```java
package PrimitiveDataTypes;
//Challenge: Declare and initialize variables of all primitive types and print their default values.
public class Challenge1 {
  static int intDefaultValue;
  static char charDefaultValue;
  static float floatDefaultValue;
  static double doubleDefaultValue;
  static boolean booleanDefaultValue;
        static byte byteDefaultValue;
  static short shortDefaultValue;
  static long longDefaultValue;

        public static void main(String[] args) {
    System.out.println("int:" + intDefaultValue);
    System.out.println("char:'" + charDefaultValue);
    System.out.println("float:" + floatDefaultValue);
    System.out.println("double:" + doubleDefaultValue);
    System.out.println("boolean:" + booleanDefaultValue);
                System.out.println("byte:" + byteDefaultValue);
    System.out.println("short:" + shortDefaultValue);
    System.out.println("long:" + longDefaultValue);
    }
}
```

```java
package PrimitiveDataTypes;
import java.util.Scanner;
//Challenge: Write a program to detect overflow when adding two byte variables.
public class Challenge2 {
        public static void main(String[] args) {
                Scanner input = new Scanner(System.in);
    System.out.print("Enter first byte value (between -128 to 127): ");
    byte a = input.nextByte();
    System.out.print("Enter second byte value (between -128 to 127): ");
    byte b = input.nextByte();
    int result = a + b;
    if (result > Byte.MAX_VALUE|| result < Byte.MIN_VALUE) {
       System.out.println("Overflow '" + a +"' and '" + b +"' = " + result);
    } else {
       byte sum = (byte) result;
       System.out.println("Sum for: " + a + " and " + b + " = " + sum);
    }
    input.close();
        }
}
```

```java
package PrimitiveDataTypes;
//Challenge: Use type casting to convert double to int and float to byte
```

```
public class Challenge3 {
	public static void main(String[] args) {
		double a = 100000.00;
		float b = (float) 14.56;

		int a1 = (int) a;
		byte b1 = (byte) b;

	System.out.println("Original double value is: " +a+" after converting to int is: "+ a1 );
	System.out.println("Original float value is: " +b+" after converting to byte is: "+ b1 );

	}
}


package PrimitiveDataTypes;
//Challenge: Perform bitwise operations between int and byte
public class Challenge4 {
	public static void main(String[] args) {
		int a = 2;
		byte b = 10;

		System.out.println("a & b = "+ (a&b));
		System.out.println("a | b = "+ (a|b));
		System.out.println("a ^ b = "+ (a^b));
		System.out.println("~a = "+ (~a));
		System.out.println("b<<2 = "+ (b<<2));
		System.out.println("a>>2 = "+ (a>>2));
		System.out.println("a>>>2 = "+ (a>>>2));
	}
}


package PrimitiveDataTypes;
import java.util.Scanner;
//Challenge: Accept input for all primitive types and display them formatted
public class Challenge5 {
	public static void main(String[] args) {
		Scanner sc = new Scanner(System.in);

		System.out.print("Enter an int:");
    int i = sc.nextInt();

    System.out.print("Enter a char:");
    char c = sc.next().charAt(0);

    System.out.print("Enter a float:");
    float f = sc.nextFloat();
```

```
        System.out.print("Enter a double:");
        double d = sc.nextDouble();

        System.out.print("Enter a boolean:");
        boolean bool = sc.nextBoolean();

        System.out.print("Enter a byte:");
        byte b = sc.nextByte();

        System.out.print("Enter a short:");
        short s = sc.nextShort();

        System.out.print("Enter a long:");
        long l = sc.nextLong();

        sc.close();
        System.out.println("\nFormatted Outputs:\nint: "+i+"\nchar: "+c+"\nfloat: "+f+"\ndouble:
"+d+"\nboolean: "+bool+"\nbyte: "+b+"\nshort: "+s+"\nlong: "+l);
            }
}
```