

MULTIMEDIA

WEEK 12

MULTIMEDIA

Objectives

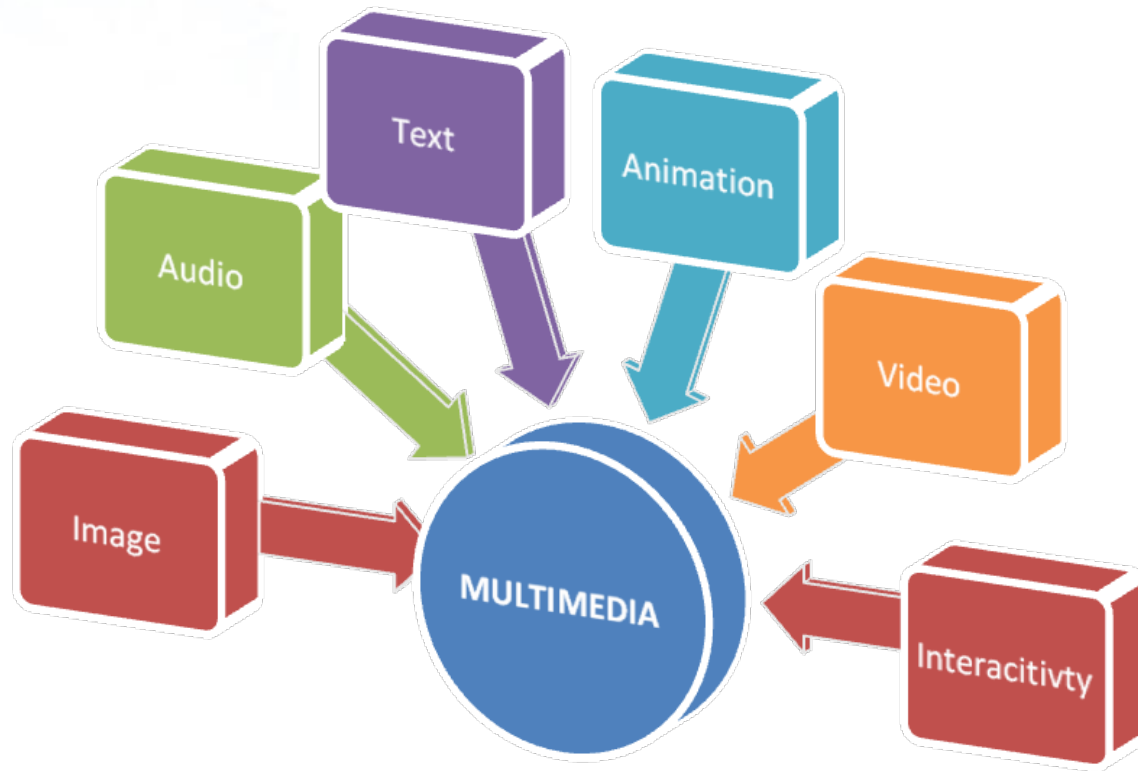


- At the end of this chapter, you will learn:
 - Definition of multimedia
 - Compression formats and standards for data, images, audio and video
 - Multimedia authoring tools including image and video editors
 - Basic web page design
 - Web 2.0 tools

MULTIMEDIA

Definition of Multimedia

Multimedia is the combination of image, audio, text, animation, video and interactivity.



Multimedia

MULTIMEDIA FORMATS AND STANDARDS

File Formats and File Types

- Each part of Multimedia has its own ***file types*** and ***formats!***
- In this chapter we will deal with following file formats:
 - Text Formats
 - Image Formats
 - Audio Formats
 - Video Formats

MULTIMEDIA FORMATS AND STANDARDS

Text Formats

- **TXT File:**

- Plain text document
- Can be created by Notepad application.

- **HTML (*Hyper Text Markup Language*) File:**

- Used for creating World Wide Web pages.
- Codes are interpreted by the web browser in a particular way.

- **PDF (Portable Document Format:**

- An electronic image file that you can **view, navigate, print, or forward to someone else.**
- Can be created by Adobe Acrobat Writer, Acrobat Capture, or similar products.

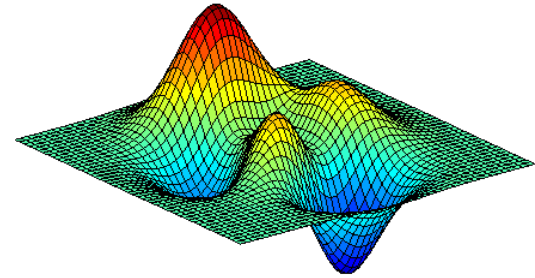
- **DOC files:**

- One of the most commonly used word processor format.
- Extension of MS Word 2003 is .doc, MS Word 2007 and later is .docx, and OpenOffice Writer is .odt.

MULTIMEDIA FORMATS AND STANDARDS

Image Formats

- **GIF (Graphics Interchange Format) Format:** Ideal for simple animated graphics with minimal shading or color variation.
- **JPG (Joint Photographic Experts Group) Format:** For storing/compressing high-quality color and grayscale photographs in bitmap form.
- **PNG (Portable Network Graphics) Format:** A raster graphics file format that supports lossless data compression, you can use it to create images with transparent background.
- **TIFF (Tagged Image File Format) Format:** For storing raster graphics images, popular among graphic artists, the publishing industry, and photographers.
- **SVG (Scalable Vector Graphics):** XML based two-dimensional graphic file format with support for interactivity and animation



GIF Image



JPG Image

MULTIMEDIA FORMATS AND STANDARDS

Audio Formats

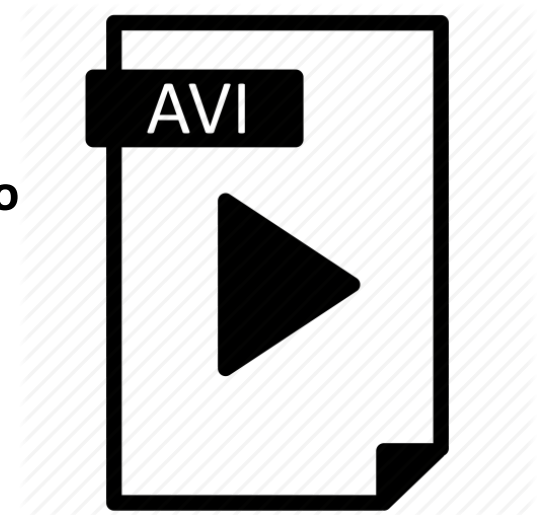
- **MP3:** Stands for ***Moving Picture Experts Group Audio Layer 3***
 - Lossy audio compression format
 - One of the most popular audio formats on the internet.
- **WAV:** Stands for ***Waveform Audio***
 - Created by **Microsoft and IBM**
 - One of the first audio file types developed for the PC.
 - **Lossless** (Professionally recorded CDs are also a lossless audio source.)



