



# ST. ALOYSIUS COLLEGE(AUTONOMOUS), JABALPUR

Reaccredited 'A+' Grade by NAAC(CGPA:3.68/4.00)

College with Potential for Excellence by UGC

DST-FIST Supported & STAR College Scheme by DBT

## Faculty of Science

Bachelor of Computer Application (B.C.A.)

**SUBJECT: COMPUTER APPLICATION**

B.C.A. IV Semester

Paper-Major

Programming using Java

**Course Outcomes**

CO. No.	Course Outcomes	Cognitive Level
CO 1	Use an integrated development environment to write, compile, run, and test simple object-oriented Java programs.	U, A
CO 2	Read and make elementary modifications to Java programs that solve real-world problems.	U
CO 3	Validate input in a Java program.	U
CO 4	Design and use basic applet for web page.	U, Analyze

## Credit and Marking Scheme

	Credits	Marks		Total Marks
		Internal	External	
<b>Theory</b>	4	40	60	<b>100</b>
<b>Practical</b>	2	40	60	<b>100</b>
<b>Total</b>	<b>6</b>		<b>200</b>	

## Evaluation Scheme

	Marks	
	Internal	External
<b>Theory</b>	3 Internal Exams of 20 Marks (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of Semester)
<b>Practical</b>	3 Internal Exams (During the Semester) (Best 2 will be taken)	1 External Exams (At the End of Semester)





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## Programming using Java

### Theory

No. of Lectures (in hours per week): 2 Hrs. per week

Total No. of Lectures: 60 Hrs.

Maximum Marks: 60

Units	Topics	No. of Lectures
I	<b>The Java Environment:</b> History and features of java, C++ VS java, JAVA Program Structure, Java Virtual Machine concepts, Primitive data types, variables and constants, operators, expression, statement-branching, looping and jumping, labeled statements.	12
II	<b>Object Oriented Programming in Java:</b> Classes, objects and methods: defining a class, adding variables and methods, creating objects, constructor, Instances, field and methods initialization by constructors, Copy constructor. Arrays, String classes, Wrapper classes.	12
III	Inheritance: Inheritance basics, Super class, Sub-class, Method overloading, abstract classes. Interfaces: defining an interface, implementing & applying interfaces, variables in interfaces, extending interfaces.	12
IV	Multithreading and Exception Handling: Basic idea of multithreaded programming; The lifecycle of a thread, Creating thread with the thread class and runnable interface, Basic idea of exception handling: The try, catch and finally.	12
V	Applet programming-Local and Remote Applets, Applet Vs Application, creating and executing java applets, inserting applets in a web page, passing parameter to applets, Applet Tag, Getting Input from User.	12

## References

### Text Books:

- Java A Complete reference by Herbert Schildt, Mc Graw hill publication
- Thinking in Java (3rd edition) Bruce Eckel, Prentice Hall
- The Java Language Specification, Java SE 8, Cay S. Horstmann, Gary Cornell, Prentice Hall
- Core Java an Integrated Approach (Black Book), Dr. R. Nageswara Rao, Prentice Hall

### Web Links:

- [www.javatutorials.com](http://www.javatutorials.com)
- [www.javatpoint.com](http://www.javatpoint.com) [www.tutorialspoint.com](http://www.tutorialspoint.com)

A decorative flourish is followed by four handwritten signatures in blue ink. From left to right, the signatures appear to be: a stylized 'A', a signature that looks like 'Anant', a signature that looks like 'V', and the initials 'MD'.



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Programming using Java

List of Practical

1. Write a program to print number in words using Nested if and Switch case.
2. WAP called OddEven which prints "odd number" if the int variable "number" is odd or "even number" otherwise.
3. WAP to find sum and average of 10 number using array.
4. WAP to display reverse of a number digit using arrays.
5. WAP to display grade according to the marks obtained by the student.
6. Find the factorial of a given number.
7. WAP to print Fibonacci series.
8. WAP to implement method overloading.
9. WAP to design a class using abstract method and classes.
10. WAP to create a package of your name and use that package in a class.
11. WAP to implement parameterized constructor with default argument.
12. WAP to implement multiple inheritance.
13. Write an applet program to draw a rectangle (color=orange) and a right aligned oval.
14. Develop an applet that receives 3 numeric values as input from the user and then display the largest number on the screen.
15. WAP to read data from the inputted text file name and print its content on the console.
16. WAP to merge two files into third file.
17. WAP to delete duplicate lines in text file.
18. WAP to implement FileInputStream class to read binary data from any image file.



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