

### Lab Assignment 3

#### Programming Projects with Java1 (CA 3216)

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| 1  | Write a Java program to print numbers from <b>1 to 10</b> using a for loop.   | CO4 |
| 2  | WAP to print the <b>sum of the first N natural numbers</b> .  | CO4 |
| 3  | Write a program to reverse a given <b>number</b> .  | CO4 |
| 4  | Write a program to generate all unique combinations of 1,2 and 3 using for loops.   | CO4 |
| 5  | WAP to print all prime numbers from 1 to 100  | CO4 |
| 6  | Write a Java program to print the <b>multiplication table</b> of a given number.  | CO4 |
| 7  | WAP to find the factorial value of any number entered through the keyboard.   | CO4 |
| 8  | WAP to print out all Armstrong numbers between 1 and 500. If sum of cubes of each digit of the number is equal to the number itself, then the number is called an Armstrong number. | CO4 |
| 9  | WAP to produce the following output.<br><pre>           1         2 3       4 5 6     7 8 9 10 </pre>   | CO4 |
| 10 | WAP to print first 20 terms of fibonacci series.  | CO4 |
| 11 | WAP to print 24 hours of day with suitable suffixes like AM, PM, Noon and Midnight  | CO4 |
| 12 | Wap to find the <b>sum of even and odd digits</b> in a number separately  | CO4 |
| 13 | Write a Java program to calculate <b>power of a number</b> ( $x^y$ ) using loops.   | CO4 |
| 14 | Write a Java program to check whether a given number is a <b>palindrome</b> or not.   | CO4 |
| 15 | Write a program to find the <b>sum of digits</b> of a number.   | CO4 |
| 16 | Write a program to print all <b>even and odd numbers</b> between 1 and N separately   | CO4 |
| 17 | WAP to find the <b>LCM and GCD</b> of two numbers using loops.  | CO4 |
| 18 | Write a program that find the <b>smallest and largest digit</b> in a number   | CO4 |
| 19 | WAP to check if a number is <b>perfect</b> (sum of divisors = number) or not  | CO4 |
| 20 | WAP to print the pattern<br><pre> 1 0 1 1 0 1 0 1 0 1 </pre>  | CO4 |
| 21 | WAP to print the pattern<br><pre>       *     * * *   * * * * *     * * *       * </pre>  | CO4 |

| Course Outcomes |   |       |
|-----------------|---|-------|
| CO1             | To remember and comprehend the fundamental concepts of Java programming by reading, writing, executing, and debugging Java applications within the Eclipse framework. This includes the ability to understand and explain variables, constants, primitive data types, and core libraries along with their functionalities | L1,L2 |

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| CO2 | To apply operators and type casting mechanisms proficiently to manipulate and transform data within Java programs, ensuring accurate and efficient computation | L3,L4    |
| CO3 | To critically analyze and systematically implement conditional statements to effectively govern program flow based on diverse logical conditions               | L3,L4    |
| CO4 | To design and critically evaluate iterative solutions utilizing loops to efficiently address repetitive computational problems                                 | L5,L6    |
| CO5 | To design and proficiently manipulate arrays for systematic storage and management of data collections   | L3,L6    |
| CO6 | Develop and implement modular programs using methods, and demonstrate object-oriented principles through classes, objects, and enumerations                    | L2,L3,L6 |