MULTIMEDIA FORMATS AND STANDARDS

Video Formats

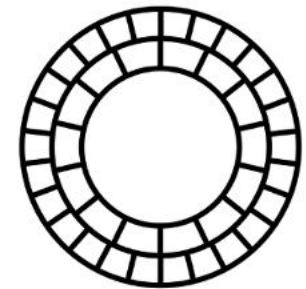
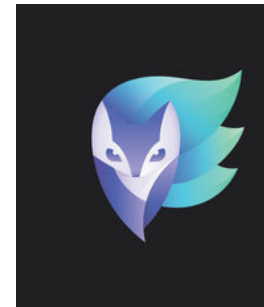
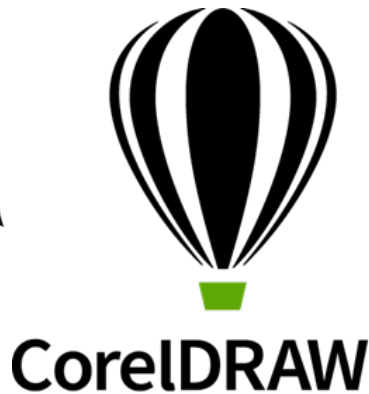
- **MPEG:** Stands for **Moving Picture Experts** (pronounced as m-peg)
 - Type of audio/video (multimedia) file format, which is popular on the Internet.
- **AVI:** Stands for **Audio Video Interleave**
 - Most common file format for storing **audio/video data** on the PC.
 - Developed by Microsoft



MULTIMEDIA AUTHORIZING TOOLS

Image Editors

- Image Editors are software programs that have been designed specifically for **capturing, creating, editing, and manipulating images**.
- Examples; Adobe Photoshop, GIMP, Sketch, and CorelDraw.
- There are also mobile apps that you can use to edit your images on the go. Such as Snapseed, VSCO, and Enlight



VSCO

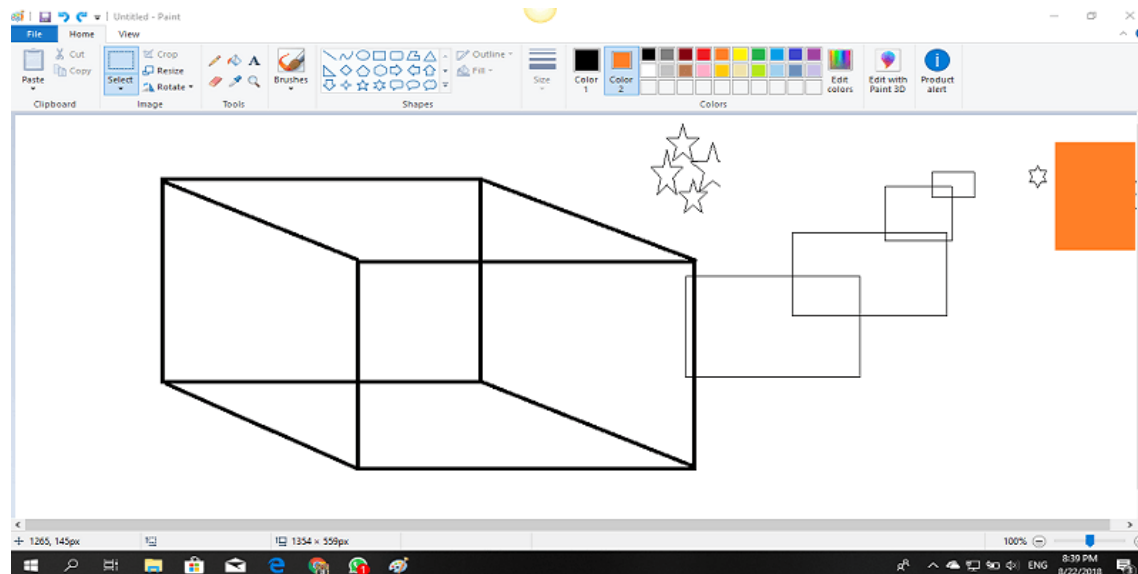


snapseed

MULTIMEDIA AUTHORIZING TOOLS

Image Editors – MS Paint

- **Paint** (formerly Paintbrush for Windows) is a simple graphics painting program that has been included with almost all versions of Microsoft Windows since its first release.
- It is often referred to as MS Paint or Microsoft Paint.
- Files prepared via Microsoft Paint take the extension of '.bmp'.

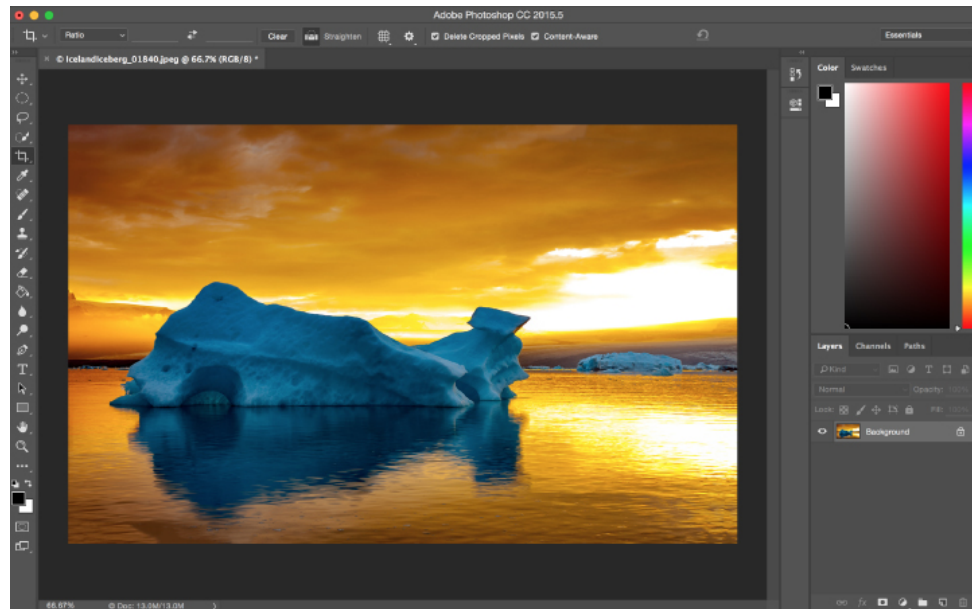


MS Paint

MULTIMEDIA AUTHORIZING TOOLS

Image Editors – Photoshop

- **Adobe Photoshop**, or simply **Photoshop**, is a **graphics editor** developed by Adobe Systems.
- Although Photoshop is originally designed to edit images for paper-based printing, it can also be used for a wide range of other professional and amateur purposes.

