CS 5040: Data Structures and Algorithms

Know Your Integrated Development Environment

Goal: Become familiar with Java and JGrasp Integrated Development Environment (IDE).

- Use JGrasp to type, compile, and run (execute) the following programs.
- Name and save each program using the class name. Save all programs in one folder for future reference.
- These programs illustrate essential programming features and syntax that you may use in class assignments.

Save all programs in one folder for future reference.

```
================================= Program CountDown.java ==============================
// Program CountDown.java
// Demonstrate the difference between print and println methods.
public class CountDown
{
   // Prints two lines of output representing a rocket countdown.
   public static void main (String[] args)
   {
      System.out.print ("Three... ");
      System.out.print ("Two... ");
      System.out.print ("One... ");
      System.out.print ("Zero... ");
      System.out.println ("Liftoff!"); // appears on first line
      System.out.println ("Houston, we have a problem.");
   }
}
```

```
================================= Program Addition.java ===============================
// Program Addition.java
// Demonstrate the difference between the mathematical addition and string concatenation.
public class Addition
{
   // Concatenates and adds two numbers and prints the results.
   public static void main (String[] args)
   {
      System.out.println ("24 and 45 concatenated: " + 24 + 45);
      System.out.println ("24 and 45 added: " + (24 + 45));
   }
}
```

```
================================= Program Roses.java ==================================
// Program Roses.java
// Demonstrates the use of escape sequences for new line and tabs.
public class Roses
{
   // Prints a poem (of sorts) on multiple lines.
   public static void main (String[] args)
   {
     System.out.println ("Roses are red,\n\tViolets are blue,\n" +
        "Sugar is sweet,\n\tBut I have \"commitment issues\",\n\t" +
        "So I'd rather just be friends\n\tAt this point in our " +
        "relationship.");
   }
}
```

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```
================================== Program Echo.java ==================================
// Program Echo.java
// Demonstrate reading a string input from the user.
import java.util.Scanner;
public class Echo
{
   // Reads a character string from the user and prints it.
   public static void main (String[] args)
   {
      String message;
      Scanner scan = new Scanner (System.in);
      System.out.println ("Enter a line of text:");
      message = scan.nextLine();
      System.out.println ("You entered: \"" + message + "\"");
   }
}


================================== Program GasMileage.java ============================
// Program GasMileage.java
// Demonstrate the use of the Scanner class to read numeric data from the user.
import java.util.Scanner;
public class GasMileage
{
   // Calculates fuel efficiency based on values entered by the user.
   public static void main (String[] args)
   {
     int miles;
     double gallons, mpg;
     Scanner scan = new Scanner (System.in);
     System.out.print ("Enter the number of miles: ");
     miles = scan.nextInt();

     System.out.print ("Enter the gallons of fuel used: ");
     gallons = scan.nextDouble();

     mpg = miles / gallons;
     System.out.println ("Miles Per Gallon: " + mpg);
  }
}


================================== Program Facts.java ================================
// Program Facts.java
// Demonstrate string concatenation and conversion of an integer to a string.
public class Facts
{
   // Prints various facts.
   public static void main (String[] args)
   {
     // Strings can be concatenated into one long string
     System.out.println ("We present the following facts for your "
       + "extracurricular edification:");
     System.out.println ();

     // A string can contain numeric digits
     System.out.println ("Letters in the Hawaiian alphabet: 12");

     // A numeric value can be concatenated to a string
     System.out.println ("Dialing code for Antarctica: " + 672);
     System.out.println ("Year in which Leonardo da Vinci invented "
         + "the parachute: " + 1515);
      System.out.println ("Speed of ketchup: " + 40 + " km per year");
   }
}
```

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