LAB_ANP_C6339_CONTROL_STAEMENTS2

Due date: Monday, 13 November 2023, 5:30 AM
Maximum number of files: 1
Type of work: Individual work
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Assignment-1.

Write a program to find out all the armstrong numbers within a given

range using a method named printArmstrongNumber(int start, int

end) by taking input from the user.

The program should print the Armstrong number in a given range starting from “start” and ending with “end”.

Note: input should be taken from the keyboard. Use a loop to calculate the

Armstrong number from “start” to “end”. Also use loops to calculate the

cube of a number. Do not use the Math.pow() function.

Solution:-

```
//package com.learning.looping;


import java.util.Scanner;


public class AllArmstrongNumbersDisplay {


    public static void main(String args[]) {
        Scanner obj = new Scanner(System.in);
        int start, end, sum, r, count, n, n1, p;
        boolean flag = false;


        System.out.println("Enter Start limit");
        start = obj.nextInt();
```

```
System.out.println("Enter End limit");
end = obj.nextInt();

for (int i = start; i <= end; i++) {
   if (i < 0) {
      continue;
   }

   n1 = n = i;
   count = 0;

   // Count no. of digits
   while (n > 0) {
      n = n / 10;
      count++;
   }

   sum = 0;

   while (n1 > 0) {
      r = n1 % 10;

      // Calculate power of digit
      p = 1;
      for (int j = 1; j <= count; j++) {
         p = p * r;
      }

      sum = sum + p;
      n1 = n1 / 10;
   }
```

```
            if (sum == i) {
                System.out.println(i);
                flag = true;
            }
        }

        if (flag==false) {
            System.out.println("From " + start + " to " + end + " No armstrong number found");
        }
    }
}
```

Output:

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac AllArmstrongNumbersDisplay.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java AllArmstrongNumbersDisplay
Enter Start limit
100
Enter End limit
200
153
```

Assignment-2.

Write a program to calculate the gross salary of a group of employees. Basic salary should be taken from the user.

If the basic salary is greater than 15000 ,HRA=20% and DA=60% will be given, else HRA=3000 and DA 70% will be given to the employee.

Note: Input of basic salary will be taken from the keyboard.

After calculating the salary of one employee, the program will ask for the user's choice as

int.

If "-1" is entered then the loop will continue and the loop will exit for other int inputs.

Solution:-

```
//package com.learning.looping;

import java.util.Scanner;
```

```
public class Employee_paybill{
	public static void main(String[] args){
		Scanner obj = new Scanner(System.in);
		float basic, hra, da;
		int choice=0;
		do{
			System.out.println("Enter basic pay");
			basic=obj.nextFloat();
			if(basic>15000){
				hra=basic*20/100;
				da=basic*60/100;
			}
			else{
				hra=3000;
				da=basic*70/100;
			}
			System.out.println("HRA "+hra);
			System.out.println("DA "+da);
			System.out.println("Do you want to continue for another Employee if yes intput -1");
			choice=obj.nextInt();
			if(choice != -1){
				break;
			}
		 }while(choice == -1);
	System.out.println("End of execution.");
	}
}
```

Output:

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac Employee_paybill.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java Employee_paybill.java
Enter basic pay
1000
HRA 3000.0
DA 700.0
Do you want to continue for another Employee if yes intput -1
3
End of execution.
```

Assignment-3.

Write a program to count and print the total number of odd and even numbers from user inputs. Program will ask for user inputs in a loop.

Solution:-

```
import java.util.Scanner;


public class CountOddEvenNumbers {


    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);


        int oddCount = 0;
        int evenCount = 0;


        // Loop to get user inputs
        while (true) {
            System.out.println("Enter a number: ");
            int number = sc.nextInt();


            // Check if the number is odd or even
            if (number % 2 == 0) {
                evenCount++;
            } else {
                oddCount++;
```

```
        }

        // Check if the user wants to continue
        System.out.println("Do you want to continue? (y/n)");
        String choice = sc.next();

        if (choice.equalsIgnoreCase("n")) {
            break;
        }
    }

    // Print the total number of odd and even numbers
    System.out.println("Total number of odd numbers: " + oddCount);
    System.out.println("Total number of even numbers: " + evenCount);
  }
}
```

Output:

```
C:\Users\thila\OneDrive\Desktop\Anudip_Labs>javac CountOddEvenNumbers.java

C:\Users\thila\OneDrive\Desktop\Anudip_Labs>java CountOddEvenNumbers
Enter a number:
1
Do you want to continue? (y/n)
y
Enter a number:
2
Do you want to continue? (y/n)
y
Enter a number:
3
Do you want to continue? (y/n)
n
Total number of odd numbers: 2
Total number of even numbers: 1
```