



Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: ADVANCED JAVA PROGRAMMING

Subject Code: MCA101

L-T-P-C: 3-1-0-4

Course Objectives:

Sl.No	Course Objectives
1	Programming in the Java programming language.
2	Knowledge of object-oriented paradigm in the Java programming language.
3	Apply the concept of Servlet and its life cycle to create web application.
4	Build Database connection for the web applications.

Course Outcomes:

Course Outcome	Descriptions
CO1	Illustrate the concepts of generalization and run time polymorphism applications to develop reusable components.
CO2	Exemplify the usage of Packages, Interfaces, Exceptions and Multithreading in building efficient applications.
CO3	Understand the concepts of Servlet, JSP and its life cycle.
CO4	Build Database connections.



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Self Study:

An Overview of C++: Object oriented programming concepts, differences between Object oriented programming and procedure oriented Programming, Introduction to C++, data types, operators, arrays, expressions, program control statements, Sample Program, comments, Input output handling, Variables, const keyword, reference variables, Functions, Function Prototype, parameter passing techniques, function with default arguments. Function overloading, inline function, Inheritance, polymorphism.

UNIT	Description	Hours
I	A Closer Look at Methods and Classes: Controlling Access to Class Members, Pass Objects to Methods, How Arguments are passed, Returning Objects, Method Overloading, Overloading Constructors, Recursion, Understanding Static, Introducing Nested and Inner Classes. Inheritance: Inheritance Basics, Member Access and Inheritance, Constructors and Inheritance, Using super to Call Superclass constructors, Using super to Access Superclass Members, Creating a Multilevel Hierarchy, When are Constructors Executed, Superclass References and Subclass Objects, Method Overriding, Overridden Methods support polymorphism, Why Overridden Methods, Using Abstract Classes, Using final, The Object Class.	11
II	Interfaces: Interface Fundamentals, Creating an Interface, Implementing an Interface, Using Interface References, Implementing Multiple Interfaces, Constants in Interfaces, Interfaces can be extended, Nested Interfaces. Packages: Package Fundamentals, Packages and Member Access, Importing Packages, Static Import. Exception Handling: The Exception Hierarchy, Exception Handling Fundamentals, The Consequences of an Uncaught Exception, Exceptions Enable you to handle errors gracefully, using Multiple catch clauses, Catching subclass Exceptions, try blocks can be nested, Throwing an Exception, A Closer look at Throwable, using finally, using throws, Java's Built- in Exceptions, Creating Exception Subclass.	11
III	Servlet: Structure, Servlet packaging, HTML Building utilities, Lifecycle, Single Thread Model Interface, Handling Client request: Form Data, HTTP Request Headers. Generating Server Response: HTTP Status Codes, HTTP Response Headers, Handling Cookies, Session Tracking.	10
IV	Introduction to JSP: Overview of JSP: JSP Technology, Need of JSP, Benefits of JSP, Advantages of JSP, Basic Syntax, Invoking Java code with JSP Scripting Elements, Creating Template Text, Invoking Java Code form JSP, Limiting Java Code in JSP, Using JSP Expressions, Comparing Servlets and JSP, Writing Scriptlets. For Example: Using Scriptlets to make parts of JSP Conditional, Using declarations, Declaration Examples.	10
V	Structure of generated Servlets and Java Beans: Controlling the structure of generated Servlets: The JSP Page directive, Import Attribute, Session Attribute, isEIgnore attribute, Buffer and Autoflush Attribute, Info Attribute, errorPage, and isErrorPage Attributes, isThreadSafe Attribute, extends Attribute, language Attribute. Talking to Database: Immediate Solutions, Essential JDBC program, using Prepared Statement Object. JDBC in Action: Result sets, Batch updates, Basic JDBC data types, Advanced JDBC data types, and immediate solutions.	10

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Question paper Pattern:

The question paper will have eight questions.

