Working with Strings

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Overview

String class

String equality

String methods

String conversions

StringBuilder

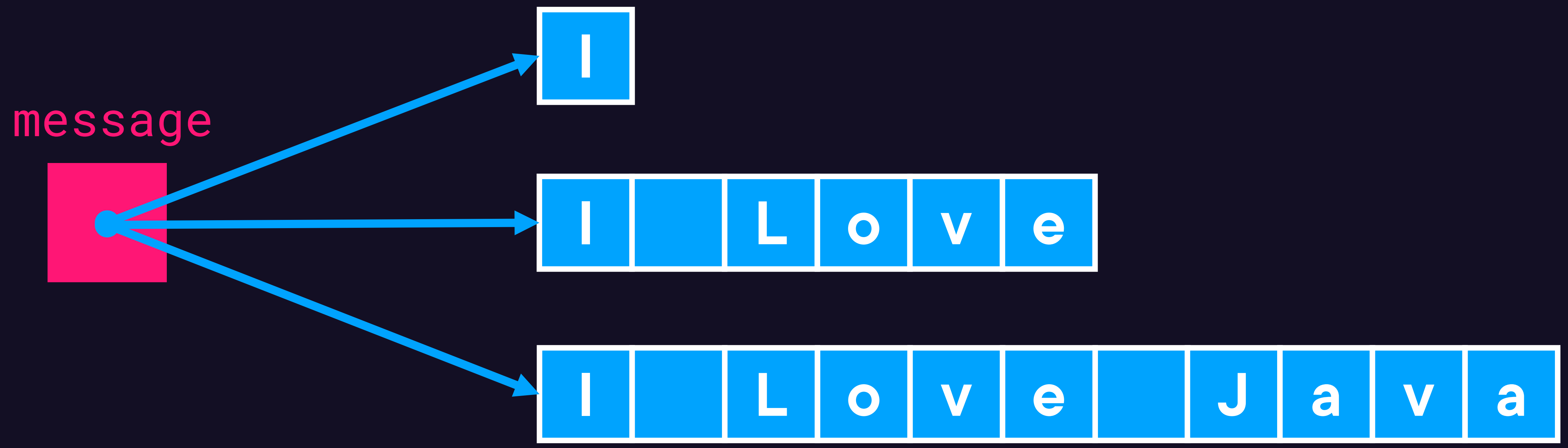
```
String name = “Jim”;
String greeting = “Hello ” + name;
System.out.println(greeting); // Hello Jim
greeting += “ good to see you!”;
System.out.println(greeting); // Hello Jim good to see you!
```

String Class

Stores a sequence of Unicode characters

- Literals are enclosed in double quotes
- Values can be concatenated using + and +=

```
String message = “I”;
message += “ Love”;
message += “ Java”;
```