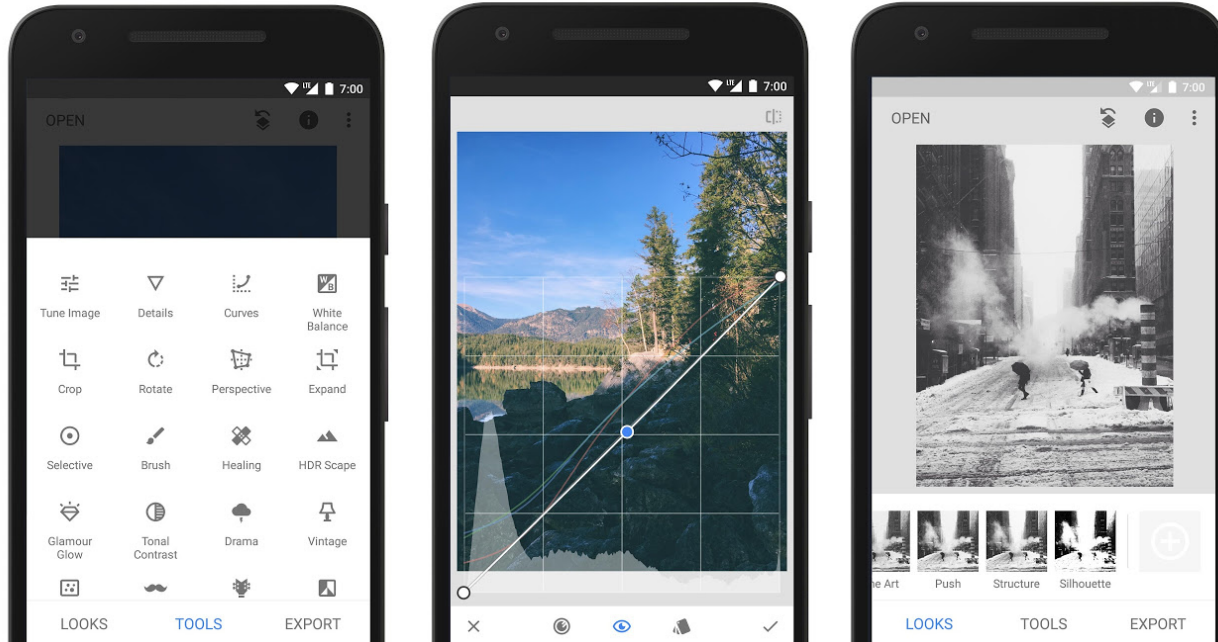


Adobe Photoshop

MULTIMEDIA AUTHORIZING TOOLS

Image Editors – Snapseed

- Snapseed is a complete and professional photo editor developed by Google.
- Provides various tools and filters, including: Healing, Brush, Structure, HDR, Perspective and so on.
- Opens JPG and RAW files
- Save your personal looks and apply them to new photos later

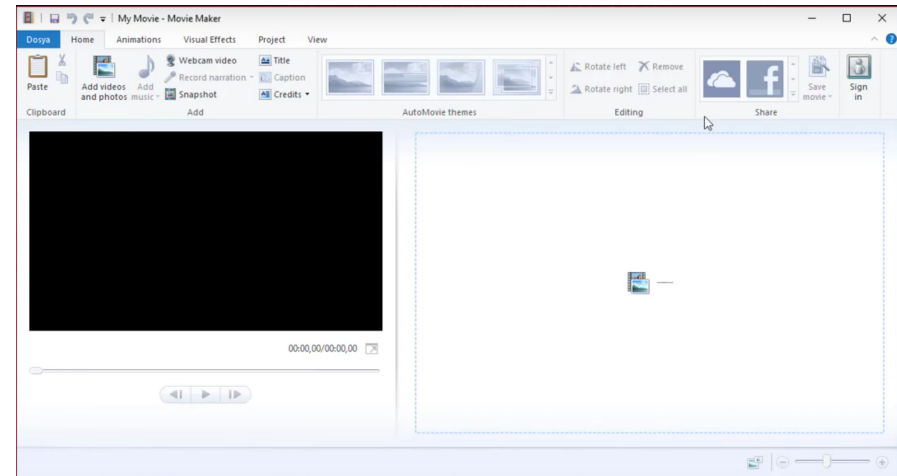


Snapseed by Google

MULTIMEDIA AUTHORIZING TOOLS

Video Editors – Windows Movie Maker

- Windows Movie Maker is video editing software that you can use to in Windows.
- For Windows you can install Windows Live Movie Maker.
- Movie Maker provides the ability to easily **capture, edit, organize, and share** home movies.
- To run **Windows Movie Maker**:
 - Click **Start Button**
 - **All Programs**
 - **Windows Movie Maker**

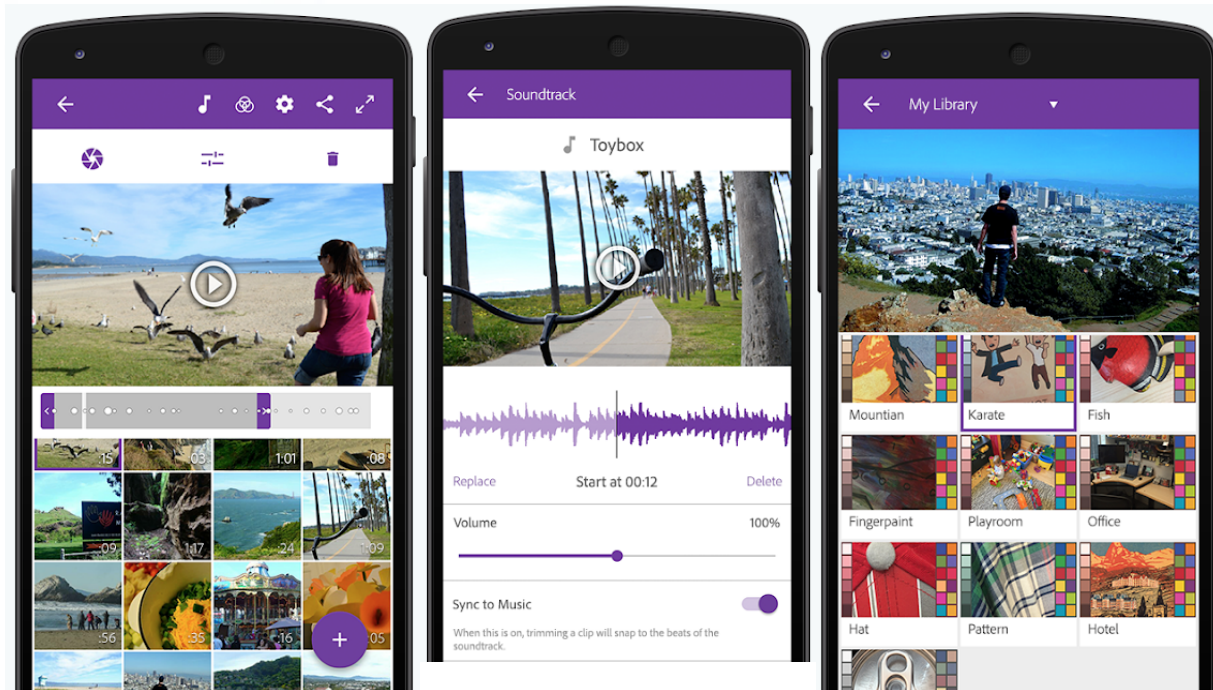


Windows Movie Maker

MULTIMEDIA AUTHORIZING TOOLS

Video Editors – Adobe Premiere

- Adobe Premiere Clip is a free mobile video editor that you can use to create and edit videos on your mobile phones.
- You can also add sound to the videos.
- Easily share the videos on social media.

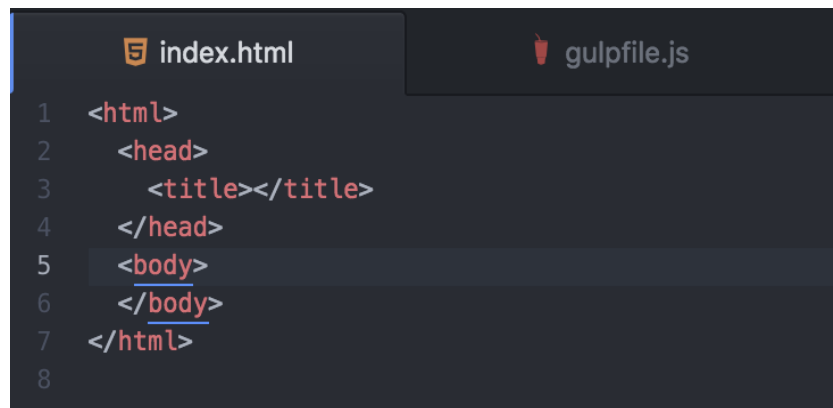


Adobe Premiere

WEB PAGE CREATION STRATEGIES

What is HTML ?

