Assignment 5 – 1 Write a Java Program that declares one of each type of primitive variable available in java.

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Primitive Variables in Java

1. **Int:**
- size 4 bytes
- 32-bit signed two's complement integer
- Stores whole numbers from -2,147,483,648 to 2,147,483,647 (inclusive).

2. **byte:**
- size 1 byte
- 8-bit signed two's complement integer
- Stores whole numbers from -128 to 127 (inclusive).

3. **Short:**
- size 2 bytes
- 16 bit signed two's complement integer
- Stores whole numbers from -32,768 to 32,767 (inclusive).

4. **long:**
- size 8 bytes
- 64-bit signed two's complement integer
- Stores whole numbers from -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807 (inclusive).

5. **float:**
- size 4 bytes
- Single-precision 32-bit IEEE 754 floating point.
- Stores fractional numbers. Sufficient for storing 6 to 7 decimal digits.

6. **double:**
- size 8 bytes
- Double-precision 64-bit IEEE 754 floating point.
- Stores fractional numbers. Sufficient for storing 15 decimal digits.

7. **boolean:**
- size 1 bit
- Stores only two possible values, "True" and "False".

8. **char:**
- size 2 bytes
- Stores a single character/letter or ASCII values.

- The char data type is a sngle 16-bit Unicode character. It has a minimum value of '\u0000' (or 0) and a maximum value of '\uffff' (or 65,535 inclusive).

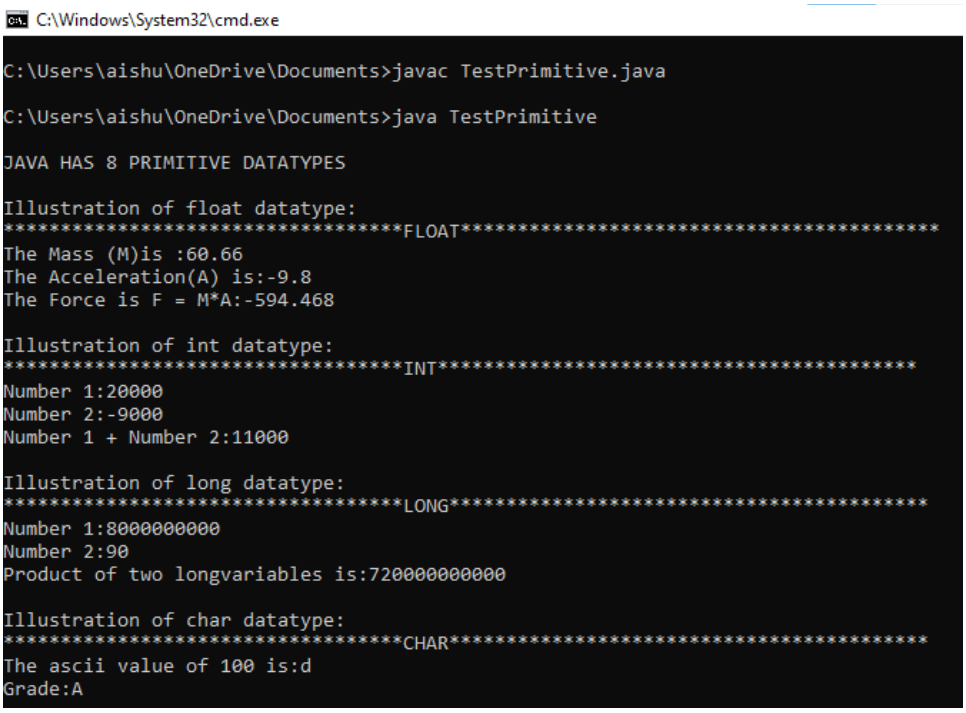
Source Code:

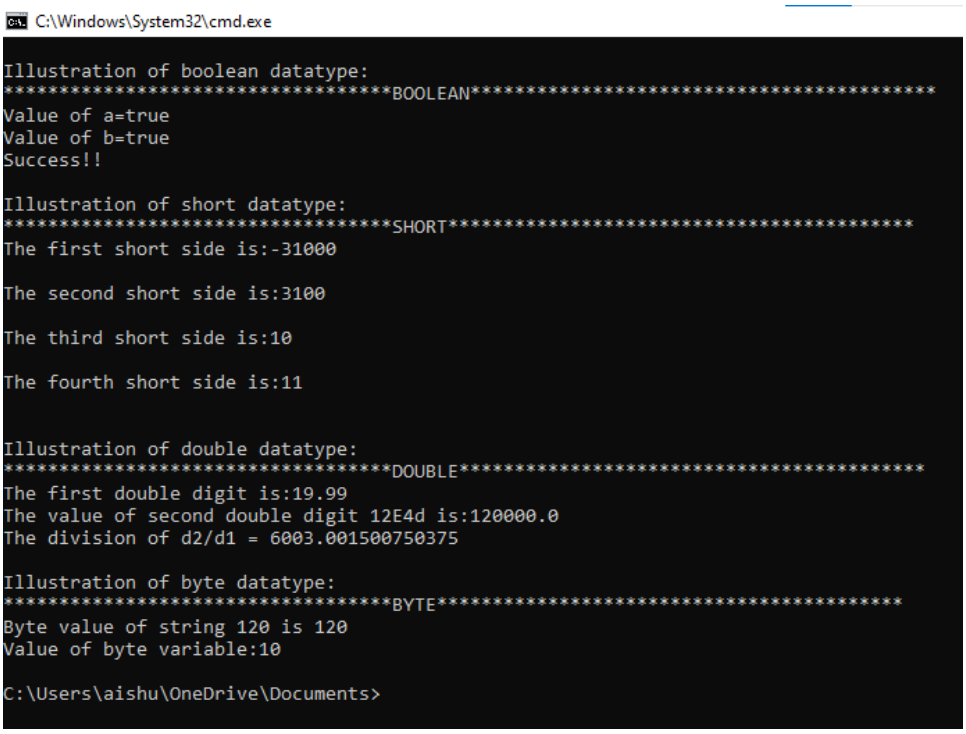
```
public class TestPrimitive{
public static void main(String args[]){

System.out.println("\n"+ "JAVA HAS 8 PRIMITIVE DATATYPES");
System.out.println("\n"+ "Illustration of float datatype:");
System.out.println("**********************************FLOAT**************************
***************");
float force;
float mass = 60.66f;
float acceleration =  -9.8f;
force = mass * acceleration;
System.out.println("The Mass (M)is :" +mass);
System.out.println("The Acceleration(A) is:" +acceleration);
System.out.println("The Force is F = M*A:" +force);

System.out.println("\n" + "Illustration of int datatype:");
System.out.println("**********************************INT****************************
************");
int num1,num2,result;
num1 = 20000;
num2 = -9000;
result = num1 + num2;
System.out.println("Number 1:" +num1);
System.out.println("Number 2:" +num2);
System.out.println("Number 1 + Number 2:" +result);

System.out.println("\n" + "Illustration of long datatype:");
System.out.println("**********************************LONG***************************
*************");
long n1,n2,res;
n1 = 8000000000L;
n2 = 90L;
res = n1 * n2;
System.out.println("Number 1:" +n1);
System.out.println("Number 2:" +n2);
System.out.println("Product of two longvariables is:" +res);

System.out.println("\n" + "Illustration of char datatype:");
```

```
System.out.println("**********************************CHAR*****************************
**************");
char grade_ascii,grade;
grade_ascii= 100;
grade = 'A';
System.out.println("The ascii value of 100 is:" +grade_ascii);  //it will print the ASCII value
System.out.println("Grade:" +grade);

System.out.println("\n" + "Illustration of boolean datatype:");
System.out.println("**********************************BOOLEAN**************************
*****************");
boolean a = true;
boolean b = true;
if(a = true && b == true){
System.out.println("Value of a=" +a);
   System.out.println("Value of b=" +b);
System.out.println("Success!!");
}
   else{
System.out.println("Fail");
}

System.out.println("\n" + "Illustration of short datatype:");
System.out.println("**********************************SHORT****************************
***************");
short s1,s2,s3,s4,s5;
s1 = -31000;
s2 = 3100;
s3 = 10;
s4 = 11;

System.out.println("The first short side is:" +s1 + "\n");
System.out.println("The second short side is:" +s2+ "\n");
System.out.println("The third short side is:" +s3+ "\n");
System.out.println("The fourth short side is:" +s4+ "\n");

System.out.println("\n" + "Illustration of double datatype:");
System.out.println("**********************************DOUBLE***************************
***************");
double d1,d2,d3;
d1 = 19.99d;
d2 = 12E4d;
d3 = d2/d1;
System.out.println("The first double digit is:" +d1);
```

```
        System.out.println("The value of second double digit 12E4d is:" +d2);
System.out.println("The division of d2/d1 = " +d3);

System.out.println("\n" + "Illustration of byte datatype:");
System.out.println("**********************************BYTE**********************************
**********");
String s = "120";
byte example = 10;
Byte bb = Byte.valueOf(s);                    //This returns an byte object holding the value of the
specified primitive.
System.out.println("Byte value of string " +s+ " is " +bb);
        System.out.println("Value of byte variable:" +example);

}
}
```

Output:




C:\Windows\System32\cmd.exe
Illustration of boolean datatype:
**********BOOLEAN**********
Value of a=true
Value of b=true
Success!!
Illustration of short datatype:
**********SHORT**********
The first short side is:-31000
The second short side is:3100
The third short side is:10
The fourth short side is:11
Illustration of double datatype:
**********DOUBLE**********
The first double digit is:19.99
The value of second double digit 12E4d is:120000.0
The division of d2/d1 = 6003.001500750375
Illustration of byte datatype:
**********BYTE**********
Byte value of string 120 is 120
Value of byte variable:10
C:\Users\aishu\OneDrive\Documents>