- **Each full question consists of 20 marks.**
- **Each full question will have sub questions covering all the topics under a unit.**
- **The students will have to answer 5 full questions.**

Text Books:

Sl.No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Herbert Schildt, Dale Skrien	Java Fundamentals, A comprehensive Introduction	Tata McGraw Hill		2013
2	Marty Hall, Larry Brown	Core Servlets and Java server pages	Core Technologies.	1/2	-
3	Kogent Inc.	Java 6 Programming Black Book	Dream tech press	-	2012

Reference Books:

Sl.No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Hari Mohan Pandey	Java Programming	Pearson Education		2012
2	KoGenT	Java6 Programming, BlackBook	Dreamtech Press		2012
3	CayHortsmann	Java2Essentials,	Wiley	2nd edition	



Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: OPERATING SYSTEM

Subject Code: MCA102

L-T-P-C: 3-1-0-4

Course Objectives:

Sl.No	Course Objectives
1	Apply the fundamental concepts of the operating systems (OS) for a given problem and discuss its performance issues.
2	Analyse the given problem and solve using OS management techniques.
3	Demonstrate the working of basic commands of UNIX environment including file processing.
4	Demonstrate the usage of different shell commands and variables.

Course Outcomes:

Course Outcome	Descriptions
CO1	Understand the basic of Computer and Operating System Structure.
CO2	Realize the concept of Process Management.
CO3	Analyze and Evaluation of Synchronization and Deadlock.
CO4	Analyze different shell commands using unix operating system.



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UNIT	Description	Hours
I	Introduction to Operating Systems, System Structure, What operating systems do, Computer System Organization, Computer System Architecture, Operating System Operations, Computing Environments, Operating System Services, System Calls, Types of System Calls, System Programs, Operating System Structure, Virtual Machines, System boot, Overview of Process, Process Scheduling, Operations on Processes, Inter – Process Communication, Multi – Threaded Programming, Multithreading Models.	11
II	Process Management Process Scheduling: Basic Concepts, Scheduling Criteria, Scheduling Algorithms, Multiple Processor Scheduling, Process Synchronization, Synchronization, The Critical Section Problem, Peterson’s Solution, Semaphores, Classical Problems of Synchronization.	11
III	Deadlocks: System model, Deadlock Characterization, Methods for handling deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from deadlock. Memory Management, Memory Management Strategies, Background, Swapping, Contiguous Memory Allocation, Paging, Segmentation, Virtual Memory Management, Background, Demand Paging, Page Replacement, Allocation of Frames, Thrashing.	10
IV	The File System: The File, What’s in a File name? The Parent-Child Relationship, The HOME Variable: The Home Directory, pwd, cd, mkdir, rmdir, Absolute Pathnames, Relative Pathnames, The Unix File System. The vi Editor: vi Basics, Input Mode, ex Mode and Command Mode. Basic File Attributes: ls options, File Ownership, File Permissions, chmod, Directory Permissions, Changing the File Ownership. More File Attributes: File Systems and Inodes, Hard Links, Symbolic Links, the Directory, umask, Modification and Access Times, find. The Shell: The Shell’s Interpretive Cycle, Shell Offerings, Pattern Matching-The Wild- cards, Escaping and Quoting. Redirection: The Three Standard Files, Two Special Files. /dev/null and /dev/tty, pipes, tee: Creating a Tee, Command Substitution.	10
V	The Process: Process Basics, ps: Process Status, System Processes, Mechanism of Process Creation, Internal and External Commands, Running Jobs in Background, Killing Processes with Signals, Job Control, at and batch, cron. Essential Shell Programming: Shell Variables, Environment Variables, Shell Scripts, read, Using Command Line Arguments, exit and exit status of command, The Logical Operators, The if Conditional, using test and [] to Evaluate Expression, The case Conditional, expr, while: looping, for: looping with a list, set and shift, trap, Debugging Shell Scripts with set – x, in laboratory Students shall implement programs which supplement the theory concepts.	10

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The students will have to answer 5 full questions

Text Books:

Sl No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	A. Silberschatz, P. B. Galvin and G. Gagne:	Operating Systems Principles	Wiley India	8th Edition	Reprint 2012
2	Sumitabha Das	UNIX Concepts and Applications	Tata McGraw Hill	4th Edition	2006