- **HTML** stands for **hypertext markup language** which is used for creating World Wide Web (WWW) pages.
- Files created in HTML format are identified by the filename extensions **.htm** or **.html**. These extensions allow web browsers to identify the file as a readable file, open it and display it.

A screenshot of a code editor with a dark theme. The editor has two tabs at the top: 'index.html' (active) and 'gulpfile.js'. The 'index.html' tab shows a basic HTML structure with line numbers 1 through 8 on the left. The code is as follows:

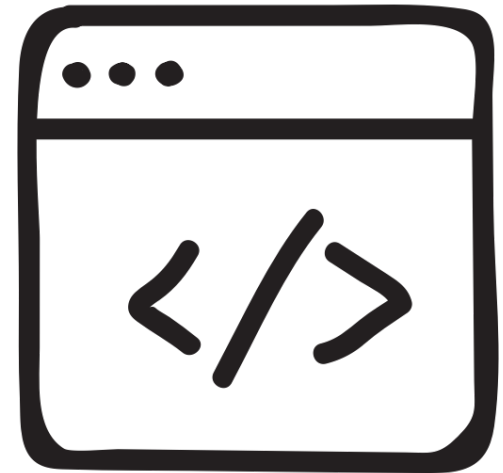
```
1 <html>
2   <head>
3     <title></title>
4   </head>
5   <body>
6     </body>
7 </html>
8
```

HTML Code

WEB PAGE CREATION STRATEGIES

Create a Basic Web Page

- **There are three basic ways to create Web pages**, all of which encode the file using HTML and display the file in a Web Browser window.
 - ***Text Editors***
 - ***HTML Editors***
 - ***WYSIWYG Editors***



WEB PAGE CREATION STRATEGIES

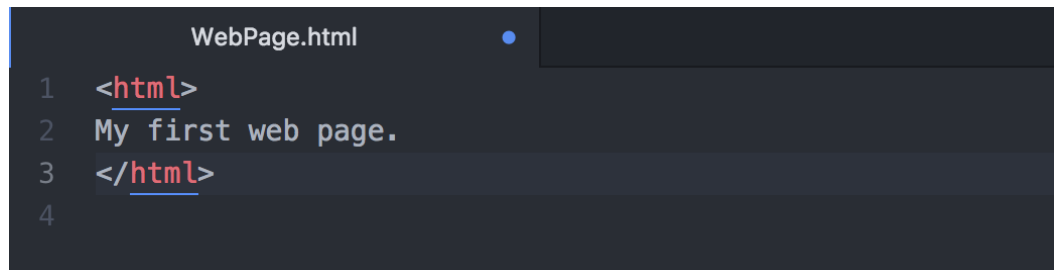
Create a Web Page - Text Editors

- HTML code can be written and edited by using any text editor.
- **Notepad** and **Notepad++** can be used to write HTML code.
- You need to have the knowledge of HTML tags and their usage to prepare a web page by using a text editor.
 - HTML tags are typed in between <> symbols.
 - Usually the tags start as *<name of the tag>* and end with *</name of the tag>*.
 - Any text written in between two such tags will be formatted according to the tag.

WEB PAGE CREATION STRATEGIES

Create a Web Page - Text Editors

1. Now create a new text document on the desktop and open it.
2. Type: `<html>` (This tag will indicate the beginning of the html web page.)
3. Press enter and type: `</html>` (This tag will indicate the end of the html web page.)
4. Between the two html tags you can use additional tags and text to create the style and the content of your webpage.
5. Type “My first web page.” in between the html tags.
6. Rename the document as “WebPage.html”. Your document should look like in the following image. To see the result, open the file with a web browser.

A screenshot of a text editor window titled 'WebPage.html'. The editor shows four lines of code: line 1 is '<html>', line 2 is 'My first web page.', line 3 is '</html>', and line 4 is empty. The code is syntax-highlighted with red for the opening and closing tags and blue for the text content.

```
WebPage.html
1  <html>
2  My first web page.
3  </html>
4
```

Creating a web page

WEB PAGE CREATION STRATEGIES

Create a Web Page – More Tags

- <title> and </title> indicate the beginning and end of the title of webpage.
- <body> and </body> indicate the beginning and end of the main body of webpage.
- and make **bold** the text between them.
- <p> and </p> format as a **paragraph** the text between them.
- <hr> puts a horizontal line. Horizontal line is also called Horizontal Rule in HTML.
- <a href=<http://www.metu.edu.tr>>METU creates a link. The text seen in the screen is **METU**, and it redirects to *http://www.metu.edu.tr*.

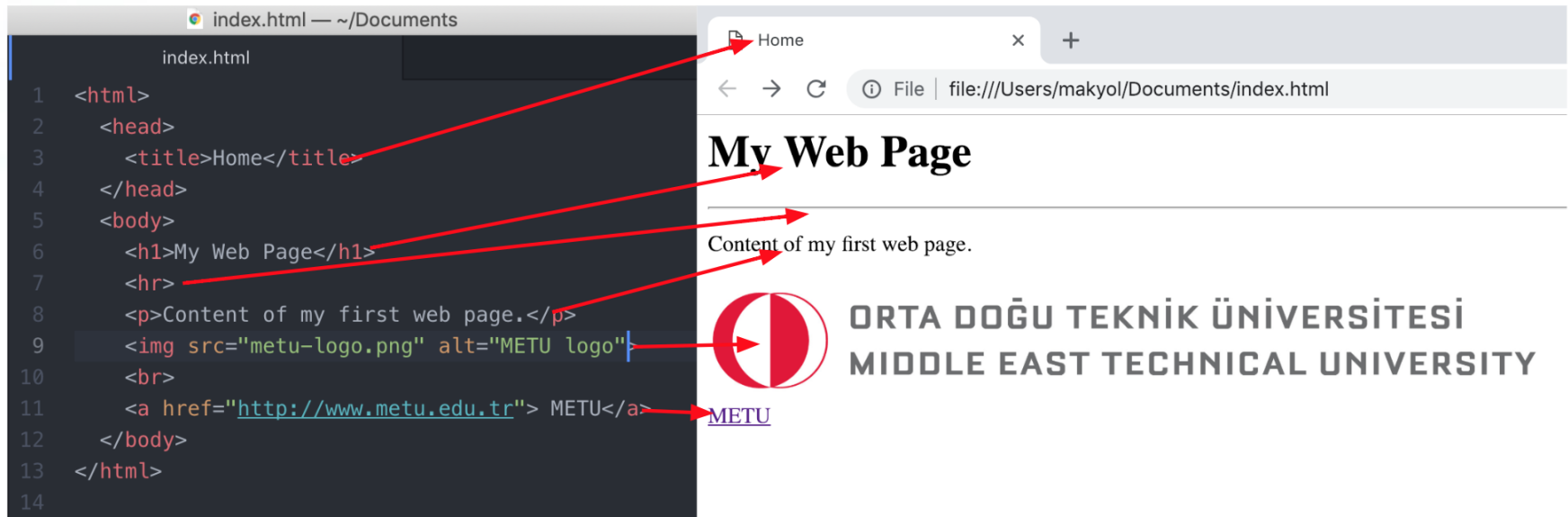
To see some examples on how these tags work please check :

http://www.w3schools.com/html/html_examples.asp

WEB PAGE CREATION STRATEGIES

Create a Web Page – More Tags

1. Make the following adjustments in the web page you created. Notice that you can put as many empty spaces, tabs or empty paragraphs as you wish. Your browser will just ignore those while displaying the web page.
2. After saving the file, open it with a web browser to see the effects of the adjustments.