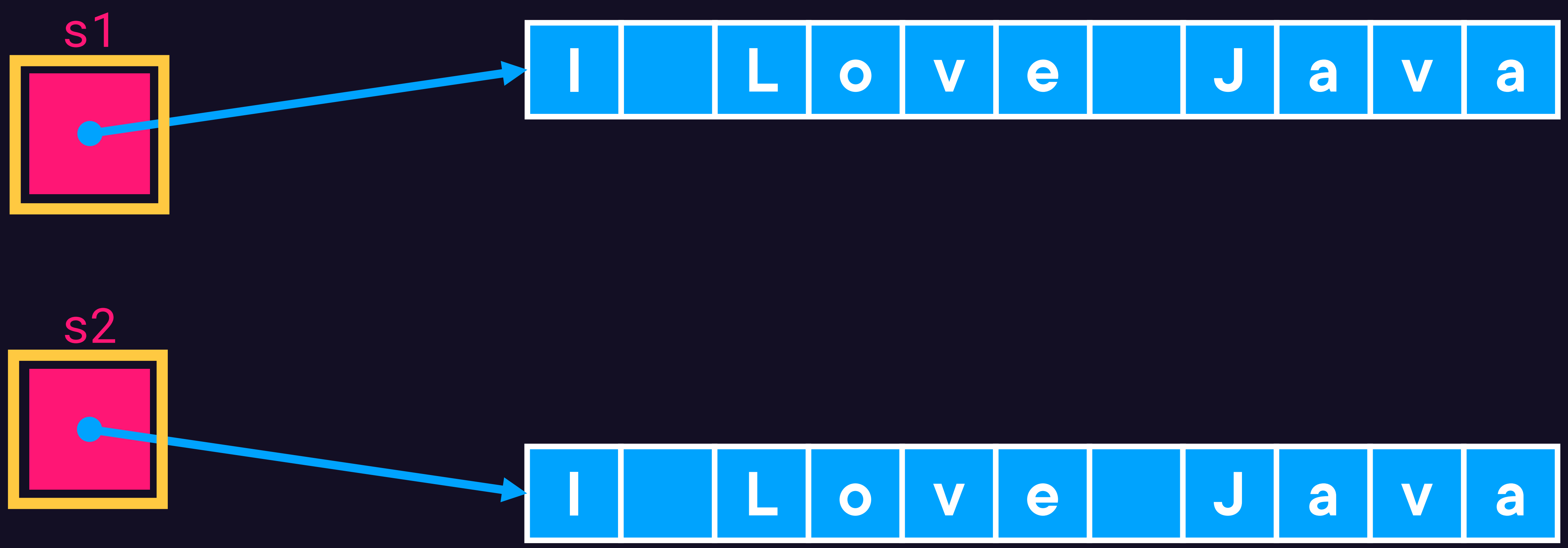


Strings Are Immutable

String variables do not directly hold the string value

- Hold a reference to the instance of string
- Changes in the value create a new instance of the string

```
String s1 = "I love";
s1 += " Java";
String s2 = "I";
s2 += " love Java";
if(s1 == s2)
     // do something
```



String Equality

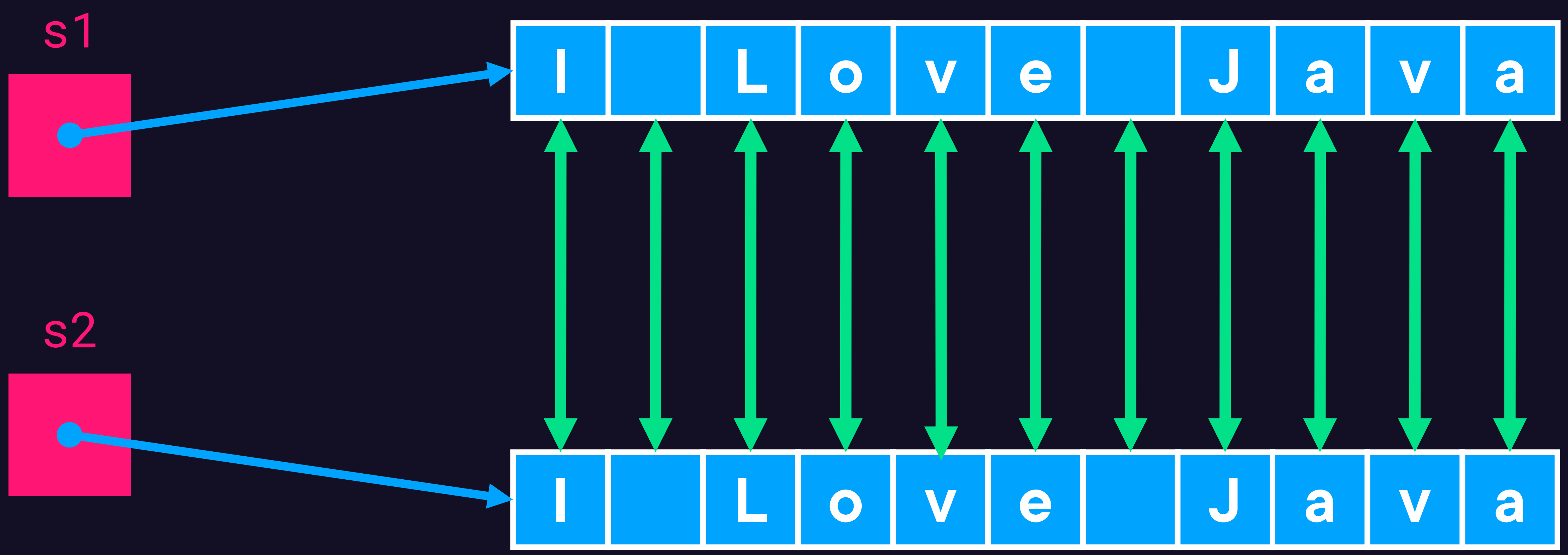
Comparing strings with the equality operator (==)

