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Section: C

OOP LAB # 04

Objective: Implementation of various decision-making constructs.

Exercise #01: Take values of length and breadth of a rectangle from user and check if it is square or not.

Source code:

```
package squarechecking;
import java.util.Scanner;
public class SquareChecking {
public static void main(String[] args) {
Scanner sc=new Scanner(System.in);
int length,breadth;
System.out.print("Plz Enter length of a square:");
length=sc.nextInt();
System.out.print("Plz Enter breadth of a square:");
breadth=sc.nextInt();
if(breadth==length)    {
System.out.print("It is a square!");    }
else   {
System.out.print("It is not a square!");    }    }    }
```

Output:

```
Plz Enter length of a square:4
Plz Enter breadth of a square:4
It is a square!
```

Exercise #02: A school has following rules for grading system:

a. Below 25 F
b. 25 to 45 E
c. 45 to 50 D
d. 50 to 60 C
e. 60 to 80 B
f. Above 80 A

Write a program to enter marks and print the corresponding grade.

Source code:

```
package gradingsystem;
import java.util.Scanner;
public class GradingSystem {
public static void main(String[] args) {
Scanner sc=new Scanner(System.in);
int sub1,sub2,sub3,t_marks;
float perc=0;
System.out.print("Plz Enter obtained marks in Maths out of 100:");
sub1=sc.nextInt();
System.out.print("Plz Enter obtained marks in English out of 100:");
sub2=sc.nextInt();
System.out.print("Plz Enter obtained marks in Physics out of 100:");
sub3=sc.nextInt();
t_marks=sub1+sub2+sub3;
perc=t_marks/3;
```

```
if(perc>80&&perc<=100)     {
System.out.print("You got A!");    }
else if(perc>60&&perc<=80)    {
System.out.print("You got B!");     }
else if(perc>50&&perc<=60)   {
System.out.print("You got C!");     }
else if(perc>45&&perc<=50)   {
System.out.print("You got D!");     }
else if(perc>25&&perc<=45)    {
System.out.print("You got E!");      }
else     {
System.out.print("Sorry You got F!");      }     }    }
```

Output:

```
Plz Enter obtained marks in Maths out of 100:16
Plz Enter obtained marks in English out of 100:12
Plz Enter obtained marks in Physics out of 100:18
Sorry You got F!
```

Exercise #03: A student will not be allowed to sit in exam if his/her attendance is less than 75%. Take following input from user, Number of classes held, Number of classes attended and print percentage of class attended. Is student is allowed to sit in exam or not.

Source code:

```
package attendencechecking;
import java.util.Scanner;
public class AttendenceChecking {
public static void main(String[] args) {
Scanner sc=new Scanner(System.in);
//Cls means Class, hld means held, atndd means attended
int Cls_hld,Cls_atndd;
float perc=0;
System.out.print("Plz enter No of classes that are held:");
Cls_hld=sc.nextInt();
System.out.print("Plz enter No of Attended classes:");
Cls_atndd=sc.nextInt();
perc=(Cls_atndd/Cls_hld)*100;
if(perc>=75)
{
System.out.print("Congrats you are allowed to sit in exam!");
}
else
{
System.out.print("Sorry you can't sit in exam!");
}
}
}
```

Output:

```
Plz enter No of classes that are held:20
Plz enter No of Attended classes:14
Sorry you can't sit in exam!
```

Exercise #04: Write a program using switch which choose between following cases

a: Add two numbers

b: Find power using math function

c: Exit

Source code:

```
package switchcase;
import java.util.Scanner;
public class SwitchCase {
public static void main(String[] args) {
Scanner sc=new Scanner(System.in);
String method;
System.out.println("1. Addition");
System.out.println("2. Power");
System.out.println("3. Exit");
System.out.println("Plz Choose any one from the above following methods:");
method=sc.next();
switch (method)  {
case  "Addition":
int a,b;
System.out.print("Plz enter First number:");
a=sc.nextInt();
System.out.print("Plz enter Second number:");
b=sc.nextInt();
System.out.print("After addition of both we got:"+(a+b));
break;
case "Power":
int[]c=new int[2];
System.out.print("Plz enter number on which you wants to raised power:");
c[0]=sc.nextInt();
System.out.print("Plz enter power which do you want to raised:");
c[1]=sc.nextInt();
System.out.println(c[0]+" raised to power "+c[1]+" is: "+Math.pow(c[0],c[1]));
break;
case "Exit":
char ch;
System.out.print("Do you really wants to exit? then press y:");
ch=sc.next().charAt(0);
if(ch=='y'){
System.out.println("Thanx for Coming Plz come again!");  }
break;
default:
System.out.println("You did'nt choose any of the above methods!");   }    }   }
```

Output:

```
1. Addition
2. Power
3. Exit
Plz Choose any one from the above following methods:
Addition
Plz enter First number:2
Plz enter Second number:3
After addition of both we got:5
```

// Second time

1. Addition
2. Power
3. Exit
Plz Choose any one from the above following methods:
Power
Plz enter number on which you wants to raised power:3
Plz enter power which do you want to raised:4
3 raised to power 4 is: 81.0
// Third time
1. Addition
2. Power
3. Exit
Plz Choose any one from the above following methods:
Exit
Do you really wants to exit? then press y: y
Thanx for Coming Plz come again!

Exercise #05: Explore if-else-if ladder and write a program of your choice to demonstrate its implementation.

Source code:

```
package ifelse.pkgif.demonstartion;
import java.util.Scanner;
public class IfelseIfDemonstartion {
public static void main(String[] args) {
Scanner sc=new Scanner(System.in);
char ch;
System.out.print("Plz enter any character:");
ch=sc.next().charAt(0);
if(ch=='A'||ch=='E'||ch=='I'||ch=='O'||ch=='U'){
System.out.print("Entered character is vowel!");
}
else if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'){
System.out.print("Entered character is vowel!");}
else
{
System.out.print("Entered character is not a vowel!");
}
}
}
```

Output:

Plz enter any character:O
Entered character is vowel!
// Second time
Plz enter any character:i
Entered character is vowel!
// Third time
Plz enter any character: C
Entered character is not a vowel!