Week 2 – Workshop

Fundamental Programming Structures in Java

1 - Variables – Primitive Datatypes

Exercise 1.1 Modify the program covered in class to convert degrees Celsius to degrees Fahrenheit.
Hint: Use the formula F = C*9/5 + 32

Exercise 1.2 Write a Java program to calculate the area of a circle. Recall that the area of circle is given by
Area = (pi)*radius*radius (i.e. pi * r^2). Try it with several different values for the radius and use 3.14 for pi.

Exercise 1.3 *Compound Interest.* Using the compound Interest Formula
$A = P * (1 + r)^n$

where A is the amount, r is the interest rate per time period, and n is the number of time periods.

Write a Java program to calculate and display the result from a $ 5000.00 investment that pays a 4% interest rate per year for 10 years.

Exercise 1.4 The diameter of the Sun is approximately 865,000 miles. The diameter of the earth is approximately 7,600 miles.
Use the methods in Math class to write a Java program calculate and display:
a.) The volume of the Earth in cubic miles.
b.) The volume of the Sun in cubic miles.
c.) The ratio of the Sun to the volume of the Earth.
Volume of sphere = (4/3) * pi * r^3
where r = radius = diameter/2
and pi = 3.14

Exercise 1.5 *Fuel consumption.* A motor car use 8 liters of fuel per 100 kilometers of normal road and 15% more fuel on rough roads. Write a Java program to calculate and display the distance the car can travel on a full tank of 40 liters of fuel on both normal and rough roads.

Questions- Chapter 4- Malik D.A. Java Programming :From Program Analysis to Program Design 5th Edition, Course Technology, 2012.
Ivor Horton Wrox Press, 2002 - Java (Computer program language)