- Checks to see if both string variables reference the same string instance

Comparing strings with the equals method

- Performs a character-by-character comparison

```
String s1 = "I love";
s1 += " Java";
String s2 = "I";
s2 += " love Java";
if(s1 == s2) // false
     // do something
if(s1.equals(s2))
     // do something
```



String Equality

Comparing strings with the equality operator (==)

- Checks to see if both string variables reference the same string instance

Comparing strings with the equals method

- Performs a character-by-character comparison

Checking string equality

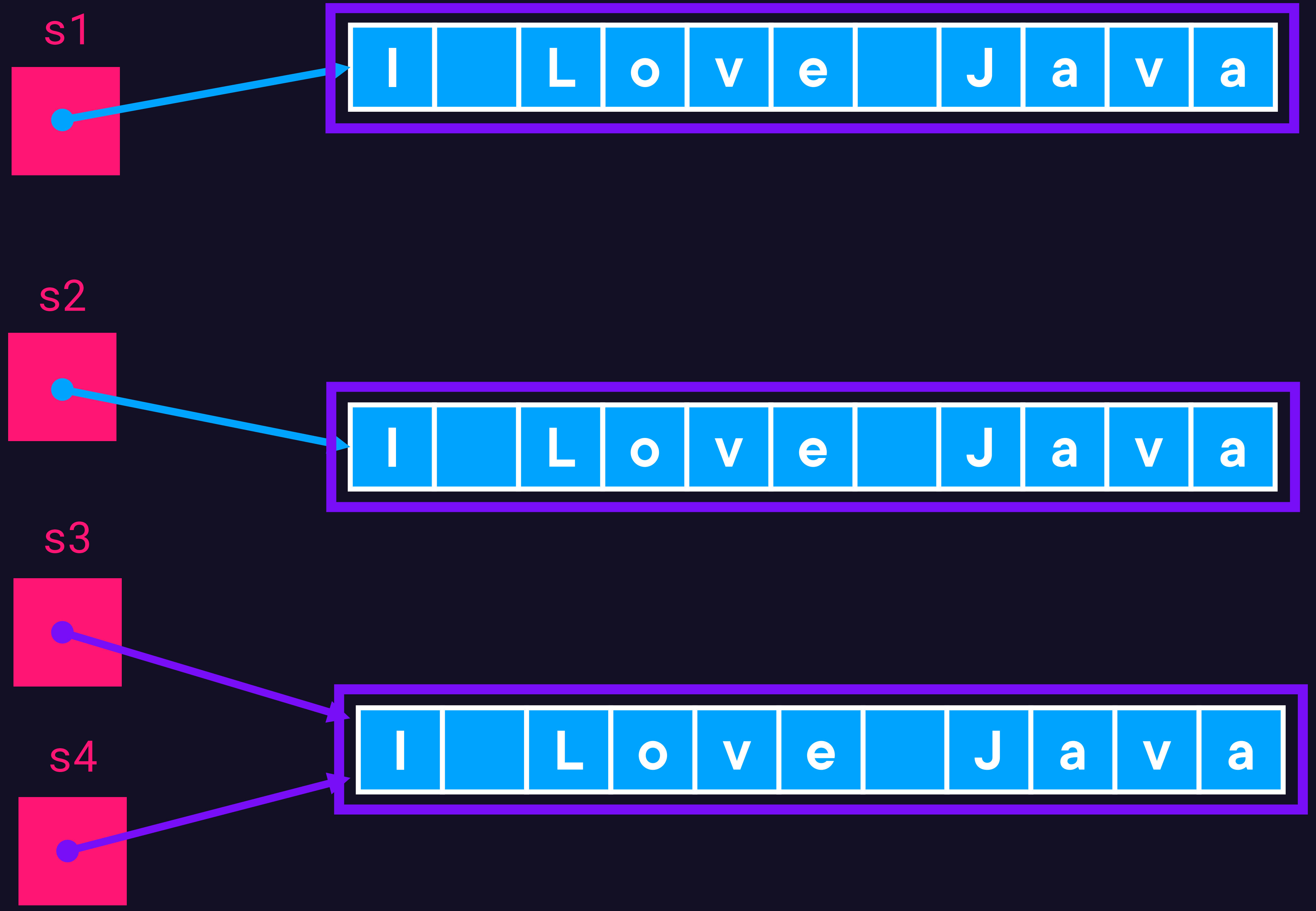
- The equals method is the best choice in most cases

