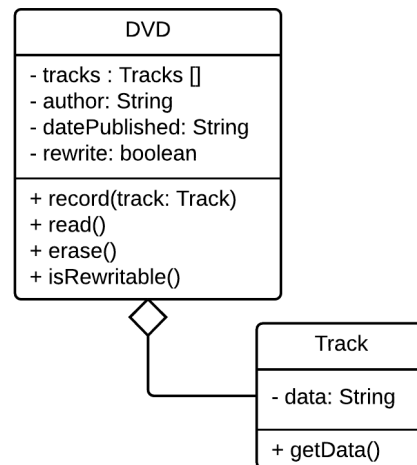


Figure 1 UML and Class for DVD and Track

The UML diagram describes the details for a DVD, which comprises of many tracks. Implement the following in both Python and JavaScript/Typescript.

- Implement constructor for both the DVD and Track class to initialize attributes with reasonable default. [4]
- The **record** method receives a track as its parameter and stores it in the collection of Tracks in the variable called “Tracks”. [6]
- The **erase** method removes all of the tracks from the DVD. [2]
- The **isRewritable** will return true if DVD can be erased, assume that a variable can be set to determine the DVD writable status. [2]

[Total 14]

**Total 46 Marks**

**End of Examination**