

COP 2335C

Lab 5

25 points

Inheritance

File Names: *DetailedTime.h*, *DetailedTime.cpp*, *DetailedTimeMain.cpp*

Derive a new class, named **DetailedTime**, from your **Time** class. Your derived class should:

- (1 pts) Add an additional *int* field to hold the **seconds**.
- (3 pts) Add a default constructor that initializes the **seconds** data member to 0.
- (3 pts) Add a parameter constructor that initializes the **hours**, **minutes** and **seconds** data members to the values passed to the function. (This constructor should call the base class parameter constructor.)
- (3 pts) **Overload** the **SetTime()** to **SetTime(int, int, int)** function to include a parameter for the **seconds** data member. (This function should call the base class **SetTime()** function.)
- (2 pts) Add a **SetSeconds()** member function.
- (2 pts) Add a **GetSeconds()** member function.
- (3 pts) **Redefine** the **PrintTime()** function to include the seconds in the following format: **6:30:08 pm** (This function should call the base class **PrintTime()** function.)
- (4 pts) Create a UML diagram to represent the Time class hierarchy.
- (4 pts) Write a small **main()** function to test your original **Time** class and your derived **DetailedTime** class. Be sure to test all member functions of the object.