CS 534 | Ozyegin University
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Version 0.

```
public class AccountTest {
  public static void main(String[] args) {
    int account1number = 1;
    double account1balance = 100;
    String account1currency = "TL";

    int account2number = 2;
    double account2balance = 200;
    String account2currency = "USD";

    System.out.println("Account " + account1number
        + " has " + account1balance
        + " " + account1currency + ".");
    System.out.println("Account " + account2number
        + " has " + account2balance
        + " " + account2currency + ".");

    // Deposit 50TL into account 1
    account1balance = account1balance + 50;

    // Deposit 300 USD into account 2
    account2balance = account2balance + 300;

    System.out.println("Account " + account1number
        + " has " + account1balance
        + " " + account1currency + ".");
    System.out.println("Account " + account2number
        + " has " + account2balance
        + " " + account2currency + ".");
  }
}
```

Version 1.

```
public class Account {
  int number;
  double balance;
  String currency;
}

public class AccountTest {
  public static void main(String[] args) {
    Account account1 = new Account();
    account1.number = 1;
    account1.balance = 100;
    account1.currency = "TL";

    Account account2 = new Account();
    account2.number = 2;
    account2.balance = 200;
    account2.currency = "USD";

    System.out.println("Account " + account1.number
        + " has " + account1.balance
        + " " + account1.currency + ".");
    System.out.println("Account " + account2.number
        + " has " + account2.balance
        + " " + account2.currency + ".");

    // Deposit 50TL into account 1
    account1.balance = account1.balance + 50;

    // Deposit 300 USD into account 2
    account2.balance = account2.balance + 300;

    System.out.println("Account " + account1.number
        + " has " + account1.balance
        + " " + account1.currency + ".");
    System.out.println("Account " + account2.number
        + " has " + account2.balance
        + " " + account2.currency + ".");
  }
}
```

Version 2.

```
public class Account {
  int number;
  double balance;
  String currency;

  public void report() {
    System.out.println("Account " + number
        + " has " + balance
        + " " + currency + ".");
  }
}

public class AccountTest {
  public static void main(String[] args) {
    Account account1 = new Account();
    account1.number = 1;
    account1.balance = 100;
    account1.currency = "TL";

    Account account2 = new Account();
    account2.number = 2;
    account2.balance = 200;
    account2.currency = "USD";

    account1.report();
    account2.report();

    // Deposit 50TL into account 1
    account1.balance = account1.balance + 50;

    // Deposit 300 USD into account 2
    account2.balance = account2.balance + 300;

    account1.report();
    account2.report();
  }

}
```

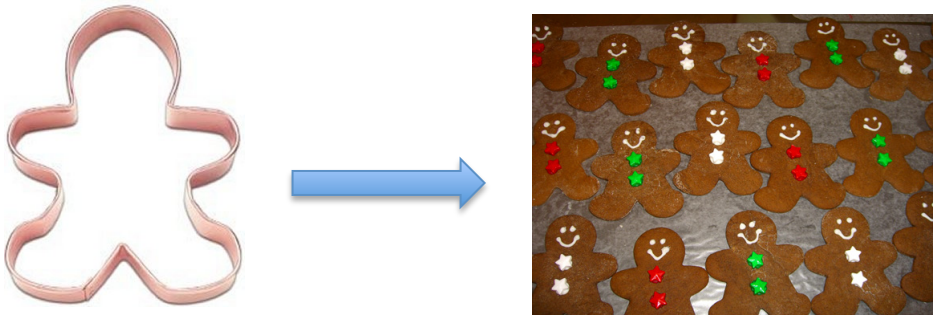
Version 3.

```
public class Account {
  int number;
  double balance;
  String currency;

  public void report() {
    System.out.println("Account " + number
        + " has " + balance
        + " " + currency + ".");
  }

  public void deposit(double d) {
    balance = balance + d;
  }
}

public class AccountTest {
  public static void main(String[] args) {
    Account account1 = new Account();
    account1.number = 1;
    account1.balance = 100;
    account1.currency = "TL";

    Account account2 = new Account();
    account2.number = 2;
    account2.balance = 200;
    account2.currency = "USD";

    account1.report();
    account2.report();

    // Deposit 50TL into account 1
    account1.deposit(50);

    // Deposit 300 USD into account 2
    account2.deposit(300);

    account1.report();
    account2.report();
  }
}
```

An object groups some data and allows performing operations on the data.

Class is a specification of what types of data we can **encapsulate** in an object, plus the operations we can perform on the objects. From a class definition, we can **instantiate/create** many objects. These objects are called **instances** of their class. Each object has its own data. The operations defined in a class are called **methods**.

Instantiation is analogous to making cookies from a cookie cutter. In this case, the cookie cutter is the class, it specifies the shape of each cookie. Cookies are objects, the values of their fields (e.g. color of buttons) may be different. Each object has its own identity, but they are created from the same specification.



Version 4.

```
public class Account {
  int number;
  double balance;
  String currency;

  // Constructor
  public Account(int n, double b, String c) {
    number = n;
    balance = b;
    currency = c;
  }

  public void deposit(double d) {
    balance = balance + d;
  }

  public void report() {
    System.out.println("Account " + number
        + " has " + balance
        + " " + currency + ".");
  }
}

public class AccountTest {
  public static void main(String[] args) {
    Account account1 = new Account(1, 100, "TL");

    Account account2 = new Account(2, 200, "USD");

    account1.report();
    account2.report();

    // Deposit 50TL into account 1
    account1.deposit(50);

    // Deposit 300 USD into account 2
    account2.deposit(300);

    account1.report();
    account2.report();
  }
}
```