Day 3 - Programs at Bootcamp

Section A - Elements of Programing :- Condition, Loops and Logical Programming

1. Write a program Stats5.java that prints five uniform random values between 0 and 1, their average value, and their minimum and maximum value. Use Math.random(), Math.min(), and Math.max().

2. Write a program *WindChill.java* that takes two double command-line arguments t and v and prints the wind chill. Use Math.pow(a, b) to compute ab.

   Given the temperature t (in Fahrenheit) and the wind speed v (in miles per hour), the National Weather Service defines the effective temperature (the wind chill) to be:

   $$w = 35.74 + 0.6215\,t + (0.4275\,t - 35.75)\,v^{0.16}$$

   Note: the formula is not valid if t is larger than 50 in absolute value or if v is larger than 120 or less than 3 (you may assume that the values you get are in that range).

Day 3 - Programs at Home

Section A - Elements of Programing :- Condition, Loops and Logical Programming

1. Write a program *DayOfWeek.java* that takes a date as input and prints the day of the week that date falls on. Your program should take three command-line arguments: m (month), d (day), and y (year). For m use 1 for January, 2 for February, and so forth. For output print 0 for Sunday, 1 for Monday, 2 for Tuesday, and so forth. Use the following formulas, for the Gregorian calendar (where / denotes integer division):

   $y_0 = y - (14 - m) / 12$
   $x = y_0 + y_0/4 - y_0/100 + y_0/400$
   $m_0 = m + 12 \times ((14 - m) / 12) - 2$
   $d_0 = (d + x + 31m_0/ 12) \bmod 7$

2. Write a program *CarLoan.java* that reads in three command-line arguments P, Y, and R and calculates the monthly payments you would have to make over Y years to pay

off a P principal loan amount at R per cent interest compounded monthly. The formula is The formula is

$$\text{payment} = \frac{P\,r}{1 - (1 + r)^{-n}}, \quad \text{where } n = 12 * Y, \ r = R / (12 * 100)$$