Wrapper Classes

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Java

Primitive Data Types We Know

- **int** - Represents a negative or positive numerical value including 0 and not including decimals
- **double** - Represents a negative or positive decimal value including 0
- **boolean** - Represents True or False
- **char** - Represents a single character

What is a **String** though?

String is just a class made to string multiple **characters** together, it has methods that we can use!

Example Methods:

- indexOf, substring, length, equals, toUpperCase, toLowerCase

Now, primitive types don’t have methods like these!

Welcome to **Wrapper Classes**!

Wrapper Class

Wrapper classes provide a way to use primitive data types as objects.

Primitive Data Types	Wrapper Classes
int	Integer
float	Float
double	Double
boolean	Boolean (Added from 1.5)
short	Short
byte	Byte
char	Character
long	Long

We treat these just like primitive types!

```
public static void main(String[] args){
    Integer myInt = 5;
    Double myDouble = 5.99;
    Character myChar = 'A';
    System.out.println(myInt);
    System.out.println(myDouble);
    System.out.println(myChar);
}
```

Now, these are ***Objects***

Objects have two methods that are really useful!

- toString()
- equals()

toString() for Wrapper Classes
converts wrapper objects into Strings

equals() for Wrapper Classes
compares the contents of two objects

Example of toString()

```
public static void main(String[] args){
    Integer myInt = 100;
    String myString = myInt.toString();
    System.out.println(myString.length());
}
```

Lab Wrapper Class

1. Create all primitive data types with any value
2. Create a Wrapper Class Object of each data type
    a. Have these objects store the same values as primitive data types
3. Print out all primitive data type values
4. Print out all Wrapper Class values with toString()