Reference Books:

Sl No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Kenneth Roson et al, Osborne	UNIX: The Complete Reference	McGraw Hill		2000
2	Steve Montsugu	Using UNIX	Prentice Hall India	2nd Edition	1999
3	MG Venkateshmurthy,	UNIX and Shell Programming	Pearson Education Asia		2005
4	D M Dhamdhere	Operating Systems – A Concept Based Approach	Tata McGraw Hill	2nd Edition	2002



Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: ADVANCED WEB PROGRAMMING

Subject Code: MCA103

L-T-P-C: 3-0-0-3

Course Objectives:

Sl.No	Course Objectives
1	Expose students to various technologies used in web application development.
2	Demonstrate the role of JavaScript in web application development.
3	Provide a comprehensive introduction to Rich Internet Web Applications.
4	Integrate dynamic documents with Java script, JQuery, and AngularJS.

Course Outcomes

Course Outcome	Descriptions
CO1	Acquire knowledge of building the Web Applications.
CO2	Design Rich Internet Applications with AJAX.
CO3	Build web applications using JQuery, AngularJS.
CO4	Developing Dynamic web applications using Javascript.

Self Study:

An overview of HTML, XHTML,HTML5, Cascading Style Sheet.



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UNIT	Description	Hours
I	JavaScript: Overview of JavaScript, Object orientation and JavaScript, general Syntactic characteristics, Primitives, operations, and expressions, Screen output and keyboard input, Control statements, Object creation and modification, Arrays, Functions, Constructors, Pattern matching using regular expressions, Errors in scripts. JavaScript and XHTML Documents: The JavaScript Execution Environment, The Document Object Model, And Elements Access in Java Script, Dynamic Documents with JavaScript: Introduction, Positioning Elements, Stacking Elements.	08
II	Introduction to PHP: Origins and uses of PHP, Overview of PHP, General syntactic characteristics, Primitives, operations and expressions, Output, Control statements, Arrays, Functions, Pattern matching, Form handling, Files, Building Web applications with PHP: Tracking users, cookies, sessions Rich Internet Applications with Ajax: Limitations of Classic Web application model, AJAX principles, Technologies behind AJAX, Examples of usage of AJAX.	08
III	Ruby: Origins and uses of Ruby, Scalar types and their operations, Simple input and output, Control statements, Arrays, Hashes, Methods, Classes, Code blocks and iterates, Pattern matching. Rails: Overview of Rails, Document requests, Processing forms, Layouts. Rails applications with Databases.	08
IV	JQuery: Syntax, selectors, events, JQuery HTML, JQuery Effects, JQueryCSS	08
V	Angular JS: General Features, Core Features, Concepts, Advantages, Disadvantages, MVC Architecture, Directives, Expressions, Controllers, Filters, Tables, Forms, Services, Examples.	07

Question paper Pattern:

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- **Each full question will have sub questions covering all the topics under a unit.**
- **The students will have to answer 5 full questions.**

Text Books:

Sl.No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Robert W.Sebesta	Programming the World Wide Web	Pearson education	4th Edition	2012
2	Bear Bibeault, Yehuda Katz	jQuery in Action	Dream Tech India	3rd Edition	2008



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Reference Books:

Sl.No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	https://www.tutorialspoint.com/angularjs https://www.tutorialspoint.com/Jquery				
2	Krishna Rungta	Angular JS			
3	Chrish Bates	Web programming	Wiley Publications		
4	Randy Connolly, Ricardo Hoar	Fundamentals of Web Development	Pearson	2nd Edition	2018



Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: MATHEMATICAL FOUNDATION FOR COMPUTER APPLICATIONS

Subject Code: MCA104

L-T-P-C: 3-0-0-3

Course Objectives:

Sl.No	Course Objectives
1	Apply the fundamentals of set theory and matrices for the given problem.
2	Realize different types of distribution; evaluate the mean and variance for the given case study and formulate the problem using linear programming and apply decision making concept for the given case study.
3	Model the given problem by applying the concepts of graph theory and design strategy using gaming theory concepts for the given problem.
4	Identify and list the different applications of discrete mathematical concepts in computer science.

