A.V.C COLLEGE OF ENGINEERING, MANNAMPANDAL, MAYILADUTHURAI

Department of Electronics and Communication Engineering
"LEMON NEWSLETTER"

Message from Head of the Department

I express my wishes to the students who have participated in the webinars and workshops.

I look forward from the faculties our department to engage themselves in publishing papers in scopus indexed and SCI journals.

I expect from students to do confident learning and score high marks in the forthcoming exams.

Dr.S.SIVANESSKUMAR

HOD/ECE

Thought of the Day

"Watch your thoughts; they become words.

Watch your words; they become actions.

Watch your actions; they become habits.

Watch your habits; they become character.

Watch your character; it becomes your destiny."

Faculty Corner:

Embedded Web Technology (EWT)

- *Mrs.K.R.Vinothini,AP/ECE*

Embedded Web Technology (EWT)is regarded as the 'marriage' of Web technologies with embedded systems. In other words, the software developed for embedded systems is applied by making use of the Internet.

Embedded technology has been around for a long time and its use has gradually expanded into the PC market. Speed, accuracy, reliability were the reasons why embedded technology entered computers. With an great market size of billions in the next coming years, the future is embedded. Embedded systems contain processors, software, input sensors and output actuators, which work as the controls of a device and are subject to constraints. These Embedded systems may not have disk drives, keyboards, display devices and are typically restricted in terms of power, memory, GUIs and debugging interfaces.The central building blocks are microcontrollers, i.e. microprocessors integrated with memory units and specific peripherals for the observation and control of these embedded systems.On the other hand, Web technologies employ client-server models.

Introduction of Embedded Web Technology

The embedded Web system works on the same principle as that traditional Web request-response systems. Web pages from the embedded system (server) are transmitted to the Web browser (client) , which implements the user interface (Presentation layer). In other cases , the the embedded system dynamically generates the pages to convey the current state of the device to the user at the centralized location. These end users can also use the Web browser to send the information to the embedded system for the configuration and control ofd the device.

Web-enabled devices use the HTTP (Hyper Text Transfer Protocol) standard protocol to transmit Web pages from the embedded system to the Web browser , and to transmit HTML (Hyper Text Markup Languages) form the data from the browser back to the device. The devices require a network interface such as Ethernet ,TCP/IP software , embedded Web server software , and the Web pages (both static and generated) that make up the device-specific   GUI.

The HTTP protocol engine takes the request from the Web browser and sends it on the TCP/IP. The HTTP protocol Engine parses the request and sends it to the embedded application for processing. After producing the results , the embedded application generates the HTML code and feeds it to the HTTP Engine , which sends it back to the client using TCP/IP.
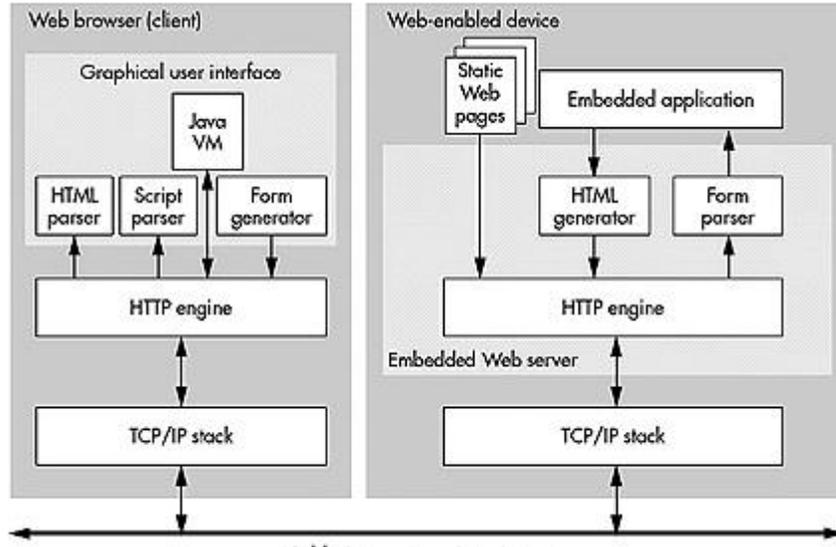
Figure 1: Web-enabled devices use the HTTP standard protocol to transmit Web pages from the embedded system to the Web browser, and to transmit HTML form data from the browser back to the device .