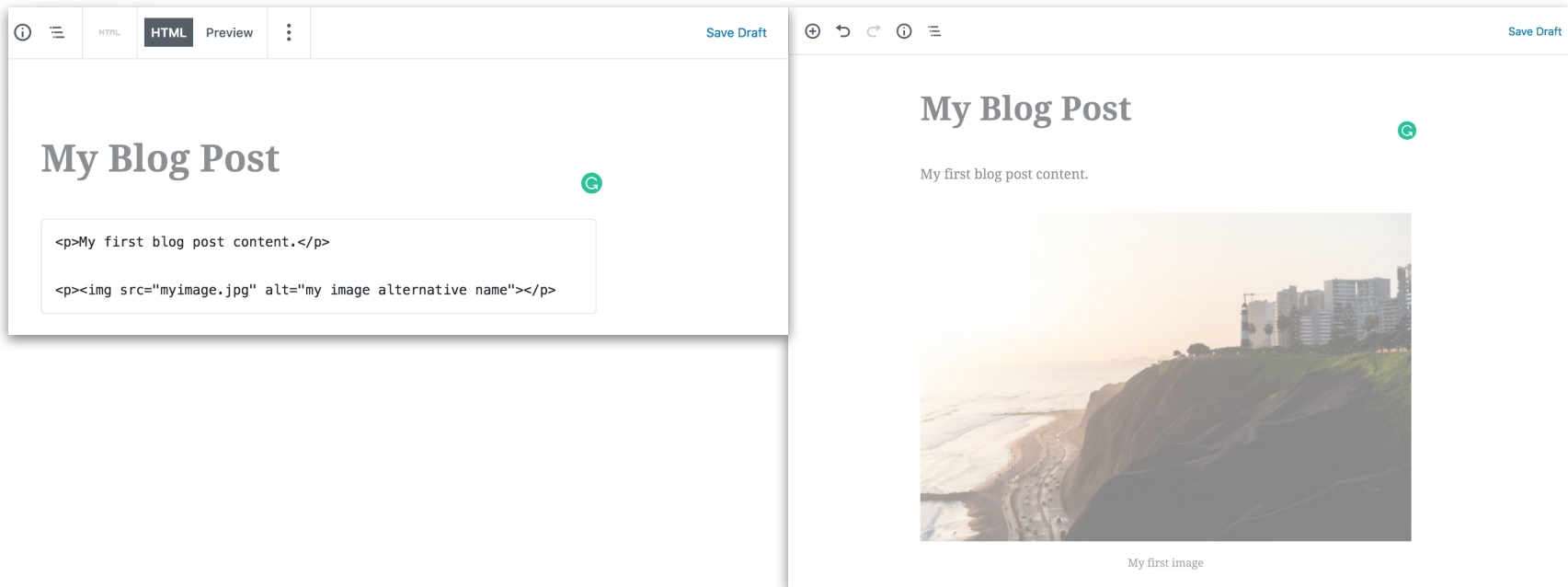


Very simple HTML web page

WEB PAGE CREATION STRATEGIES

Create a Web Page – WYSIWYG Editors

- WYSIWYG stands for "***What You See Is What You Get***".
- They allow you to create the Web Page on screen in a visual way while the Editor writes the HTML code for you in the background.
- **Wordpress** has a built-in WYSIWYG editor. In the figures below, you can see the both visual and WYSIWYG editors.



WEB PAGE CREATION STRATEGIES

Basic Web Page Design

- There are two primary factors to consider in World Wide Web (WWW) page design:
 - how the page will **look**
 - how the user will **interact** with it
- Every Web page needs some basic elements:
 - a background,
 - a name or a welcome **title**,
 - a **navigation system**: simple text **links**, menu **buttons**, or a more elaborate splash page or **interface**.

WEB PAGE CREATION STRATEGIES

Web Page Design

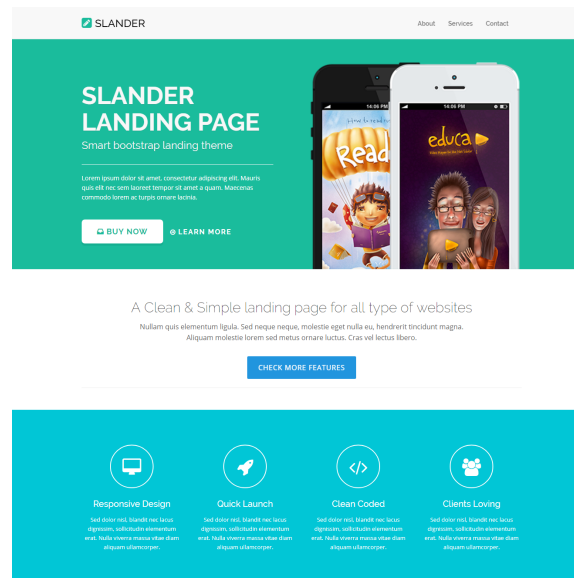
- ***Web Programming***

- Web programming allows you to turn a simple, static HTML page into a dynamic one.
- It allows others to interact with your web site and use the application on any computer with Internet access. (like a forum, a guestbook, or a form submission)
- PHP, ASP.NET, Perl, Python, JavaScript, Ruby on Rails, ASP, CGI, JSP are some examples of web programming languages.

WEB PAGE CREATION STRATEGIES

Web Page Editing

- Using a web page template is an easy way to build a good looking personal website. These templates are available on the web.
- You can download a template and edit with a tool like Notepad++.
- Be mindful of the copyright claims on the templates.



An example of a Web page template



WEB 2.0

Definition

- Web 2.0 is the term given to describe a second generation of web development and design.
 - It refers to the transition from static HTML Web pages to more dynamic ones.
 - Emphasizes user-generated content, usability, participatory culture and interoperability for end users.
-
- | | |
|---|---|
| <ul style="list-style-type: none">• Facilitates<ul style="list-style-type: none">• communication• secure information sharing• interoperability• collaboration on the World Wide Web. | <ul style="list-style-type: none">• Provides<ul style="list-style-type: none">• Active participation• Sharing audio and video• Interaction• Creation |
|---|---|

WEB 2.0

Web 2.0 Tools: RSS

- **RSS:** Really Simple Syndication
 - A family of Web feed formats used to publish frequently updated works such as blog entries, news headlines, audio, and video
 - RSS Feeds provide an updated list of content from a site
 - BBC news (<http://feeds.bbc.co.uk/news/rss.xml>)
 - CNN news (<http://rss.cnn.com/rss/edition.rss>)
 - Aggregator (software that reads RSS) can subscribe to a feed, check for new content at user-determined intervals, and retrieve the content.