Course Outcomes:

Course Outcome	Descriptions
CO1	Use the logical notation to define and reason about fundamental Mathematical concepts such as sets, relations, functions, and integers.
CO2	Calculate number of possible outcomes of elementary combinatorial Processes such as permutations and combinations.
CO3	Calculate probabilities and distributions for simple combinatorial processes; calculate expectations.
CO4	Apply statistical methods for correlation and regression. Fitting a curve to a discrete data.



UNIT	Description	Hours
I	Set Theory and Matrices: Sets, Operations on sets, Cardinality of sets, inclusion-exclusion principle, pigeonhole principle, matrices, finding Eigen values and Eigen vectors.	08
II	Mathematical Logic: Propositional Logic, Applications of Propositional Logic, Propositional Equivalences Predicates and Quantifiers, Nested Quantifiers, Rules of Inference Introduction to Proofs.	08
III	Relations: Relations and Their Properties, n-ary Relations and Their Application, Representing Relations, Closures of Relations, Equivalence Relations, Partial Orderings.	08
IV	Random variable and probability distribution: Concept of random variable, discrete probability distributions, continuous probability distributions, Mean, variance and co-variance and co-variance of random variables. Binomial and normal distribution, Exponential and normal distribution with mean and variables and problems.	08
V	Graph Theory: Graphs and Graphs models, Graph Terminology and Special Types of Graphs, Representing Graphs and Graph Isomorphism, Connectivity, Euler and Hamilton Paths, Shortest-Path Problems, Planar Graphs, Graph Coloring.	07

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Text Books:

Sl No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Kenneth H Rosen	Discrete Mathematics and its Applications	McGraw Hill publications	7th edition	
2	Wolpole Myers Ye	Probability and Statistics for engineers and Scientist	Pearson Education	8th edition	



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Reference Books:

Sl No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Richard A Johnson and C.B Gupta	Probability and statistics for engineers	Pearson Education		
2	J.K Sharma	Discrete Mathematics	Mac Millian Publishers,India	3rd Edition	2011



Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: SOFTWARE ENGINEERING

Subject Code: MCA105

L-T-P-C: 3-0-0-3

Course Objectives:

Sl.No	Course Objectives
1	Provide a clear understanding of Software Engineering, Software Product Development Phases and its applications in real world.
2	Expose to recent trends in Software Engineering like extreme programming and evolutionary methods.
3	Use of Component Based Software Engineering.
4	Learn testing techniques, viz. black box and white box testing, testing tools and methodology and analyze modeling techniques.

Course Outcomes:

Course Outcome	Descriptions
CO1	Categorize problems based on their characteristics and practical importance.
CO2	Apply the correct process models for software development. Formulate a problem as per the testing techniques.
CO3	Apply the techniques, skills, and modern engineering tools necessary for Engineering practice.
CO4	Apply new Generation of Software Engineering Technology to Meet Current and Future Industrial Challenges of Emerging Software Trends.



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UNIT	Description	Hours
I	Introduction: Professional Software Development Attributes of good software, software engineering diversity, IEEE/ ACM code of software engineering ethics, case studies. Software Process & Agile Software Development Software Process models: waterfall, incremental development, reuses oriented, Process activities; Coping with change, The rational Unified process. Agile methods, Plan-driven and agile Development, Extreme Programming, Agile project management, Scaling agile methods.	08
II	Requirements Engineering: Functional and non-functional requirements, The software requirements document, Requirements specification, Requirements engineering processes, Requirement elicitation and analysis, Requirements validation, Requirements management Component-based software engineering Components and component model, CBSE process, Component composition.	08
III	System Modeling, Architectural Design : Context models, Interaction models, Structural models, Behavioral models, Model-driven engineering, Software architecture: the role of software architecture, architectural views, component and connector view, Architectural styles for C&C view, Documenting architectural design	08
IV	Design and implementation: Design: Design concepts, Function oriented design, detailed design, verification, matrix (Complexity matrix for function oriented design) Distributed Software engineering Distributed system issues, Client-server computing, Architectural patterns for distributed systems, Software as a service.	08
V	Planning a software Project: Process planning, Effort estimation, Project scheduling and staffing, Software configuration management plan, Quality plan, Risk Management, Project monitoring plan. Software Testing: Testing fundamentals, Black-box testing, White-box testing, Testing process	07

Question paper Pattern:

The question paper will have eight questions.