Embedded Web Technology is an enabling, or platform, technology. This means that it is relevant to a wide variety of applications, many of which have not yet been identified. We at NASA have promoted EWT through workshops, participation in shows, and one-to-one consultations with our partners.

Embedded Software :

➢ The Internet is the dominant method of information access. People are using universal clients such as Web browsers and email readers to connect to any system, from anywhere, and at any time. With the use of embedded Internet technology, innovative companies are building products that let people use these same universal clients to manage embedded devices. Using Web or email technologies in a networked device delivers user control with any Web browser or email client. This approach eliminates the need to build custom management applications and provides access to the device using the Internet tools that everyone is familiar with. Embedded software space is vast and wide open. Newer embedded systems can require different software based applications.

These software based applications are :

➢ Database applications,
➢ Internet applications,
➢ Mobile office productivity tools,
➢ And personal applications.

Student Corner:

Network Marketing

- Kamala.P, III ECE

Network marketing, also known as **Multi level marketing**, **Pyramid marketing** & **direct selling**, is the marketing style & technique, adopted by many companies in India as well as worldwide. In this concept, companies emphasise not only on sales generation, but also on workforce maximization. Companies adopt a workforce pyramid of different levels.

In multi level marketing, companies sell their products directly through the distributers. They take the distributers from the society. Here, each member of the pyramid is supposed to generate sales & also attach more members or distributers with the company. All these members further generate sales & join more people as distributers. Thus, the sales as well as the workforce increase. These distributers are paid the commission on the base of sales they generate & also by the sale generated by the next level of the distributers, they attach to the company. Thus, we see that it acts like a chain reaction. Here each member brings sales & work force. Each member uses the product and makes other using it. Thus he earns & also earns for the company.

Need of Network Marketing:-

In the traditional marketing model, a product goes through many processes before in reach to the customer like **Importer** (in case of imported products), **Whole Selling**, **Retailing**, **Distributing**, **Advertisemen**t etc. All this made a delay in delivery of the product, as well as these all increase the cost to the customer. Also all this made a product less profitable to the company. In Network Marketing, the companies just eliminate all these middle processes & hand out the product directly to the customers. It cost less to the company. Same way, it cost less to the customer also. **Secondly**, it creates lot of Employment Opportunities. **Third,** if customer finds the products good & the company also, he may be the part of this. He may also earn money by just using the products only.

Different Models:-

Network marketing has five different models. We can explain it as further:-

Unilevel Model:-

This model is often considered the simplest of compensation plans. As the name suggests, the plan allows a person to sponsor one line of distributors, called a "frontline." Every distributor the person sponsors is considered to be on that sponsor's frontline and there are no widths limitations, meaning there is no limit to the amount of people one can sponsor in the frontline. The common goal of this plan is to recruit a large number of frontline distributors and then encourage them to do the same. This is due to the fact that commissions are normally paid out on a limited depth, which typically means sponsor can earn commissions on sales between 5 and 7 levels deep.

Stair step Model:-

This model is characterized as having representatives who are responsible for both personal and group sales volumes. Volume is created by recruiting and by retailing product. Various discounts or rebates may be paid to group leaders and a group leader can be any representative with one or more down line recruits. Once predefined personal and/or group volumes are achieved, a representative moves up a commission level. This continues until the representative's sales volume reaches the top commission level and "breaks away" from their

up line. From that point on, the new group is no longer considered part of his up line's group and the multi-level compensation aspect ceases. The original up line usually continues to be compensated through override commissions and other incentives.

