Assignment: Day2_Java_Assignment1

1. Primitive Data Types

Solution:

```
int age = 25;
float height = 5.9f;
double weight = 68.5;
System.out.println("Age: " + age);
System.out.println("Height: " + height);
System.out.println("Weight: " + weight);
```

2. Variables

Solution:

```
int id = 101;
String name = "Arun";
double marks = 89.5;
char grade = 'A';
System.out.println("Student ID: " + id);
System.out.println("Name: " + name);
System.out.println("Marks: " + marks);
System.out.println("Grade: " + grade);
```

3. Operators

Solution:

```
int number1 = 10, number2 = 20;
System.out.println("Addition: " + (number1 + number2));
System.out.println("Greater number: " + (number1 > number2 ? number1 : number2));
System.out.println("Are both positive? " + (number1 > 0 && number2 > 0));
```

4. String Concatenation

Solution:

```
String firstName = "Ravi";
```

```
String lastName = "Kumar";
System.out.println("Hello, " + firstName + " " + lastName + "! Welcome to the system.");
```

5. StringBuilder

Solution:

```
String input = "Hello Java Learners";
StringBuilder sb = new StringBuilder(input);
System.out.println("Original: " + input);
System.out.println("Reversed: " + sb.reverse());
```

6. String API

Solution:

```
String text = "banana";
char ch = 'a';
long count = text.chars().filter(c -> c == ch).count();
System.out.println("Character '" + ch + "' appears " + count + " times.");
```

7. Date, Time, and Numeric Objects

Solution:

```
import java.text.NumberFormat;
import java.time.LocalDate;
import java.time.format.DateTimeFormatter;
LocalDate date = LocalDate.now();
DateTimeFormatter formatter = DateTimeFormatter.ofPattern("dd-MM-yyyy");
System.out.println("Current Date: " + date.format(formatter));
double amount = 12345.678;
System.out.println("Formatted Amount: " + NumberFormat.getCurrencyInstance().format(amount));
```

8. Flow Control

Solution:

```
int number = -5;
if (number > 0) System.out.println("The number is positive.");
else if (number < 0) System.out.println("The number is negative.");
```

```
else System.out.println("The number is zero.");
```

9. Conditions

Solution:

```
int marks = 76;
if (marks >= 90) System.out.println("Grade: A");
else if (marks >= 80) System.out.println("Grade: B");
else if (marks >= 70) System.out.println("Grade: C");
else System.out.println("Grade: D");
```

10. Switch

Solution:

```
int num1 = 10, num2 = 5;
char op = '*';
switch (op) {
  case '+': System.out.println("Result: " + (num1 + num2)); break;
  case '-': System.out.println("Result: " + (num1 - num2)); break;
  case '*': System.out.println("Result: " + (num1 * num2)); break;
  case '/': System.out.println("Result: " + (num1 / num2)); break;
  default: System.out.println("Invalid operation");
}
```

11. Loops and Branching

Solution:

```
int N = 5;
for (int i = 0; i < N * 2; i += 2) {
    System.out.print(i + " ");
}
```

12. Arrays

Solution:

```
int[] numbers = {10, 20, 30, 40, 50};
double avg = 0;
```

```
for (int num : numbers) avg += num;
avg /= numbers.length;
System.out.println("Average: " + avg);
```

13. Enum

Solution:

```
enum Day { MONDAY, TUESDAY, WEDNESDAY, THURSDAY, FRIDAY, SATURDAY, SUNDAY }
Day today = Day.MONDAY;
switch (today) {
  case MONDAY: System.out.println("Start of the work week!"); break;
  // Add other cases as needed
}
```

14. OOPs Concepts

Solution:

```
class Student {
  String name;
  int marks;
  Student(String name, int marks) {
    this.name = name;
    this.marks = marks;
  }
  void display() {
    System.out.println("Student Name: " + name);
    System.out.println("Marks: " + marks);
  }
}
Student s = new Student("Riya", 87);
s.display();
```

15. Inheritance

Solution:

```
class Employee {
```

```
  String name;
  double salary;
  Employee(String name, double salary) {
    this.name = name;
    this.salary = salary;
  }
}
class Manager extends Employee {
  String department;
  Manager(String name, double salary, String department) {
    super(name, salary);
    this.department = department;
  }
  void display() {
    System.out.println("Name: " + name);
    System.out.println("Salary: " + salary);
    System.out.println("Department: " + department);
  }
}
Manager m = new Manager("Raj", 50000, "Sales");
m.display();
```