WEB 2.0

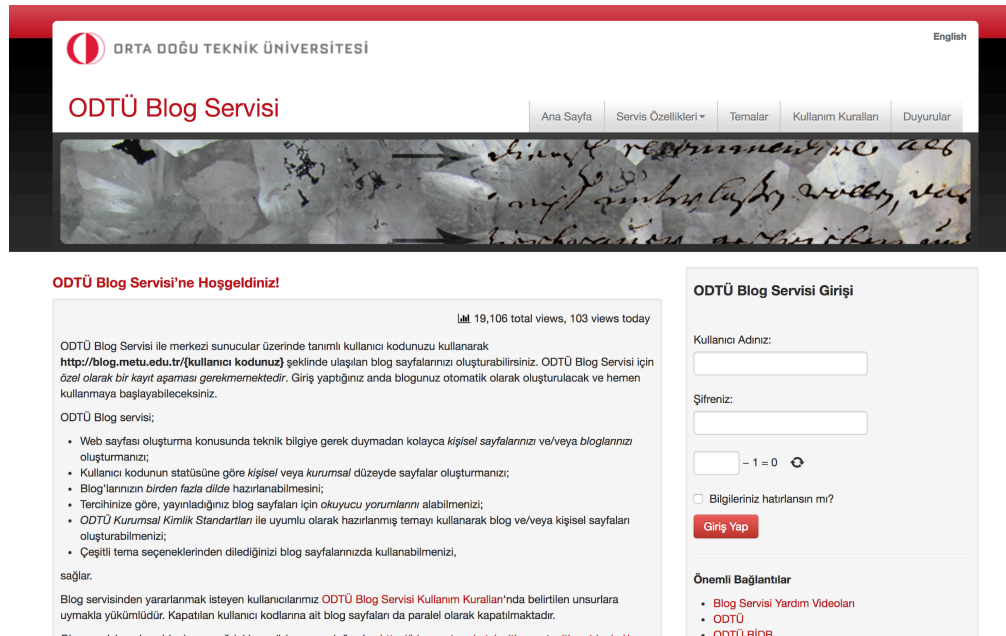
Web 2.0 Tools: Blogs

- **Blog** stands for **weblog**.
- A weblog is a journal (or newsletter) that is frequently **updated and intended for general public consumption**.
- Blogs generally represent the personality of the author or the Web site.
- No technical skills are needed to create your own blog
- Blogs can contain various kinds of media (texts, images, etc.)
- Some examples for blog sites:
 - <http://boingboing.net/>
 - <http://www.engadget.com/>
 - <http://techcrunch.com/>

WEB 2.0

Web 2.0 Tools: Blogs

- There are also services you can use to create your own blogs.
 - <http://www.tumblr.com/>
 - <http://wordpress.com/>
- You can also use the METU Blog Service to create your own blog. <https://blog.metu.edu.tr/>



The screenshot displays the ODTÜ Blog Service interface. At the top, the header includes the ODTÜ logo and the text "ORTA DOĞU TEKNİK ÜNİVERSİTESİ". Below this, the "ODTÜ Blog Servisi" title is prominently displayed. A navigation bar contains links for "Ana Sayfa", "Servis Özellikleri", "Temalar", "Kullanım Kuralları", and "Duyurular". The main content area features a large, artistic image of a globe with handwritten text. Below the image, the text "ODTÜ Blog Servisi'ne Hoşgeldiniz!" is visible. To the right, there is a "ODTÜ Blog Servisi Girişi" (Login) section with fields for "Kullanıcı Adınız:" and "Şifreniz:", a "Giriş Yap" button, and a checkbox for "Bilgileriniz hatırlansın mı?". Below the login section, there is a list of "Önemli Bağlantılar" (Important Links) including "Blog Servisi Yardım Videoları", "ODTÜ", and "ODTÜ BİOB".

METU Blog Service

WEB 2.0

Web 2.0 Tools: Social Networking

- **Social networking:** building online communities of people who share interests and/or activities, or who are interested in exploring the interests and activities of others.
- Some of the examples are Instagram, Facebook, Youtube, Twitter, Pinterest, Tumblr, and Snapchat



Social networking sites

WEB 2.0

Web 2.0 Tools: Social Bookmarking

- **Tagging**, which is one of the defining characteristics of WEB 2.0 services, allows users to collectively classify and find information.
- **Social bookmarking**, is a method for Internet users to store, organize, search, and manage bookmarks of web pages on the Internet.
- Typically in the form of tags that collectively and/or collaboratively become a folksonomy (social tagging).
- Some of the examples are Pinterest, Reddit, Diigo, Mix.com

WEB 2.0

Web 2.0 Tools: Videos - YouTube

- YouTube **allows people to easily upload and share video clips** on www.YouTube.com on the Internet and can be accessed through websites, mobile devices, blogs, and emails.
- Other free video sharing sites include
 - DailyMotion (<https://www.dailymotion.com/>)
 - Vimeo (<https://vimeo.com/>)



WEB 2.0

Web 2.0 Tools: Learning wiki

- A wiki is a collection of Web pages designed to enable anyone to contribute or modify the content.
- Wikis are often used to create collaborative websites and to power community websites.
- The collaborative encyclopedia, Wikipedia is one of the best-known wikis.
- Examples with more specific focus include Encyclopedia of Mathematics, Wikibooks, and Wikitravel.
- If you want to build your own wikis, followings are the tools you can use built one.
 - **PmWiki:** <https://www.pmwiki.org/>
 - **MediaWiki:** <https://www.mediawiki.org/wiki/MediaWiki>
 - **Instiki:** <https://golem.ph.utexas.edu/wiki/instiki/show/HomePage>

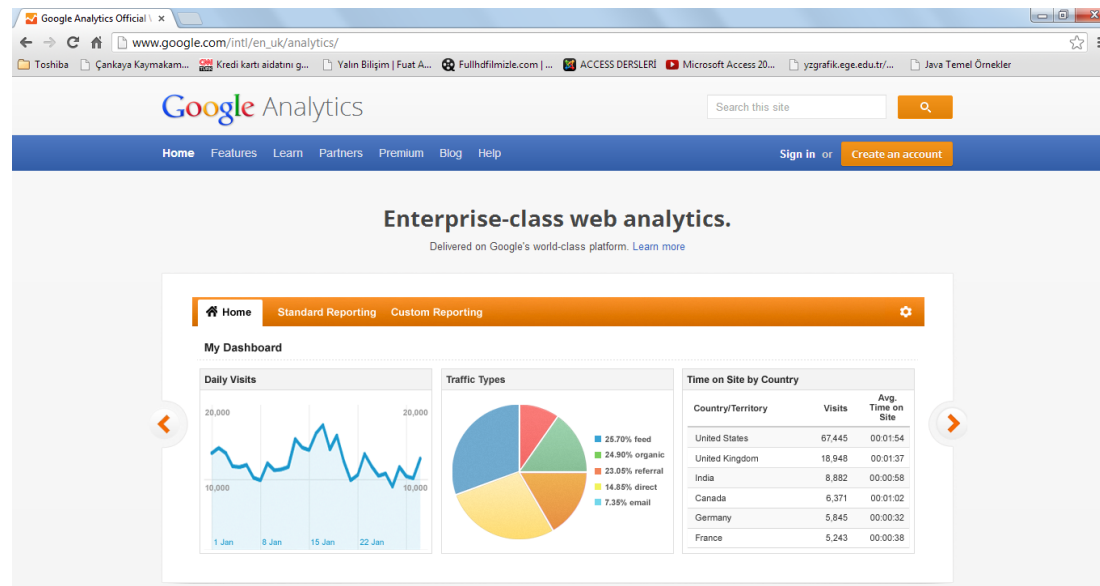


WIKIPEDIA
The Free Encyclopedia
Wiki Example

WEB 2.0

Google Analytics

- Google Analytics is used to take report of web pages.
 - Like who visits the pages
 - How many times it is visited
 - From which browsers it is visited
- To access Google Analytics follow the link <http://www.google.com/analytics/>



REAL TIME MEDIA

Definition of Real Time Media

- ***Real time media*** can be defined as an application in which information is received and immediately responded to without any time delay.
- Now it is possible to converse **in real time over the Internet**. If **the person you are talking to, has a webcam (web camera-video capture program)**, you can even see the other person on screen.
- For example; an ***Instant Messaging*** is a tool which allows instant text communication between two or more people through a network such as the Internet.