- **Each full question consists of 20 marks.**
- **Each full question will have sub questions covering all the topics under a unit.**
- **The students will have to answer 5 full questions.**

Text Books:

Sl.No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Ian Sommerville	Software Engineering (Chapters:- 1, 2, 3, 4, 5, 17, 18)	Person Education Ltd	9th edition	2011

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2	Pankaj Jalote	Software Engineering (Chapters:-4, 6.1, 6.2, 6.5, 6.6)	Wiley India Pvt Ltd	-	2010
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Reference Books:

Sl No	Author	Text Book title	Publisher	Volume / Issue	Year of Edition
1	Roger S Pressman	Software Engineering-A Practitioners approach	McGraw-Hill	6th Edition	2010
2	Hans Van Vliet	Software Engineering Principles and Practices	Wiley-India	3rd Edition	2010



Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: ADVANCED JAVA PROGRAMMING LAB

Subject Code: MCA106

L-T-P-C: 0-0-2-1

Course Objectives:

Sl.No	Course Objectives
1	Acquire knowledge and skill necessary to write java programs.
2	Learn the object oriented concepts and its implementation in Java
3	To provide the ability to design console based, GUI based and web based applications.
4	Able to understand integrated development environment to create, debug and run multi-tier.

Course Outcomes:

Course Outcome	Descriptions
CO1	Illustrate the object oriented principles with the help of java programs.
CO2	Apply the concept of Servlet and its life cycle to create web application.
CO3	Apply JSP tags and its services to web application.
CO4	Build Database connection for the web applications.



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Sl.No	Description
1	Write a java program to demonstrate Constructor Overloading and Method Overloading.
2	a) Write a java program to demonstrate Inheritance. b) Write a java Program for the implementation of Multiple inheritance using interfaces to calculate the area of a rectangle and triangle.
3	Write a java program which has: a) A Class called Account that creates account with Rs. 500 minimum balance, a deposit() method to deposit amount, a withdraw() method to withdraw amount and also throws LessBalanceException if an account holder tries to withdraw money which makes the balance become less than Rs. 500. b) A Class called Less_Balance_Exception which returns the statement that says withdraw amount (Rs.) is not valid. c) A Class which creates 2 accounts, both account deposit money and one account tries to withdraw more money which generates a Less Balance Exception take appropriate action for the same.
4	Write a java Servlet Program to implement a dynamic HTML using Servlet (username and Password should be accepted using HTML and displayed using a Servlet).
5	Write a java Servlet Program to Auto Web Page Refresh (Consider a webpage which is displaying Date and time or stock market status. For all such type of pages, you would need to refresh your web page regularly; Java Servlet makes this job easy by providing refresh automatically after a given interval).
6	Write a java Servlet Program to implement and demonstrate GET and POST methods (Using HTTP Servlet Class).
7	Write a java Servlet Program using cookies to remember user preferences.
8	Write a java Servlet program to track Http Session by accepting user name and password using HTML and display the profile page on successful login.
9	Write a JSP Program which uses jsp: include and jsp: forward action to display a Webpage.
10	Write a JSP program to implement all the attributes of page directive tag.
11	Write a java Program to insert data into Student DATA BASE and retrieve info based on particular queries (For example update, delete, search etc...).

Question paper Pattern:

In the practical Examination student has to execute one program from a lot of all the 11 questions.

Change of program is not permitted in the Practical Examination.

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Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: UNIX PROGRAMMING LAB

Subject Code: MCA107

L-T-P-C: 0-0-2-1

Course Objectives:

Sl.No	Course Objectives
1	Provide a clear understanding of core aspects of UNIX operating system.
2	Focusing on editors, command usage, filters, regular expressions, and other utility tools.
3	Explore the fundamentals of UNIX command set.
4	Provide sufficient knowledge on writing Shell scripts.

