HANDONG UNITWIN FELLOWSHIP

SYLLABUS

Lecturer's Information	
Name	Elubu Joseph
University	Kumi University

Course Information			
Course Name	Client-Server Application Programming	Prerequisite Course	Programming Methodology(c)
Course Date	2023-03-06 ~ 2023-06-26	Course Language	English
Keyword	Client, Server, Application, Programming		

Course Description (100 ~200 words)	This course is designed to help Learners develop a basic understanding of how the Client/Server environment works. It creates an environment upon which Learners can develop a basic understanding of how to design a Client Server application. Topics such as client/server, data warehouse, and data distribution that are reshaping the roles of both application development and information management are discussed. In this course the Learner learns how to implement effective information management processes to manage data in client/server, distributed, and data warehouse environments as an enterprise resource. Management, technical, and organizational issues required to implement information resource management (IRM) effectively in the distributed and decentralized computing environment are addressed. Potential pitfalls facing IRM in the client/server environment are identified along with guidance on how to avoid them.
Course Goals and Objectives (Approximately 100 words)	To understand the strategic potential of distributed computing systems for business processes. To provide and understand a framework for classifying distributed computing architectures and distributed applications. To Map out information systems architecture and assess the fit between existing and needed architectures. To Classify and evaluate the numerous flavors of middleware in order to make decisions about middleware acquisition. To Understand the role of the transaction processing, object-oriented, and Internet-based technologies in distributed enterprise computing and make decisions about how and when to apply them. To understand the factors that contributes to the performance of client/server systems and incorporates this understanding in the design of client/server systems. To understand the many issues, tradeoffs, and decision points in developing, integration, and managing distributed applications.
Textbook	**(The format : Title, Author/Editor, Publisher, Year of Publication)** Java Network Programming (4th ed.). Sparks, R. (2015). O'Reilly Media, Inc. Network Programming and Distributed Computing, David R, Michael R (2002), Publisher: Addison Wesley, ISBN: 0-201-71037-4 Java Network Programming 3rd, Beginning Android 4, O ' Reilly, H. (2012) Grant Allen, Apress, 978-1-4302-3984 Object-Oriented Client/Server Internet Environments. Umar, A. Prentice Hall ISBN: 0133755444
References	Cay, s.H., Comell, G. (2002), Core Java 2: volume1- fundamentals printice hall PTR Computer networks (5th ed.).Tanenbaum, A. S., & Wetherall, D. J. (2010). Prentice Hall Java Network Programming and Distributed Computing David.R., Michael R (2002), John, W. Enterprise Systems Integration, John, W. Auerbach ISBN: 0849398371
Course Requirements and Grades	One is required to have had prior knowledge in Program Networking knowledge

Weekly Schedule		
Week	Main Topics	Keywords
1	Course overview(Introduction to client/server Characteristics of the client and server, Merit and demerits of client server, Types of servers, ORB, Client server architecture, the fat servers and fat clients, Remote procedure call (RPC) and Interprocess communication)	Client, Server, Remote procedure call
2	Internet Addressing (Local Area Network Addresses, Internet Protocol Addresses, Beyond IP Addresses: The Domain Name System, Internet Addressing with Java)	Addresses, Internet protocols
3	Data Streams(Overview How Streams Work, Filter Streams, Readers and Writers, Object Persistence and Object Serialization)	Data Streams
4	User Datagram Protocal(Overview, DatagramPacket Class, DatagramSocket Class, Listening for UDP Packets, Sending UDP packets, User Datagram Protocol Example, Building a UDP Client/Server, Additional Information on UDP)	UDP, packets
5	Transmission Control Protocal(ServerSocket Class, Creating a TCP Server,Exception Handling:Socket-Specific Exceptions	ServerSocket, exception Handling
6	Transmission Control Protocal(Creating a TCP Server,Exception Handling:Szocket-Specific Exceptions	TCP
7	Multi-threaded Applications (Overview, Multi-threading in Java, Synchronization, Interthread Communication, Thread Groups and Thread Priorities)	Theads, Multi-threading
8	Implementing Application Protocals(Application Protocol Specifications, Application Protocol Implementation, HyperText Transfer Protocol, HTTP and Java, Common Gateway Interface (CGI)	Application, Implementation
9	Java Servelets(How Servlets Work, Using Servlets, Writing a Simple Servlet, Running Servlets, Single Thread Model, Servlet Request and http Servlet Request, Servlet Response and http Response)	Servlets
10	Remote Method Invocation(Overview, How Remote Method Invocation Work, Defining an RMI Service Interface, Implementing an RMI Service Interface, Creating Stub and Skeleton Classes)	Remote Method Invocation
11	Remote Method Invocation(Creating an RMI Server, Creating an RMI Client, Running the RMI System, Remote Method Invocation Packages and Classes, Remote Method Invocation Deployment Issues, Using Remote Method, Invocation to Implement Callbacks, Remote Object Activation)	RMI Clients
12	Remote Method Invocation(Remote Method Invocation Deployment Issues, Using Remote Method, Invocation to Implement Callbacks, Remote Object Activation)	RMI server
13	Java IDL and CORBA(Overview, Architectural View of CORBA, Interface Definition Language (IDL) From IDL to Java)	Java IDL and CORBA
14		
15		
16		