MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
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A Report on
Three Week Hands-on Training Session on
"Java Programming: From Zero to Deployment"
Organized by
Department of Computer Applications
from 24.05.2025 to 12.06.2025

Report Submitted by: Mr. Pala Hanok, Assistant Professor, Department of Computer Applications.
Resource Person: Dr. Tirumalasetty Venkateswara Rao, Corporate Trainer, Hexaware Technologies, Hyderabad
Venue: Auditorium - MITS
Duration: 9:30 AM to 12:30 PM
Target Audience: I MCA II Semester (141 students)
Mode of Conduct: Offline
Report Received on 21.06.2025.

Inauguration

A three-week hands-on training session on "Java Programming: From Zero to Deployment" was officially inaugurated on 24th May 2025 with an engaging welcome address delivered by Manasa K & Sandhya R, First-Year MCA Students. In their speech, students expressed gratitude to the Management, Principal, Vice Principals, Head – Training & Placement Cell, Head – Department of Computer Applications, and the coordinator of the programme for their unwavering support, which made the event possible. They also warmly welcomed the resource person for the training session, Dr. Tirumalasetty Venkateswara Rao, Corporate Trainer, Hexaware Technologies, Hyderabad.

The program began with a formal welcome by **Dr. N. Naveen Kumar**, Head - Department of Computer Applications. In his address, he highlighted the importance of training program and also thanked the Management, Principal, Vice Principals and Faculty for their continuous support in organizing such enriching training activities for MCA students.

Objective of the Training Program:

The primary aim of this training session was to enhance the practical programming skills of I Year MCA students by introducing Java from basic to advanced level. The focus was on writing clean, logical, and problem-solving oriented code with real-time application exposure. Students were trained progressively from simple syntactic constructs to advanced programming challenges including data structures and dynamic programming.

Structure of the Training Program:

The program was conducted over **19 sessions**, spanning **three weeks**, with each session lasting for three hours (9:30 AM – 12:30 PM). The sessions were hands-on involving live coding, problem-solving, demonstrations, and student practice.

Topics Covered:

The detailed day-wise topics covered are as follows:

Day	Date	Time	Topics/Programs Covered
1	24-05-2025	09:30 am-12:30 pm	**Basic Programs:** 1) Rate of Interest. 2) Creating mail id using first name and last name. 3) Find out total number of matches played in tournament, where n teams are played and each team plays only One match with every other team. 4) Arithmetic progression 5) Printing tables 6) Read marks using conditional Statements (if, else if and else) 7) Income tax program
2	25-05-2025	09:30 am-12:30 pm	1) Modular arithmetic 2) HCF and GCD with or without method 3) How to write a method 4) Static and non-static 5) Contains () of String 6) Length () method of a string 7) Split function 8) Difference between next () and nextLine () 9) NextInt (), next Double () 10) Int array, String array 11) Program for longest word. 12) Program for sum of digits.
3	26-05-2025	09:30 am-12:30 pm	1) Type conversion. 2) Digit sum filtering. 3) Palindrome check and Reverse a number. 4) Character to Number and vice versa. 5) Upper case / Lower case printing. 6) String comparison. 7) Printing A-Z and a-z. 8) Integer array of n zeros. 9) Matrix and its reverse. 10) Printing numbers in a square matrix (n*n) arranged in a Spiral pattern. 11) Searching for key element in the list.