Course outcomes:

Course Outcome	Descriptions
CO1	Demonstrate the working of basic commands of Unix environment including file processing.
CO2	Apply Regular expression to perform pattern matching using utilities like grep and sed.
CO3	Implement unix commands/ system calls to demonstrate process management.
CO4	Demonstrate the usage of different shell commands, variable and develop shell scripts for developing the simple applications to the given problem.

Perform the following operations using vi editor, but not limited to:

- a. Insert character, delete character, and replace character.
- b. Save File and continue working.
- c. Save File and exit editor.
- d. Quit the editor, Quit without saving the file, and Rename a file.
- e. Insert lines; delete line, and Setline numbers.
- f. Search for a pattern.
- g. Move forward and backward.

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Sl.No	Description
1.a	Write a shell script that takes a valid directory name as a argument recursively descend all the sub-directors, find the maximum length of any file in that hierarchy and write the maximum value to the standard output.
1.b	Write a shell script that accepts a path name and creates all the components in that path name as directories. For example, if the script is named as mpc, then the command mpc a/b/c/d should create sub-directories a, a/b, a/b/c, a/b/c/d.
2.a	Write a shell script that accepts two filenames as arguments, checks if the permissions for these files are identical and if the permissions are identical, output common permissions otherwise output each filename followed by its permissions.
2.b	Write a shell script which accepts valid log-in names as arguments and prints their corresponding home directories, if no arguments are specified, print a suitable error message.
3.a	Create a script file called file properties that reads a filename entered and outputs it properties.
3.b	Write a shell script to implement terminal locking (Similar to the lock command). It should prompt for the user for a password. After accepting the password entered by the user, it must prompt again for the matching password as confirmation and if match occurs, it must lock the keyword until a matching password is entered again by the user. Note the Script must be written to disregard BREAK, control-D. No time limit need be implemented for the lock duration.
4.a	Write a shell script that accept one or more file names as argument and convert all of them to uppercase, provided they exists in current directory.
4.b	Write a shell script that displays all the links to a file specified as the first argument to the script. The second argument, which is optional, can be used to specify in which the search is to begin. If this second argument is not present, the search is to begin in the current working directory. In either case, the starting directory as well as its subdirectories at all levels must be searched. The script need not include error checking.
5.a	Write a shell script that accepts filename as argument and display its creation time if file exist and if does not send output error message.
5.b	Write a shell script to display the calendar for the current month with current date replaced by * or ** depending whether the date is one digit or two digit.



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6.a	Write a shell script to find a file/s that matches a pattern given as command line argument in the home directory, display the contents of the file and copy the file into the directory ~/mydir.
6.b	Write a shell script to list all the files in a directory whose filename is at least 10 characters. (Use expr command to check the length).
7.a	Write a shell script that gets executed and displays the message either “Good Morning” or “Good Afternoon” or “Good Evening” depending upon time at which the user logs in.
7.b	Write a shell script that accepts a list of filenames as its argument, count and report occurrence of each word that is present in the first argument file on other argument files.
8.a	Write a shell script that determines the period for which as specified user is working on a system and display appropriate message.
8.b	Write a shell script that reports the logging on of as specified user within one minute after he/she login. The script automatically terminates if specified user does not login during specified in period of time.
9.a	Write a shell script that accepts the filename, starting and ending line number as an argument and display all the lines between the given line number.
9.b	Write a shell script that folds long lines into 40 columns. Thus any line that exceeds 40 characters must be broken after 40th, a “/” is to be appended as the indication of folding and processing is to be continued with the residue. The input is to be supplied through a text file created by the user.
10.a	Write a shell script to find out total number of books sold in each discipline as well as Total book sold as given below: Electrical 34 Mechanical 67 Electrical 80 Computer Science 43 Civil 98 Mechanical 65 Computer Science 64
10.b	Write a shell script to compute gross salary of an employee accordingly to rule given below: · If basic salary < 10000 then HRA=15% of basic & DA=45% of basic. · If basic salary is >=10000 then HRA=20% of basic & DA=50% of basic.