Interning a string

- Provides a canonicalized value
- Enables reliable == operator comparison
- Improves performance of frequently compared strings

```
String s1 = "I love";
s1 += " Java";
String s2 = "I";
s2 += " love Java";
if(s1 == s2) // false
     // do something

String s3 = s1.intern();
String s4 = s2.intern();
if(s3 == s4)
     // do something
```



Select String Class Methods

Operation	Methods

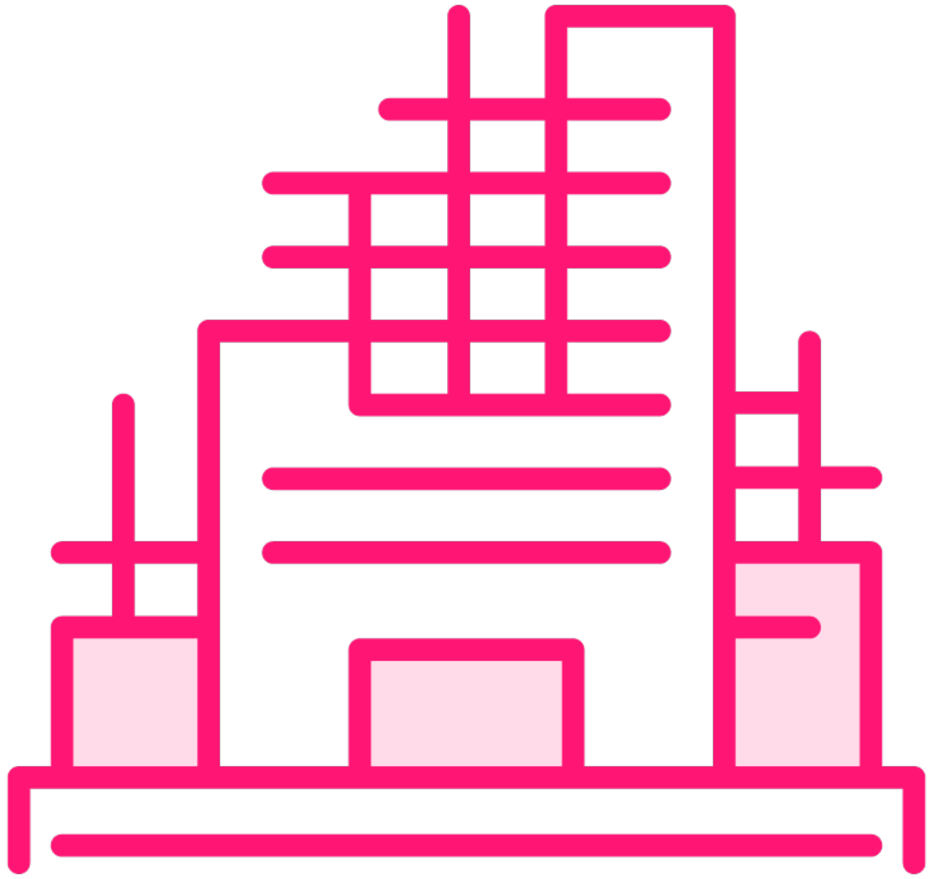
```java
int iVal = 100;
String sVal = String.valueOf(iVal);

int i = 2, j = 3;
int result = i * j;
String output
```