Matrix Model:-

This model is similar to a Uni-Level plan, except there are also a limited number of representatives who can be placed on the first level. Recruits beyond the maximum number of first level positions allowed are automatically placed in other down line (lower level) positions. Matrix plans often have a maximum width and depth. When all positions in a representative's down line matrix are filled (maximum width and depth is reached for all participants in a matrix), a new matrix may be started. Like Uni-Level plans, representatives in a matrix earn unlimited commissions on limited levels of volume with minimal sales quotas.

Binary Model:-
A binary plan is a multilevel marketing compensation plan which allows distributors to have only two front-line distributors. If a distributor sponsors more than two distributors, the excess are placed at levels below the sponsoring distributors front-line. This "spill over" is one of the most attractive features to new distributors since they need only sponsor two distributors to participate in the compensation plan. The primary limitation is that distributors must "balance" their two down line legs to receive commissions. Balancing legs typically requires that the number of sales from one down line leg constitute no more than a specified percentage of the distributor's total sales.

Hybrid:-

Are compensation plans that are constructed using elements of more than one type of compensation Model.

Advantages of Network Marketing Model:-

* Network marketing model comes with a large workforce. Also, the workforce grows very fast. Thus, it helps company to establish soon.
* In Network Marketing system, a company need to pay a nominal advertisement cost. Most of the promotion is done by the workforce only.
* Company always stay connected with its customers as well as distributers. It provides a 3D picture of the market as well as the distribution system of the company. Thus, any internal problem in the sale or the organizational structure can be solved very quickly.
* Network Marketing develops its market by the social network of the Distributers. Thus it penetrates very quickly in the market.
* Network marketing gives employment to many people. It helps people to earn money. One can join it as a part time job also.

Required Steps:-

- Companies should recruit only the able distributers. A person, who is not smart enough to convince a person, is not a right person for the network marketing. Evaluated & educated people can do a lot in multi level marketing.
- The companies need to make the customer aware of the products. The product, which has never been heard about, will not be accepted by the customer.
- Workforce needs a lot of motivation from the company side. Training is also required to make enough sales & to join more distributers.

6.Questions on Antenna Basics

- Sundar. K, III ECE

1. The basic requirements of transmitting antennas are:
   a) High efficiency
   b) Low side lobes
   c) Large signal to noise ratio
   d) Lone of the mentioned
2. _____ is a device that converts electrons to photons or vice-versa.
   a) Antenna
   b) Electron gun
   c) Photon amplifier
   d) Microwave tube

3. The basic equation of radiation that is applied to any antenna irrespective of the type of the antenna is:
   a) iL= Qv
   b) iQ = Lv
   c) i/L=Q/v
   d) None of the mentioned
4. When the separation between two lines that carry the TEM wave approaches λ the wave tends to be radiated.
   a) True
   b) False
5. The number of patterns radiation pattern required to specify the characteristic are :
   a) Three
   b) Four
   c) Two
   d) Five
6. The beam width of the antenna pattern measured at half power points is called:
   a) Half power beam width
   b) Full null beam width
   c) Beam width
   d) None of the mentioned
7. An antenna has a field pattern of E (θ) = cos2 θ, θ varies between 0 and 900. Half power beam width of the antenna is:
   a) 33^0
   b) 66^0
   c) 1200^0
   d) None of the mentioned

8. An antenna has a field pattern E (θ) =cos θ. cos 2θ. The first null beam width of the antenna is:
   a) 45^0
   b) 90^0
   c) 180^0
   d) 120^0
9. The solid area through which all the power radiated by the antenna is:
   a) Beam area
   b) Effective area
   c) Aperture area
   d) Beam efficiency
10. Power radiated from an antenna per unit solid angle is called radiation intensity.
    a) True
    b) False

Answers:

1. a) High efficiency
2. a) Antenna
3. a) iL= Qv
4. a) True
5. a) Three
6. a) Half power beam width
7. b) 66^0
8. b) 90^0
9. a) Beam area
10. a) True

PUZZLES

- U.Nandhakumar,IV ECE

1. This one could be a good logic puzzle for kids because it also involves some math. Four playing cards, one of each suit, lie face down on a table. They are a three, a four, a five, and a six.