Question paper Pattern:

- **In the practical Examination student has to execute one program from a lot of all the 10 questions.**
- **Change of program is not permitted in the Practical Examination.**

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Syllabus for the Academic Year - 2020 - 2021

Department: MCA

Semester: I

Subject Name: ADVANCED WEB PROGRAMMING LAB

Subject Code: MCA108

L-T-P-C: 0-0-2-1

Course Objectives:

Sl.No	Course Objectives
1	Make use of different tools to develop Web Applications.
2	Build platform independent dynamic web applications using JavaScript, JQuery.
3	Learn and develop XHTML documents using java script.
4	Build web applications using different scripting languages and use MYSQL Data base server.

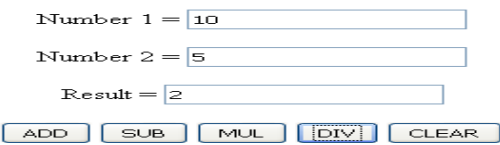
Course outcomes:

Course Outcome	Descriptions
CO1	Understand, analyze and apply server side scripting languages
CO2	Deliver Dynamic Content for website.
CO3	Develop Rich Internet Applications
CO4	Build web applications using PHP, and use MySQL as the underlying database server.

PART – A

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Sl.No	Description
1	Write a PHP program to process a file which contains English words, where each word is separated from the next word on a line by one space. The file is specified on the command line. The output of your program is a table in which the first column has unique words from the input file and the second column has the number of times the word appeared in the file; no word can appear twice in the table. Use two arrays to store the table, one for the words and the other for the frequency values.
2	Write a PHP program to insert name and age information entered by the user into a table created using MySQL and to display the current contents of this table.
3	Create a XHTML form with Name, designation, Address, and E-mail text fields. On submitting, store the values in MySQL table using PHP. Retrieve and display the data based on Name.
4	Develop and demonstrate, a HTML document that collects the USN (the valid format is : Two digits followed by three upper-case characters followed by two digits (no embedded spaces are allowed) from the user. Use JavaScript that validates the content of the document. Suitable messages should be displayed in the alert if errors are detected in the input data. Use CSS and event handlers to make your document appealing. Modify the above program to get the current semester also (restricted to be a number from 1 to 4).
5	Develop and demonstrate, using JavaScript script, a XHTML document that contains three short paragraphs of text, stacked on top of each other, with only enough of each showing so that the mouse cursor can be placed over some part of them. When the cursor is placed over the exposed part of any paragraph, it should rise to the top to become completely visible.
6	Develop a simple calculator to perform arithmetic (addition, subtraction, multiplication and division) operations on given two numbers. Use an HTML tag that allows the user to input two numbers and to display the result of arithmetic operation. Write suitable HTML and JavaScript and CSS to your simple calculator. The following figure show sample document display. A SIMPLE CLACULATOR 
7	Develop using JQuery to Limit character input in the text area including count.
8	Develop using JQuery to animate an element, by changing its height and width.
9	Based on check box, disable/enable the form submit button using JQuery.



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10	Build a Rails application to accept book information viz. from a web page and store the information in a database and to search for a book with the title specified by the user and to display the search results with proper headings.
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PART - B

1	<p>Develop a web application project using the languages and concepts learnt in the theory and exercises listed in part A with a good look and feel effects. You can use any web technologies and frameworks and databases.</p> <ol style="list-style-type: none">1. The team must submit a brief project report (25-30 pages) that must include the following:<ol style="list-style-type: none">a. Introductionb. Requirement Analysisc. Software Requirement Specificationd. Analysis and Designe. Implementationf. Testingg. Conclusion
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Note: CIE Marks Distribution - Part A carries 30 Marks and Part B carries 20 Marks.

Question paper Pattern:

<ol style="list-style-type: none">1. In Practical examination student has to execute one question out of 10 questions from Part A. This is evaluated for 30 Marks.2. A team of maximum two students must demonstrate the project individually (Part B). This is evaluated for 20 Marks.
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