

Solution LAB 03 (Selection using If Condition)

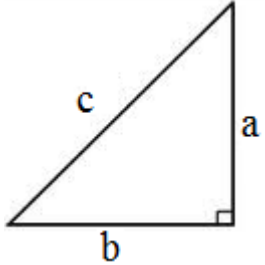
اور جو شخص محنت کرتا ہے تو اپنے ہی فائدے کے لئے محنت کرتا ہے۔ اور خدا تو سارے جہان سے بے پروا ہے ہے (آیت نمبر ۶ سورۃ ۲۹)

A dream doesn't become reality through magic; it takes sweat, determination and hard work. Colin Powell

Lab is based on Lecture 7, however prior concepts also required

Task 1: Print first four powers of 2, 3, and 4 in separate lines using power function from Math class.	2	4	8	16
Note: Use escape sequence to align output, as shown	3	9	27	81
	4	16	64	256

```
?ln(Math.pow(2,1)+"\t"+ Math.pow(2,2)+"\t"+ Math.pow(2,3)+"\t"+ Math.pow(2,4));
?ln(Math.pow(3,1)+"\t"+ Math.pow(3,2)+"\t"+ Math.pow(3,3)+"\t"+ Math.pow(3,4));
?ln(Math.pow(4,1)+"\t"+ Math.pow(4,2)+"\t"+ Math.pow(4,3)+"\t"+ Math.pow(4,4));
```

<p>Task 2: Write program to take two sides of right angle triangle as input and calculate hypotenuse using <i>Pythagoras'</i> theorem: $c^2=a^2+b^2$</p> <p>Sample Run:</p> <pre>Enter A: 3 Enter B: 4 Hypotenuse: 5</pre> <p>Note: Take double as data type of variables, use <i>nextDouble</i> method for input. Also you have to use <i>power and square root</i> function from Math class</p>	
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```
Scanner in=new Scanner(System.in);
? ("Enter A:");
double a=in.nextDouble();
? ("Enter B:");
double b=in.nextDouble();
double c=Math.sqrt(a*a+b*b);
?ln("Hypotenuse:"+ c);
```

<p>Task 3: Write program to calculate Net Salary where Basic Salary is input of the program. Procedure to calculate salary is:</p> <ul style="list-style-type: none"> - find house rent by multiplying basic salary with 0.45 - find medical allowance by multiplying basic salary with 0.10 - Add above in basic salary to calculate Gross Salary - find provident fund by multiplying basic salary with 0.05 - Deduct provident fund from basic salary to calculate Net Salary <p>Use variables to store all values. Show output as shown:</p>	<pre>Basic Salary:25000 Salary Details Basic Salary: 25000.0 Add: House Rent: 11250.0 Medical Allowance: 2500.0 ----- Gross Salary: 38750.0 Less: Provident Fund: 1250.0 ----- Net Salary: 37500.0 -----</pre>
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```
Scanner in=new Scanner(System.in);
?(("Basic Salary:");
double basicSalary=in.nextDouble();
double houseRent=basicSalary*0.45;
double medicalAllowance=basicSalary*0.10;
double grossSalary=basicSalary+houseRent+medicalAllowance;
double providentFund=basicSalary*0.05;
double netSalary=basicSalary-providentFund;
?ln("Basic Salary:"+basicSalary);
?ln("Add:");
?ln("\tSalary Details");
?ln("\n\nBasic Salary:\t\t"+basicSalary);
?ln("\nHouse Rent:\t\t"+houseRent);
?ln("\nMedical Allowance:\t"+medicalAllowance);
?ln("\n          \t-----");
?ln("\nGross Salary:\t\t"+grossSalary);
?ln("Less:");
?ln("\nProvident Fund:\t\t"+providentFund);
?ln("\n          \t-----");
?ln("\nNet Salary:\t\t"+netSalary);
?ln("\n          \t-----");
```

<p>Task 4: Complete code written inside main function to show output given on right hand side?</p> <pre>String space=" "; ?ln(space.substring(0,0)+"*");</pre>	<pre>* * * *</pre>
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```
String space="          ";
?ln(space.substring(0,0)+"*");
?ln(space.substring(0,1)+"*");
?ln(space.substring(0,2)+"*");
?ln(space.substring(0,3)+"*");
?ln(space.substring(0,4)+"*");
```

<p>Task 5: Complete code written inside main function to show output given on right hand side?</p>	<pre>This is third lab</pre>
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```
String s="This is third lab";
int pos1=0,pos2;
pos2=s.indexOf(' ');
?ln(s.substring(pos1,pos2));
pos1=pos2+1;
pos2=s.indexOf(' ',pos1);
?ln(s.substring(pos1,pos2));
```