Converting Non-string Types to String

Virtually all data types can be converted into a String

- Can use String.valueOf
- Conversion often happens implicitly



Provides mutable string buffer

- Efficiently constructs string values
- Add new content to end with append
- Add new content within with insert

Extract content to a string

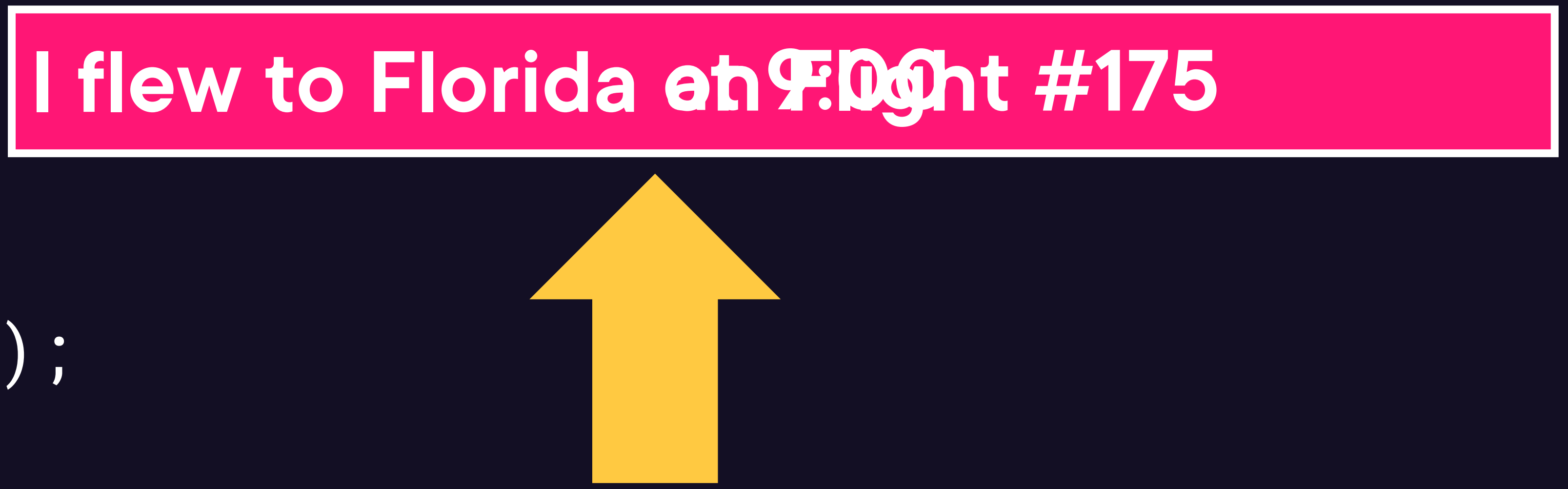
- Use toString

StringBuilder

on Flight #

```
String location = "Florida";
int flightNumber = 175;
StringBuilder sb = new StringBuilder(   );
sb.append("I flew to ");
sb.append(location);
sb.append(" on Flight #");
sb.append(flightNumber);
String message = sb.toString();
```

StringBuilder



```
String location = "Florida";
int flightNumber = 175;
StringBuilder sb = new StringBuilder(40);
sb.append("I flew to ");
sb.append(location);
sb.append(" on Flight #");
sb.append(flightNumber);
String message = sb.toString(); // “I flew to Florida on Flight #175”

String time = "9:00";
int pos = sb.indexOf(" on");
sb.insert(pos, " at ");
sb.insert(pos + 4, time);
message = sb.toString();
```

Summary

String

- Sequence of Unicode characters

String variables

- Do not directly store string instance
- Hold a reference to string instance

Strings are immutable

- Changes in the value create a new string instance

Summary

String equality

- Prefer the equals method

String interning

- Provides a canonicalized value
- Enables reliable use of == operator
- Improves performance of frequently compared strings

Summary

StringBuilder

- Provides mutable string buffer
- Efficiently constructs string values
- Use toString to extract string content