REAL TIME MEDIA

Instant Messaging

- Offers quick transmission of text-based messages from sender to receiver in real time.
- More advanced instant messaging allows enhanced modes of communication, such as live voice or video calling, video chat and hyperlinks to some media.
- Examples;
Google Hangouts, Skype,
Whatsapp, FaceTime, Facebook Messenger



Whatsapp

REAL TIME MEDIA

Video Conferencing

- **Video conferencing** is defined as; a conference between two or more participants at different locations over the Internet or a private network.
- Each user has a video camera, microphone, and speakers mounted on his or her computer.
- As the participants speak to one another, they hear each other's voices and see a video image of the other participant(s).

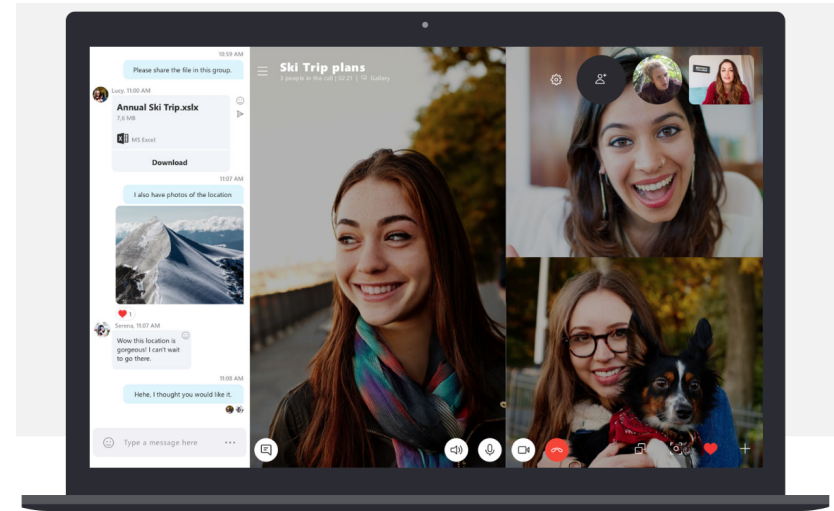


Video conferencing

REAL TIME MEDIA

Skype

- **Skype** is a software application that allows users to make telephone calls over the Internet.
- Calls to other users of the service and to free-of-charge numbers are free, while calls to other landlines and mobile phones can be made for a fee.
- Additional features include instant messaging, file transfer and video conferencing.



Skype

STREAMING MEDIA

Real Time Media

- Video or audio transmitted over a network that users can begin to play immediately instead of waiting for the entire file to be downloaded.
- Periscope, Instagram Live, and Youtube Live are some of the services that provide streaming media.

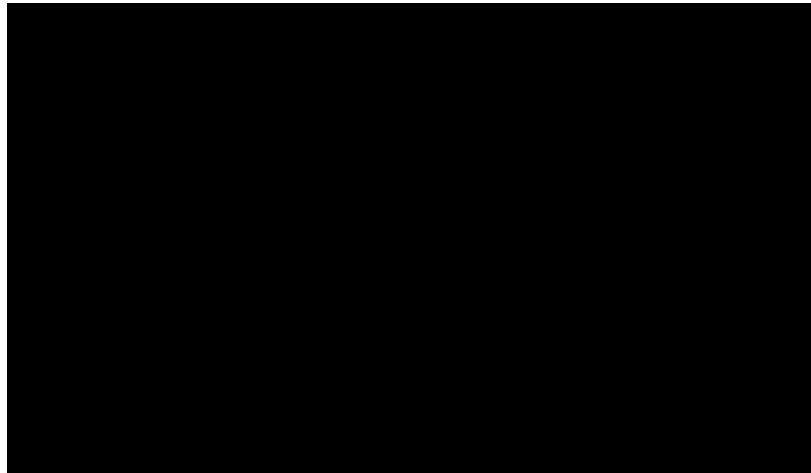


Streaming Media Services

STREAMING MEDIA

iTunes

- ***iTunes*** is a **media player** developed by Apple Computer, for playing and organizing digital music, video files, and purchasing digital music files in compliance with the FairPlay digital rights.
- The iTunes Music Store (also sometimes referred to simply as "iTunes" or "iTMS") is the component of iTunes through which users can purchase digital music files within iTunes.



STREAMING MEDIA

Radio ODTU

- You can listen Radio ODTU from the internet. Radyo ODTU broadcasts foreign music 7 days, 24 hours.
- ***How can I Listen Radyo ODTU from the Internet?***
 1. Visit the www.radyoodtu.com.tr
 2. Click the “**Canlı Yayın**” link on the **HomePage** of the Radyo ODTU
 3. Enjoy your music 😊