4	27-05-2025	09:30 am-12:30 pm	1) Reverse an array using two pointer technique for number and character. 2) Reversing a string. 3) Rotations of a String. 4) Substrings. 5) Program for Moving zeros to the end . 6) Program to fill (n*n) 2D array in a Clockwise Spiral order for numbers and alphabet. 7) Anti-clockwise Spiral Order for numbers and alphabet.
5	28-05-2025	09:30 am-12:30 pm	1) Finding max, max position, min, min position 2) Sum and Average 3) Prime number 4) HashSet 5) HashMap 6) String Builder
6	29-05-2025	09:30 am-12:30 pm	1) Sum and Average, taking input from user and using parseInt. 2) String compression and length encoding 3) count and say sequence 4) Anagram check 5) Sorting array using bubble sort for numbers and names 6) Program for Bubble Sort 7) Printing number of passes for sorting an array.
7	30-05-2025	09:30 am-12:30 pm	1) Modified Bubble sort 2) Merge sort 3) Finding nth prime number and nearest prime number 4) nth Fibonacci 5) Finding nth term and series having alternate Fibonacci and prime numbers. 6) Binary Search 7) Linear Search 8) Recursion 9) Sum of first n natural numbers using recursion.
8	31-05-2025	09:30 am-12:30 pm	1) Recursion and non-recursion: a) sum of first n natural numbers b) nth Fibonacci c) GCD of two numbers (only Recursive) d) Binary to Decimal f) prime check g) palindrome (only Recursive) 2) Printing 1to n numbers without for loop and multiple print statements.
9	02-06-2025	09:30 am-12:30 pm	1) Binary Search using Recursion and non-recursion 2) Length of Longest Palindrome 3) Finding number of whitespaces, characters, Special symbols and digits in a string 4) Reversing characters in a string without Reversing special symbols 5) Boxing and unboxing. 6) Introduction to lambda function. 7) Array List
10	03-06-2025	09:30 am-12:30 pm	1)Using a stack reverse the digits of a numbers. 2)Find out smallest number after removing k digits. 3)Kadane's Algorithm 1. Brute Force 2. Two Pointers 3. Hashing 4) First repeating Character using Brute Force
11	04-06-2025	09:30 am-12:30 pm	1) Knapsack 2) Minimum Cost Path
12	05-06-2025	09:30 am-12:30 pm	1)Minimum Cost Ticket Problem 2) Circular / Straight House Robber

			3) Subsets 4) Longest Common Subsequence of two Strings 5) Length of Longest Superstring 6) Wine Selling Problem
13	06-06-2025	09:30 am-12:30 pm	1) Stock buy and sell problem 2) Matching Braces problem 3) Minimum Coins or Milk Vendor problem 4) Total number of ways to climb the steps
14	07-06-2025	09:30 am-12:30 pm	1) Candy distribution Problem using Ranks 2) Gold Mine problem 3) N-Queen (4*4 and 8*8) 4) Linked List Introduction
15	08-06-2025	09:30 am-12:30 pm	1) Linked List: 1. Add a node at tail 2. Add a node at head 3. Insert a node before a given node 4. Insert a node at specific position 5. Remove a node at head and tail 6. Search for a node 7. Remove node from the middle 8. Count number of nodes 9. Print the Linked List 10. Reverse the Linked List 2) Structure of Binary Search Tree
16	09-06-2025	09:30 am-12:30 pm	1) Sorting a Linked List 2) Tree Traversals 1. Pre-Order 2. Post-Order 3. In-Order 4. BFS 5. DFS 3) Adding and Deleting nodes in a Tree 4) Printing Total number of nodes 5) Printing maximum height of a Tree 6) Checking whether the given tree is a balanced or not 7) Checking whether the given tree is a BST or not Left subtree and Right subtree
17	10-06-2025	09:30 am-12:30 pm	1) Check whether the given string is a password or not 2) Rat Food Problem 3) Dynamix Programming 1. Fibonacci Series 2. House Robber Problem 4). Minimum Cost Path Problem
18	11-06-2025	09:30 am-12:30 pm	1) Rock, Paper and Scissors Problem 2) Rock, Paper and Scissors Problem using HashMap 3) Return a String in Lower Case and Upper Case if the given contains lower Case and Upper-Case letters 4) Objective type of questions like pseudo codes 5) Finding total number of paths using dynamic programming 6) Finding longest common subsequence using dynamic programming
19	12-06-2025	09:30 am-12:30 pm	1) Monthly EMI Problem 2) Game of Strings Problem 3) Game of Co-Ordinates Problem 4) Finding magic numbers from a given list 5) Remove alternate characters in String 6) Stone Crushing Problem 7) Printing maximum number of teams that can be formed with four members in a team must contain at least one experienced and one fresher

Program Outcome:

- Students acquired strong foundational skills in Java programming.
- They gained confidence in handling competitive programming challenges.
- Concepts like recursion, dynamic programming, data structures, and algorithm design were practiced thoroughly.
- The training bridged the gap between academic learning and industry expectations.

Student Feedback:

The students actively participated throughout the training and expressed great appreciation for the structured and hands-on learning approach. Many students reported improved confidence in writing code independently and solving complex programming tasks.

Vote of Thanks:

The training session concluded with a vote of thanks delivered by Mr. Pala Hanok who expressed his heartfelt thanks to the Management, Principal, Vice Principals, Head- Department of Computer Applications, Head – Training & Placements, Faculty & Non-Teaching staff and all the participants for their active involvement and contribution to the event's success.

Special thanks to **Dr. Tirumalasetty Venkateswara Rao**, the esteemed resource person, for delivering rich and engaging sessions to enhance students' programming skills in Java Programming.