Exercise 05 – Classes and objects

1. a) Create a class time that contains the variables hours, minutes and seconds
   1. Create a function called convertSeconds(int seconds) that gets as an input an integer values of seconds. The method should convert the second into hour, minutes and second and return the time object.

Static Time convertSeconds(int seconds){

Time t = new Time();

//perform conversion and assign values

return t;

}

* 1. Create a main class that asks the user to input an integer value of seconds. Convert the seconds using the convertSeconds method and print it to the console.

import java.util.Scanner;  
  
public class TIme {  
int hours;  
int min;  
int sec;  
  
  
  
  
  
 static TIme Convert(int sec) {  
  
 TIme mytime = new TIme();  
 mytime.hours = sec / 3600;  
 mytime.min = (sec % 3600) / 60;  
 mytime.sec = sec % 60;  
 return mytime;  
  
  
 }  
 public static void main (String[]arg){  
 Scanner mynum = new Scanner(System.*in*);  
 TIme mytime= *Convert*(mynum.nextInt()100000);  
 System.*out*.println(mytime.hours+":"+mytime.min+":"+mytime.sec);}  
  
  
  
  
  
}

1. a) Create a class Date that contains days, month and year as variable.
   1. Write a method that print dates in the following format: day.month.year - *static void printDate(Date d)*
   2. Write a method that can return the number of days between two days. Take leap years into account (if too complicated you can skip the leap year part) You will need to create two methods: *static int dayDiff(Date d1, Date d2)* – Calculated the difference which uses the following method for the calculation: *static int daysSince0(Date d)*- Return the number of days since 1.1.0000 (assuming

Gregorian calendar)

* 1. Print the two dates and the difference in days.

1. public class Date {  
    int year, day, month;  
     
     
     
     
     
    static Date Datediff1(int year,int day,int month) {  
     
    Date D1 = new Date();  
     
    D1.year = year \* 365;  
    D1.month = month \* 31 - 6;  
    D1.day = day % 31;  
     
    return (D1);}  
     
     
    static Date Datediff2(int year,int day,int month){  
    Date D2 = new Date();  
    D2.year = year \* 365;  
    D2.month = month \* 31 - 6;//added - 6 due to every second month beeing 30 days long.  
    D2.day = day % 31;  
    return (D2);  
     
     
    }  
     
     
    public static void main (String[]args) {  
     
   Date D1 , D2;  
     
   D1= *Datediff1*(1987,1,1);  
   D2= *Datediff2*(1282,1,12);  
     
    int D1tot = D1.day + D1.month + D1.year;  
    int D2tot = D2.day + D2.month + D2.year;  
    int diff = D1tot - D2tot;  
     
     
     
     
     
     
     
    System.*out*.println("diff is " + diff + "days total or " + diff/365 + "years or "+ diff/365\*12+" months" );  
     
    }}

Sample inputs:

12 3 2001 3 4 2001

14 7 1789 12 3 2001

14 7 1789 4 7 1776

12 3 2001 12 3 2001

1 1 0000 30 8 2001