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# "Java Lecture #02"

## "Homework Problems"

- 1- Try to declare meaningful variables of each type.

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

```
        int age = 25;
```

```
        short noOfBooks = 2;
```

```
        long population = 123678967;
```

```
        float temperature = 98.6f;
```

```
        double distance = 3567.9;
```

```
        char grade = 'B';
```

```
        boolean isBoy = true;
```

```
        String name = "Abuzar";
```

```
System.out.println("Age: " + age);
```

```
System.out.println("No. of Books: " + noOfBooks);
```

```
System.out.println("population: " + population);
```

```
System.out.println("temperature: " + temperature);
```

```
System.out.println("Distance: " + distance);
```

```
System.out.println("grade: " + grade);
```

```
System.out.println("is Boy: " + isBoy);
```

```
System.out.println("Name: " + name);
```

3



- 2- Make a program that takes the radius of Circle as input, calculate its radius and area and prints it as output to user.

```
import java.util.Scanner;  
public class Radius {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter the radius of Circle:");  
        double radius = sc.nextDouble();  
        double area = 3.14159 * radius * radius;  
        System.out.println("Radius: " + radius);  
        System.out.println("Area: " + area);  
    }  
}
```



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3- Program that prints the table of number that input by user.

```
import java.util.Scanner;
public class Table {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter any number");
        int number = sc.nextInt();
        System.out.println("Table of: " + number + " :");
        for (int i = 1; i <= 10; i++) {
            int result = number * i;
            System.out.println(number + " * " + i + " = " + result);
        }
    }
}
```



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4- Program that take input from user as year and convert into Month and Days and display.

```
import java.util.Scanner;  
public class Year {  
    public static void main (String [] args) {  
        Scanner sc = new Scanner (System.in);  
        System.out.println ("Enter the number of years:");  
        float years = sc.nextFloat();  
        final int DAYS_IN_YEAR = 365;  
        int totalDays = (int) (years * DAYS_IN_YEAR);  
        int months = totalDays / 30;  
        System.out.println (years + " years is approx. equal to:");  
        System.out.println ("Months: " + months);  
        System.out.println ("Days: " + totalDays);  
    }  
}
```



5- Program which Converts Celsius to Fahrenheit take value from user.

```
import java.util.Scanner;  
public class Temp {
```

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

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

```
        System.out.print ("Enter temp in Celsius : ");  
        double celcius = sc.nextDouble();
```

```
        double fahrenheit = ( celcius * 9/5 ) + 32 ;
```

```
        System.out.print ( celcius + " Celsius is equal to " + fahrenheit  
                        + " fahrenheit " );
```

```
}
```

```
}
```



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# "Java lecture #03"

## "Home Work Problems"

- 1- Make a calculator. Input from User and perform operations.

```
import java.util.Scanner;
public class Calculator {
    public static void main (String [] args) {
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter 1st Num : ");
        double a = sc.nextDouble ();
        System.out.println ("Enter 2nd Num : ");
        double b = sc.nextDouble ();
        System.out.println ("Select the operation");
        System.out.println ("1 : + (Addition)");
        System.out.println ("2 : - (Subtraction)");
        System.out.println ("3 : * (Multiplication)");
        System.out.println ("4 : / (Division)");
        System.out.println ("5 : % (Modulus)");
        System.out.println ("Enter Operation (1-5): ");
        int operation = sc.nextInt ();
        double result = 0;
        switch (operation) {
            case 1:
```



result =  $a + b$ ;  
break;

case 2:

result =  $a - b$ ;  
break;

case 3:

result =  $a * b$ ;  
break;

case 4:

if ( $b \neq 0$ ) {  
 result =  $a / b$ ;

} else {  
 System.out.println ("Error: Undefined division");  
 return;

}

break;

case 5:

if ( $b \neq 0$ ) {

result =  $a \% b$ ;

} else {  
 System.out.println ("Error: Undefined Modulus");  
 return;

}

break;

default :



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```
        System.out.println ("Invalid Operation");
        return;
```

}

```
        System.out.println ("Result: " + result);
```

}

}

- 2- Ask user to enter the number of month and print the name of month.

```
import java.util.Scanner;
```

```
public class Switch {
```

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

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

```
        System.out.println ("Enter the number of month (1-12): ");
```

```
        int monthNum = sc.nextInt();
```

```
        if (monthNum >= 1 && monthNum <= 12) {
```

```
            String monthName ;
```

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Switch(monthNum) {

case 1 :

month Name = "January";

break;

case 2 :

month Name = "February";

break;

case 3 :

month Name = "March";

break;

case 4 :

month Name = "April";

break;

case 5 :

month Name = "May";

case 6 :

month Name = "June";

break;

case 7 :

month Name = "July";

break;

case 8 :

month Name = "August";

break;

case 9 :

month Name = "September";

break;

case 10 :

month Name = "October";

break;



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case 13:

monthName = "November";

break;

case 14:

monthName = "December";

break;

default:

monthName = "Invalid month";

}

System.out.println("Month Name : " + monthName);

} else {

System.out.println("Invalid Month Number.");

}

}

- 3- Take 10 values from user if the value is even it should be count even if value is odd and zero.

import java.util.Scanner;

public class Even {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);



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```
int evenCount = 0;  
int oddCount = 0;  
int zeroCount = 0;
```

```
for (int i=1; i<=10; i++) {  
    System.out.println ("Enter value # " + i + ": ");  
    int value = sc.nextInt();  
  
    if (value % 2 == 0) {  
        evenCount++;  
    } else if (value != 0) {  
        oddCount++;  
    } else {  
        zeroCount++;  
    }  
}
```

```
System.out.println ("Even Count: " + evenCount);  
System.out.println ("Odd Count: " + oddCount);  
System.out.println ("Zero Count: " + zeroCount);
```



