

Checklist for defining an Object in Java

Step 1: Identify the name of your object, its attributes, and its behavior.

- Objects are generally nouns that can be described by their attributes (adjectives) and their behavior (verbs)
- The attributes are the variables used to describe the object. These are the **private instance variables**.
- The behavior of an object is its **methods**. These describe what the object does, or what can be done to process the data on the object.
 - o **Void methods** will process data on your object but will not actually return or give you data to print
 - o **Methods with a return statement** will allow you to access private data or will output data that you can print

Step 1 Example:

Object: Facebook User

Attributes or "instance variables": username, email, number of friends, employer, profile Photo

Methods or behavior: Add friends, change the number of friends, change your employer, etc.

Step 2: Write the class header for your object.

```
public class FacebookUser
{
    // your code to define the object will go here
}
```

Step 3: Declare private instance variables within your class, directly after the class header

```
public class FacebookUser
{
    private String userName;
    private int numFriends;
}
```

Step 4: Define your constructors. You may not want or need a "no-args" constructor!

```
public class FacebookUser
{
    private String userName;
    private int numFriends;

    public FacebookUser(String user, int numF)
    {
        username = user;
        numFriends = numF;
    }
}
```

Step 5: Define “accessor” methods to “get” the data

```
public class FacebookUser
{
    private String userName;
    private int numFriends;

    public FacebookUser(String user, int numF)
    {
        username = user;
        numFriends = numF;
    }

    public String getUserName()
    {
        return userName;
    }

    public int getNumFriends()
    {
        return numFriends;
    }
}
```

Step 6: Define mutator methods to set or change the data

```
public class FacebookUser
{
    private String userName;
    private int numFriends;

    public FacebookUser(String user, int numF)
    {
        username = user;
        numFriends = numF;
    }

    public String getUserName() {
        return userName;
    }

    public int getNumFriends() {
        return numFriends;
    }

    public void setUserName(String user)
    {
        username = user;
    }

    public void setNumFriends(String n)
    {
        numFriends = n;
    }
}
```