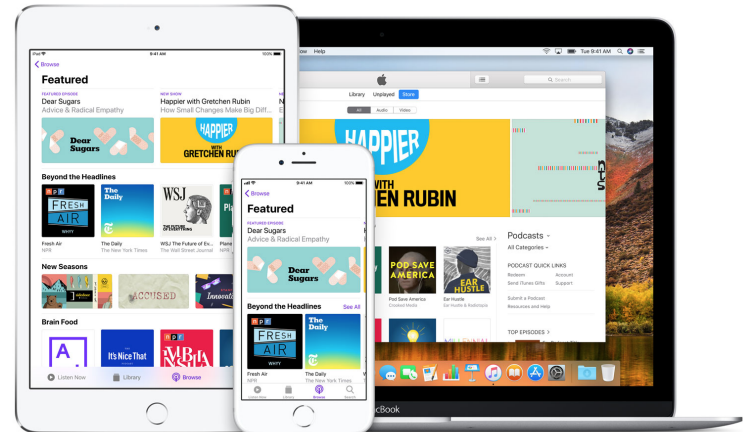


www.radyoodtu.com

STREAMING MEDIA

Podcasting

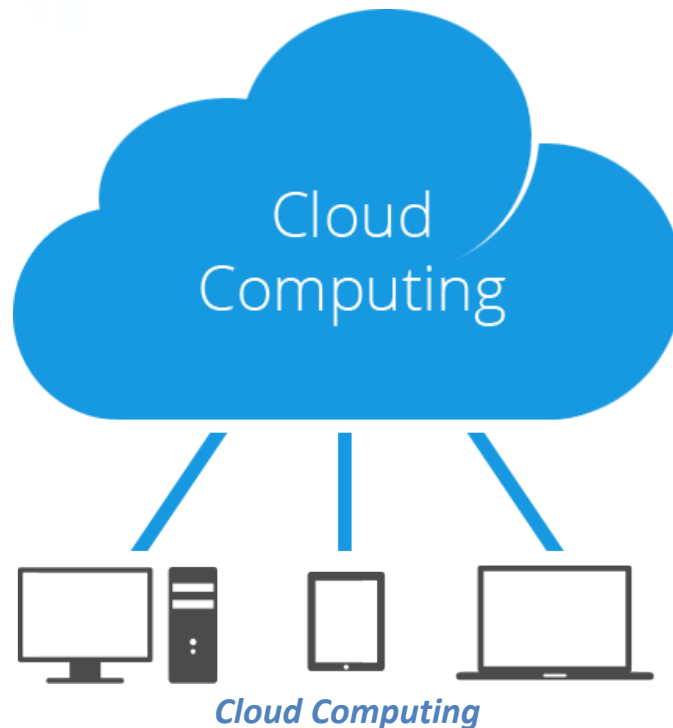
- Podcasting is a way to receive audio files over the Internet by using feeds to listen the audio broadcasts directly from your computer. (A **web feed** is a data format used for serving users with frequently updated content.)
- You can listen to the files on your computer or download them on your mobile phones and take them with you.
- For example; Stanford University's list of podcasts at: <https://ecorner.stanford.edu/>



iTunes Podcast

CLOUD COMPUTING

Cloud Computing refers to the systems where users access to the computing resources (storage, processing power, applications, etc.) that are installed in outer sources and delivered over a network (e.g. Internet).



CLOUD COMPUTING

Cloud Storage

Cloud Storage is a network delivered service that provides users to save, manage and share files that are stored in a host server.

Advantages:

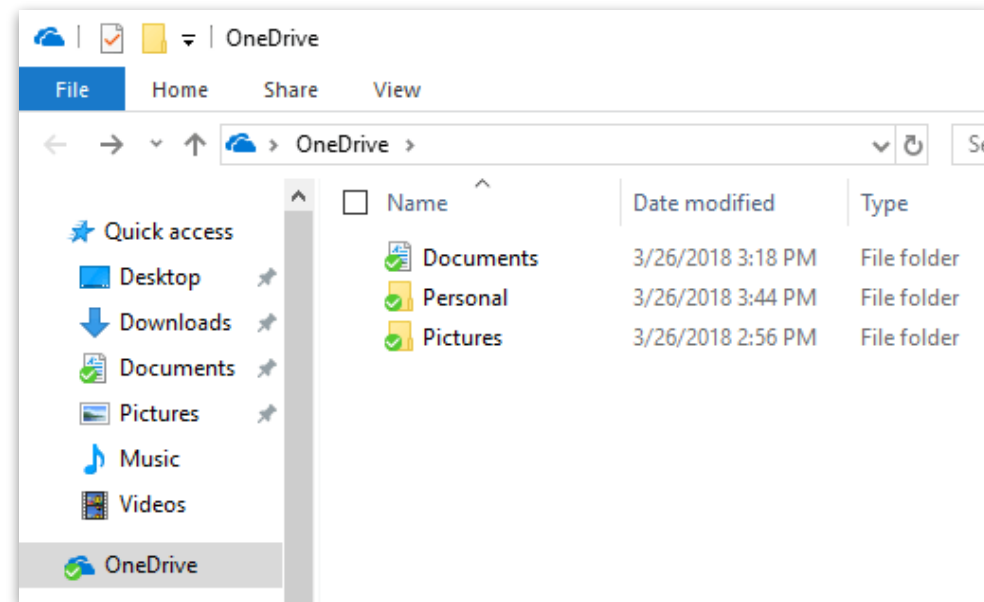
- Gain in storage space
- Location independent access
- Synchronization
- Sharing and collaboration
- OneDrive, Dropbox, and iCloud are some of the examples of Cloud Storage Services.

CLOUD COMPUTING

Cloud Storage: OneDrive

OneDrive is the cloud storage system supported by Windows.

- Access through Web browsers and OneDrive folder.
- Built-in share options for Facebook and Twitter.
- Easily integrable with Microsoft Office Programs.



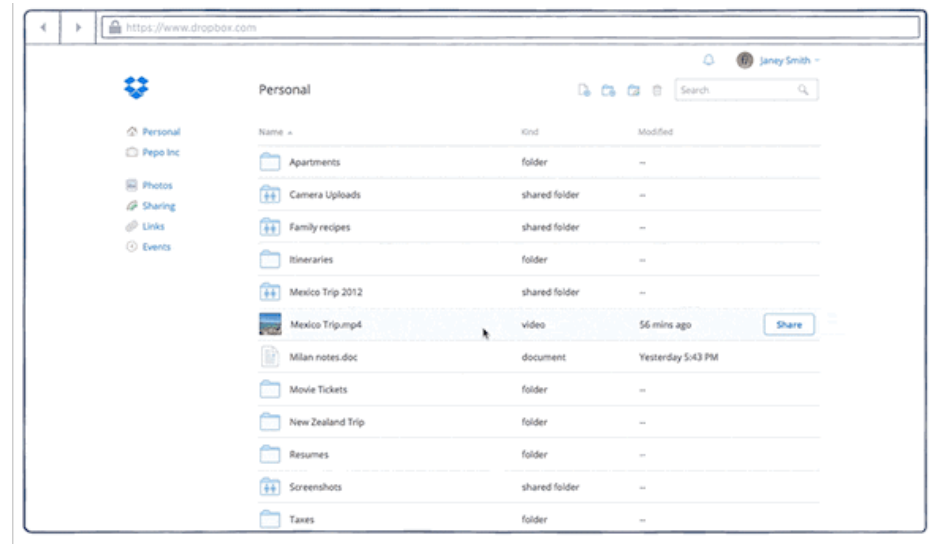
OneDrive folder

CLOUD COMPUTING

Sharing File with Dropbox

Dropbox is an alternative to OneDrive, where you can also store and share your files.

- Sign in to dropbox.com, and find the file you'd like to share.
- Hover over the file, and click the Share button that appears.
- Enter the email addresses of the people you want to invite, and click Send.
- Or, you can copy the link and paste it into an email, chat, or whatever you're using to communicate



Dropbox File Sharing



Generative Media & AI Creation

Sharing File with Dropbox

The Shift in Editing

- Moving from manual editing to AI-assisted generation.
- Powered by tools like Canva's Magic Studio & Adobe Firefly.

Synthetic Media Capabilities

- Text-to-Image: Instant custom graphics from text descriptions.
- Text-to-Video: Dynamic clips and b-roll generated from text prompts.

The New Skill: Prompt Engineering

- Writing precise text instructions to guide AI models.
- Controlling lighting, camera angles, and style through language



**METU
ODTÜ**



TEST YOURSELF

MULTIMEDIA

References

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4. **Introduction to Cloud Computing** <https://www.explainthatstuff.com/cloud-computing-introduction.html> Last visit: December, 2018
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7. **Cloud Computing** <https://ipsrsolutions.com/cloud-computing/> Last Visit: December, 2018
8. How to share a file in your Dropbox — with a link <https://blogs.dropbox.com/dropbox/2015/05/sharing-101-links/> Last Visit: December, 2018