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- 4- Take 3 subject Marks and finds average . If average above 50 print "PASS" else "FAIL".

```
import java.util.Scanner;
public class Avg {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Marks for Subj 1:");
        double sub1 = sc.nextDouble();
        System.out.println("Enter Marks for Subj 2:");
        double sub2 = sc.nextDouble();
        System.out.println("Enter Marks for Subj 3:");
        double sub3 = sc.nextDouble();
        double average = (sub1 + sub2 + sub3) / 3;
        if (average > 50) {
            System.out.println("PASS");
        } else {
            System.out.println("FAIL");
        }
    }
}
```



# "Java lecture #04"

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## (Home Work Problems)

- 1- Print all even Numbers till n.

```
import java.util.Scanner;
```

```
public class Inf {
```

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

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

```
        System.out.println ("Enter the value of n: ");
```

```
        int n = sc.nextInt();
```

```
        System.out.println ("Even numbers from 2 to " + n + ":");
```

```
        for (int i = 2; i <= n; i += 2) {
```

```
            System.out.println (i);
```

```
}
```

```
,
```

```
,
```

- 2- Run the following Command and determine the result.

```
for (; ; ) {
```

```
    System.out.println ("OOP LAB");
```

```
}
```

Ans :- infinity loop starts (Ctrl+C → Stop)



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- 3- Menu driven Program. The user can enter 2 numbers.

```
import java.util.Scanner;
public class Choice{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        int choice;
        do {
            System.out.println("Menu:");
            System.out.println("1. Enter Student Marks");
            System.out.println("0. Exit");
            System.out.print("Enter Your Choice (0 or 1): ");
            choice = sc.nextInt();
            switch (choice) {
                case 1:
                    System.out.print("Enter Student Marks (out of 100): ");
                    int marks = sc.nextInt();
                    if (marks >= 90) {
                        System.out.println("This is Good");
                    } else if (marks >= 60) {
                        System.out.println("This is also Good");
                    } else if (marks >= 0) {
                        System.out.println("This is Good as Well!");
                    }
            }
        } while (choice != 0);
    }
}
```



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```
        } else {  
            System.out.println("Invalid Input for Marks");  
        }  
    }  
    break;  
}  
case 0:
```

```
    System.out.println('Exiting Program . GoodBye .... !')  
    break;
```

default:

```
    System.out.println("Invalid Choice . Please enter 0 or 1");  
}  
}  
while (choice != 0);  
}  
}  
}  
}
```

4- Print If a number is prime or not.

```
import java.util.Scanner;  
public class prime {  
    public static void main(String[] args) {  
        Scanner sc = new Scanner(System.in);  
    }  
}
```



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```
System.out.println("Enter a Number");
int n = sc.nextInt();

boolean isPrime = isPrimeNum(n);

if (isPrime) {
    System.out.println(n + " is a prime number.");
} else {
    System.out.println(n + " is not a prime number.");
}

private static boolean isPrimeNum(int number) {
    if (number <= 1) {
        return false;
    }

    for (int i = 2; i < number; i++) {
        if (number % i == 0) {
            return false;
        }
    }

    return true;
}
```



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4- Write a program which take a starting value and ending value from user in Year and find the leap year  
And starting value should be  $> 1000$ .

```
import java.util.Scanner;  
public class Leap {  
    public static void main(String[] args) {
```

```
        Scanner sc = new Scanner(System.in);  
        System.out.println("Enter the starting year above than  
        1000: ");
```

```
        int startYear = sc.nextInt();
```

```
        if (startYear <= 1000) {  
            System.out.println("Enter Year above 1000");  
            return;
```

```
}
```

```
        System.out.println("Enter Ending Year:");  
        int endYear = sc.nextInt();
```

```
        if (endYear <= startYear) {  
            System.out.println("Invalid Input");  
            return;
```

```
}
```

```
        System.out.println("Leap years between " + startYear + " and "  
        + endYear + ": ");
```

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3. Individuelle + soziale Arbeitsvertrag: ein Vertrag, der die Arbeitsteilung und die Weise der Zusammenarbeit zwischen den beteiligten Parteien festlegt.

```
for (int year = startYear; year <= endYear ; year++) {
```

if ((year % 4 == 0 & year % 100 != 0) || (year % 400 == 0)) {

```
System.out.println(year);
```

3

3

3

3