- The cards on either side of the four are black.
- The club is to the right of the three but not next to it.
- The spade is to the left of the heart.
- The middle two cards add up to an even number. Neither of them is a club.

Can you determine the cards' suits and their order?

Answer: From left to right: Three of diamonds, six of spades, four of hearts, five of clubs.

2. Five friends (Allegra, Ben, Clara, Flora, and Zach) are each allergic to something different: pollen, shellfish, bee stings, cats, or nuts.

- Allegra has a food allergy
- Ben can play with his kitten for hours without issue (or medicine).
- Clara's allergy is not related to animals.
- Flora has seasonal allergies.

Can you figure out who is allergic to what?

Answer: Allegra is allergic to shellfish, Ben to bee stings, Clara to nuts, Flora to pollen, and Zach to cats.

3. A joint Father's Day and graduation party is being thrown for Michael, Ken, James, Alberto, Elias, and Stephanie. Three of them are newly minted high school graduates. The other three are their dads.

- Stephanie went to the senior prom with Michael's son.
- Elias and James played on the school's baseball team. One of them is Alberto's son.
- Michael and Elias are not related.

Can you match the high school graduates to their fathers at this joint celebration?

Answer: Alberto is Elias' dad, Ken is Stephanie's dad, and Michael is James' dad.

4. Here's a great logic puzzle for kids: Six neighborhood children (Leisha, Benito, Delia, Charlotte, Weldon, and Zina) were measured yesterday.

- Weldon is taller than Delia but shorter than Zina.
- Leisha is taller than Benito but shorter than Delia and Weldon.
- Benito is not the shortest.

Can you put them in order of height from tallest to shortest?

Answer: Zina, Weldon, Delia, Leisha, Benito, Charlotte. If you really want to bust your brain, try to solve these tricky lateral thinking puzzles.

Editors Desk

Reasons to Get Up Early — Because Early Rising Isn't Just for Birds

- ❖ More time for yourself
- ❖ More time to exercise
- ❖ Less time in traffic
- ❖ More time to get things done
- ❖ Better sleep
- ❖ Healthier skin
- ❖ Fewer dark circles
- ❖ More time for breakfast
- ❖ Helps you concentrate

Send your suggestions to:

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Vision of the Institute

To blossom into a cynosure of technological innovations

Mission of the Institute

To participate in the noble cause of nation building by offering professional education, research and training in engineering and technology especially to the rural based poor Students

Department Vision

To create globally competent engineers in Electronics and Communication Engineering to meet the industrial progress for betterment of the society

Department Mission

1. To create an academic ambience for quality education in the field of Electronics and Communication Engineering

2. To make the best use of modern tools and software for teaching and research activities

3. To promote industry-institution interaction for skill-based learning of students from rural society

4. To inculcate moral and ethical values with a sense of professionalism.

PROGRAMME EDUCATIONAL OBJECTIVES:

PEO1: To enable graduates to pursue research, or have a successful career in academia or industries associated with Electronics and Communication Engineering, or as entrepreneurs.

PEO2: To provide students with strong foundational concepts and also advanced techniques and tools in order to enable them to build solutions or systems of varying complexity.

PEO3: To prepare students to critically analyze existing literature in an area of specialization and ethically develop innovative and research oriented methodologies to solve the problems identified.

PROGRAMME OUTCOMES:

Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

1. To analyze, design and develop solutions by applying foundational concepts of electronics and communication engineering.

2. To apply design principles and best practices for developing quality products for scientific and business applications.

3. To adapt to emerging information and communication technologies (ICT) to innovate ideas and solutions to existing/novel problems.