SOUTH GUJARAT UNIVERSITY, SURAT
M.Sc. (Information Technology) Programme
6th Semester Syllabus

Effective From July-2002

Paper No. : 601
Paper Title : Web Development -II [L:3, T:1]

1. Introduction to JavaScript

2. JavaScript Basics
    - 2.1 Data Types
    - 2.2 Variables
    - 2.3 Array
    - 2.4 Expression
    - 2.5 Functions
        - 2.5.1 Built-in functions
        - 2.5.2 User defined functions
    - 2.6 Flow Control Structures
    - 2.7 Objects
        - 2.7.1 Built-in objects
        - 2.7.2 User defined objects

3. Document Object Model (DOM)
    - 3.1 HTML objects
    - 3.2 Collections
    - 3.3 Elements
    - 3.4 window objects
    - 3.5 document objects
    - 3.6 TextRange objects

4. Event Handling
    - 4.1 Events
    - 4.2 Event firing
    - 4.3 Event handlers
    - 4.4 Binding to events
    - 4.5 The window.event object
    - 4.6 Overriding default events

5. JavaScript and Cookies
    - 5.1 Session Cookies
    - 5.2 Persistent Cookies

6. Java & the Internet
    - 6.1 Brief introduction to Internet.
    - 6.2 An introduction to Java phenomenon.

7. Java Phenomenon
    - 7.1 Java & Hot Java
    - 7.2 Java Scripts
    - 7.3 Features of Java

8. JDK and Use
    - 8.1 Java Compiler
    - 8.2 Java Interpreter
    - 8.3 Java debugger
    - 8.4 Applet Viewer
    - 8.5 Java Disassembler

9. Java Language
    - 9.1 Syntax, Comparative study with other OOP Lang.(C++)

10.Class & Object
    - 10.1 Java classes
    - 10.2 Java Interfaces

11. Programming the Web with Applets & Scripts
    - 11.1 Developing Applets
    - 11.2 Integrating Applets into distributed Applications
    - 11.3 Working with Java script

Reference Books:

1. HTML 4 - Second Edition - Rick Darnell - Techmedia
2. Netscape JavaScript 1.2 - Kent & Kent - Comdex
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5. C.Thomas : Introduction to Object Oriented Programming With Java - TMH
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Paper No. : 602
Paper Title : Unix & Shell Programming [L:3,T:1]

1. Overview of UNIX
   - 1.1 Architecture
   - 1.2 Kernel
     - 1.2.1 Process
     - 1.2.2 Rebuilding Kernel
   - 1.3 Shell
     - 1.3.1 Features
     - 1.3.2 Different type of Shells and their comparison
     - 1.3.3 Command interpretation by shell
     - 1.3.4 Initialization (i.e. login) scripts
   - 1.4 Booting Process
     - 1.4.1 Boot sequence
     - 1.4.2 Boot Scripts
     - 1.4.3 Init process
     - 1.4.4.System profiles
     - 1.4.5 Booting multiple OS
2. Getting started
   - 2.1 Login process
   - 2.2 Login shell
   - 2.3 User profiles and its customization
   - 2.4 Understanding unix command structure
   - 2.5 Elementary commands like pwd, who, passwd, man, tty etc.
   - 2.6 Editor
3. UNIX services
   - 3.1 File Management
     - 3.1.1 Different type of files
     - 3.1.2 File system structure
     - 3.1.3 Path – Absolute and Relative
     - 3.1.4 File and Directory permissions
     - 3.1.5 File and directory storage strategies (i.e. structure)
     - 3.1.6 Commands related to file management like ls, rm, cat, cp, mv, touch, mkdir, rmdir, wc, chmod, chown, chgrp, ln, pg, more, cmp, diff, head, tail, sort, uniq
   - 3.2 Process Management
     - 3.2.1 Process and PCB
     - 3.2.3 Scheduling algorithm
     - 3.2.3 Process status
     - 3.2.4 Background and Foreground process
     - 3.2.5 Signals

3.2.6 Process synchronization
3.2.7 Commands related to process management like ps, kill, trap, nice, batch, at, cron

3.3 Memory and Device Management
3.3.1 Memory management schemes
3.3.2 Shared memory
3.3.3 Memory protection
3.3.4 Overview of device management
3.3.5 Device classifications including minor and major device number
3.3.6 Device drivers

4. Shell Programming - I
4.1 Variables – User and system
4.2 Assignment statement
4.3 I/O statements
4.4 Escaping
4.5 Quoting
4.6 Redirection
4.7 Pipe
4.8 Command substitution
4.9 Command grouping
4.10 Schell script
4.11 Different ways of executing scripts
4.12 Commands like cut, paste, set, unset

5. Shell Programming - II
5.1 Positional parameters and others like $@, $*, $#, $? etc
5.2 Conditional execution (&& and ||)
5.3 Operators – arithmetic, relational, logical, file related, string related
5.4 Arithmetic manipulation – expr, let (if available in default shell)
5.5 String manipulation – expr
5.6 Statements like if, case, while, until, for
5.7 test command
5.8 Exporting shell variables
5.9 Array (if available in default shell)
5.10 Functions
5.11 Commands like eval, exec, trap

6. Filtering utilities
6.1 grep, grep and fgrep
6.2 sed
6.3 awk / nawk, gawk (which ever available)

Reference Books:

1. The design of the UNIX operating system – M.J.Bash – PHI
2. Your UNIX the ultimate Guide – S. Das – TMH
3. The complete reference Linux – Richard Peterson – TMH
4. Unix for Super User – Addison Wesly
5. The UNIX Programming Env. – Kernigh & Pike – PHI
6. C & UNIX Programming – N Kutti
7. Working with UNIX – Vijay Mukhi – BPB
8. UNIX Shells – Bourn, Korn & C – Vijay Mukhi – BPB

SOUTH GUJARAT UNIVERSITY, SURAT
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Paper No. : 603
Paper Title : Microprocessor & Assembly Language [L:3,T:1]

1. Architecture of a microprocessor
   - 1.1 Introduction: Computers, microcomputers, microprocessors
   - 1.2 Internal architecture of a microprocessor
     - 1.2.1 Bus Interface Unit
     - 1.2.2 Execution Unit
     - 1.2.3 Registers, flag register
     - 1.2.4 Segmentation
   - 1.3 Addressing modes

2. Assembly Language Programming (8086)
   - 2.1 Program development steps
   - 2.2 Instruction format
   - 2.3 Program development tools

3. Assembly language programming techniques
   - 3.1 Data Transfer instructions
   - 3.2 Arithmetic instructions
   - 3.3 Logical instructions
   - 3.4 Branching, iteration implementations
   - 3.5 String instructions
   - 3.6 Writing & using procedures
   - 3.7 Assembler Directives

4 System connections
   - 4.1 Pin diagram of 8086 and descriptions of pins.
   - 4.2 Data & address multiplexing
   - 4.3 Memory & I/O addressing
   - 4.4 Minimum mode operation details
   - 4.5 System connections with latches, transceivers , memory etc (without timing considerations)
   - 4.6 Maximum mode- an introduction

5. Interrupts
   - 5.1 Types of interrupts
   - 5.2 IVT
   - 5.3 Interrupts and responses
   - 5.4 Simple applications

6 Introduction to PPI, serial interface, DMA, Timer/counter, Interrupt controller.

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Paper No. : 604
Paper Title : Project **[P:10 HRS]**

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SOUTH GUJARAT UNIVERSITY, SURAT
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Effective From July-2002

Paper No. : 606
Paper Title : Practical [P:10 HRS]

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