Unix Internals ,Shell Programming & Linux

MCS-401[T]

UNIT-I

Introduction to the kernel: Architecture of the Unix , the buffer cache, internal representation of files :inode, accessing blocks , releasing box ,structure of regular file ,conversion of path name to an inode ,inode assignment to new file , allocation disk block .

UNIT-II

System calls for the file system: OPEN,READ,WRITE , CLOSE ,PIPES,the pipe system call opening a named pipes , reading and writing pipes ,closing pipes ,DUP,LINK,UNLINK,system calls for TIME and CLOCK.

UNIT-III

The structure of processes : process states and transitions . layout of system memory, the context of a process saving the context of the process . manipulation of the process address space .

Process control : process creation ,signals , process termination awaiting process termination , the user id of a process, changing the size of the process.

UNIT –IV

Shell programming : study of different types of shell like C Shell ,Bourne shell etc.shell variable shell script , shell commands. Looping and making choices : for loop, while and until , passing argumrnts to scripts. Programming in different shells.

UNIT –V

LINUX file system hierarchy ,editors , common linux command, mounting & Un mounting CD-ROM ,floppy disk ,different access permission , backup & restoring , network congiguration command Ipconfig,hostname ,telnet.

Book:

1. The design of Unix operating system by Maurice Bach
2. Advanced unix by Steaphen prata
3. Linux Bible by Christopher Negus

Compiler design

MCS -403A [T]

UNIT-I

Paper- Automata Introduction to finite automata ,structure representation, automata and complexity, alphabets ,strings ,language informal picture of finite automata ,deterministic finite automata , nondeterministic finite automata ,an application.

UNIT-II

Introduction to compiler ,overview of compilation , process, typical compiler stricter ,implementing a compiler . programming language grammars, elements of a formal language grammar, derivation reduction & syntax trees ambiguity regular grammar & regular expression context free grammar.

UNIT-III

Scanning & parsing technique – the scanner , regular grammar and Fsa ,top down parsing ,parsing algorithm top down parsing without backtracking , predictive parser , bottom up parsing , parsing ,Lr parsers , shift reduce parsing .

UNIT-IV

Symbol table organization , memory allocation – static and dynamic memory allocation, compilation control transfer procedure calls, conditional execution ,iteration control construct.

UNIT-V

Lexical syntax errors, semantic , major Issue in optimization , optimizing , transformation ,local optimization , program flow analysis, global optimization .

Books :

1. Introduction to automata theory
2. Compiler construction principles & practice
3. Principles of compiler design

ASP.NET and C#

MCS-402[T]

UNIT-I

Overview of asp.Net framework , understanding asp.Net control ,application web servers, installation of IIS . web forms , web forms control – server control ,client controls , web forms & html ,Adding controls to a web forms ,buttons ,list box etc. Running a web application,creating a multiform web project.

UNIT-II

Form validation : clients side validation,server side validation, validation controls : required field comparison range .Colander control , ad rotator control ,internet explorer control . state management view state ,session state application state .

UNIT-III

Architecture of ADO.NET ,connected and disconnected database ,create connection using ADO. Net object modal , connection class , command class data adopter class,dataset class.

Display data on data bound controls and data grid . Database accessing on web application : data binding concept with web , creating data grid binding standard web server controls. Display data on web form using data bound controls .

UNIT-IV

Writing dataset to XML,reading dataset with XML. Web services : Introduction , remote method call using XML ,SOAP,Web service description language building & consuming a web service , Web application deployments .

UNIT-V

Overview of C# , C# and .NET, similarities   and differences form JAVA, structure of C# program. Language features :type system, boxing & unboxing ,flow controls ,classes interface ,serialization , delegates ,reflection .

Text & Reference Books :

1. VB.Net Black Book
2. ASP.NET Unleashed
3. C# Programming – Wrox Publication

Artificially Intelligence and expert system

MCS-403B[T]

UNIT –I

General issues and overview of AI ,AI techniques , AL Problems ,AI Techniques , importance and areas of AI ,problem solving state space Search –DLF,BFS problem characteristics. Heuristics search technique : generate and test Hill climbing , best first search ,problem reduction , constraints satisfaction Crypt arithmetic and problems.

UNIT-II

Knowledge representation & mapping , approaches to knowledge representation ,issues in knowledge representation, representing simple facts in logic , representing instance and relationship ,resolution and natural deduction representing kwoledge using rules ,procedural v/s declarative knowledge ,logic programming ,forward v/s background chaining ,matching & control knowledge .

UNIT-III

AI programming language prolog- object , relationship , facts rules and variables , prolog syntax and data structures representing objects & relationship by using tree and list, use of cut , I/O of character and structure . symbolic reasoning under uncertainty : introduction to monotonic reasoning , logics for nonmotonic reasoning , implementation issues , implementation DFS & BFS.

UNIT- IV

Slot and filler structure : semantic nets, frames ,conceptual dependency, scripts,CYC natural languages and NLP , syntactic processing parsing technique , semantic analysis case grammar augmented transition net discourse & pragmatic processing ,translation .

UNIT – V

Definition & characteristics of expert system , representing and using domain knowledge ,expert system shells , knowledge engineering , knowledge acquisition , expert system life cycle & expert system tools , MYCIN & DENDRAL examples of expert system.