Library Classes

// Library class In java

- primitive and non primitive data type
    - class is a composite and non primitive data type
    byte - 1 byte
    short - 2 byte
    int - 4 byte
    long - 8 byte

    float - 4 byte
    double - 8 byte

    char - 2 byte
    boolean - 1 byte

Number Systems
Binary - 2 [0 1]
Decimal - 10 [0 1 2 3 4 5 6 7 8 9]
Octal - 8 [0 1 2 3 4 5 6 7]
HexDecimal - [0 1 2 3 4 5 6 7 8 9 A B C D E F]

library class - contains similar type of packages java.lang... java.math

wrapper class - convert stings to primitive data type and vice versa , available in java wrapper class.

primitive	Wrapper Class
int	Integer
char	Character
float	Float
long	Long

- int x = int.parseint(sa)
- int x = Int.valuOf(sa)

```
String sa = "135";
int y = Integer.valueOf(sa);
System.out.println(y + 55);
```

- parse can only take string and returns primitive datatype
- ValueOf can take anything and returns as object value

-
```
double let = 66.0;
String z = Double.toString(let);
```

- Autoboxing / boxing
  - primitive value assigned to wrapper class
    - Character obj = ch;
    - int x = obj;

Character Functions

A - Z | 65 - 90
a - z | 97 - 122
0 - 9 | 48 - 57
' ' | 32

```
ch x = '5'
int y = (int) x;
    System.out.println("The ASCII value of '" + x + "' is: " + asciiValue);
```

- bollean b = Character.isLetter(x);

```
char x = 'g';
boolean b = Character.isLetter(x);
System.out.println(b);
```

- bollean b = Character.isDigit(x);

- bollean b = Character.isLetterOrDigit(x);
- bollean b = Character.isUpperCase(x);
- bollean b = Character.isLowerCase(x);

- char b = Character.toLowerCase(x);
- char b = Character.toLowerCase(x);

- bollean b = Character.isWhitespace(x); // ' ' or '\n'

```
System.out.print("Enter a character: ");
    char ch = scanner.nextLine.charAt(0);
```

```
//String Handelling

String st = " Name" ;
String st2 = "Hello" ;
String st4 = " no way home tonight ";
String st3 = "namE";
int[] x = {5, 10, 15};s

        //st = st2
        //st = "Hello"

int x = st.length()  //returns length of string
ch x = st.charAt(2) // ' '
int x = st.indexOf('e') // 3
st2.lastIndexOf('l')  // 3

String x = st.substring(2) // "me"
Sting x = st.substring(1, 3) // "ame"

st.toLowerCase() //"name"
st2.toUpperCase() // "HELLO"

st.replace('N', 'M') // "Mame"

st2.concat(st) // Hello Name
Boolean x = st.equals(srt2) // boolean
Boolean x = st.equalsIgnoreCase(st3) //

int x = st.compareTo(st3) // 0
int x = st.compareToIgnoreCase(st3) //1

Sting x = st4.trim() // "no white space"

Boolean x = st.startsWith('n') //False
Boolean x = st4.endsWith('t') // false
```

//User Defined Methods

- A method is a block of code that gets executed when called upon
- Features:
    -- Code reusability
    -- User defined methods
    -- reduce complexity
    -- reduce Length

```
public    static          void          main          (String [] args)
<specifiers> <Modifiers> <return_type> method_name (parameter 1, parameter2)
    {
        //code
    }
```

Can be of two types

- static Method
- Non static Method

```
void display(int[]  arr){
    for (int i =0, i< x.length, i++)
        {
            System.out.println(arr [i]);
        }
    }
```

Two ways to call the method

- Call by reference
    --The value given while calling the method is inserted in the Method.
- Call by value
    --

// Arrays [ ]

Arrays - Collection of similar kinds of elements // similar data types.

Arrays is composite Data type

```
int [] marks = {50, 60, 80, 120, 55}
System.out.println(marks[5])
```

// 80

marks.length() will return the length of the array. //5

//How to input the values in the array?

i) directy create the array

```
int [] n = {5, 10, 15};
```

ii) declare the array then, using loop insert values according to usser input.

```
Scanner sc = new Scanner(System.in);

int [] m = new int[size];
System.out.println("Enter 5 values);

for (int i =0; i < a.length; i++)
    a[i] = sc.nextInt();
```

// How to access the elements of the array?

i) directly say the element index you want

```
int [] marks = {50, 60, 80, 120, 55};
System.out.println(marks[2]);
```

ii)use a for loop to access one element after the other to print or use

// Q1 Write some java code to get 10 marks and find the average.
// Q2 Write some java code to get 10 marks and find the largest number.

//Class , basis of all objects

class - Blueprint

object - Instance of class

process of creating an object is called instantiation.

How to create an object of a class?

Classname obj = new Classname();

Scanner scanner = new Scanner (System.in);

ACCSESS SPECIFIER !! [Decides How parts of The classes can be accessed by other classes in the program]

Public - Accessible from anywhere in the program.

Default - Accessible only within the same package.

Private - Accessible only within the same class.

Protected - Accessible within the same package and its subclasses.

DATATYPES

Primitive

Numeric Data Types:

byte: Represents a single byte (8 bits) of signed integer data.

short: Represents a 16-bit signed integer.

int: Represents a 32-bit signed integer.

long: Represents a 64-bit signed integer.

float: Represents a 32-bit floating-point number.

double: Represents a 64-bit floating-point number.

Character Data Type:

char: Represents a single Unicode character (16 bits).

Boolean Data Type:

boolean: Represents a boolean value (true or false).

Non Primitive/ Reference Datatype

Arrays, String, Object, Classes

CLASSES - a user defined DataType which contains data and associated Functions Wrapped together

|