Information Technology Standards

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Standards:
People, Process, Products and Productivity
Focus on Information Technology Standards

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The Team

- Spring has taught courses on IT standards over a 25 year period and authored more than 2 dozen papers in the field. He served on the Strategic Planning Committee of X3, The NRC Oversight Panel for the IT Lab of the NIST.
- Weiss served on the ANSI standards committees X3V1 and X3S3 in the 1980s and conducted the first empirical research on standards that we are aware of; he also has served on several journal editorial boards.
- Tipper and Krishnamurthy work in the area of telecommunications and networking standards and have worked with NIST on standards related matters.
- Joshi works in the area of Role Based Access Controls (RBACs) and has made significant contributions to the related standards.

Overview of the Modules

- Standards: Organizations and Process
  - Standards in the Modern World
  - Standards Organization
  - Standards Process
- Select IT Standards
  - Security Standards
  - Core Web Standards
  - Advanced Web Standards
  - Document Interchange Standards
  - Big Data and Data Mining
  - Emerging Standards for Cognitive Radio (IEEE P.1900)
  - Cellular Telephony and Wireless Networks
  - OSIRM and the Internet Stack (IP,TCP, DNS)

Structure of the Modules

- Each module includes four parts:
  - Videos taking students through selected aspects of the topic,
  - One or more sets of PowerPoint slides for use by the instructor,
  - Background materials with references to the relevant academic and professional literature,
  - An exercise that can be used to demonstrate mastery of the content.
- Optionally modules contain extensive background readings
- The website, which can be cloned contains historical resources and a database of references.

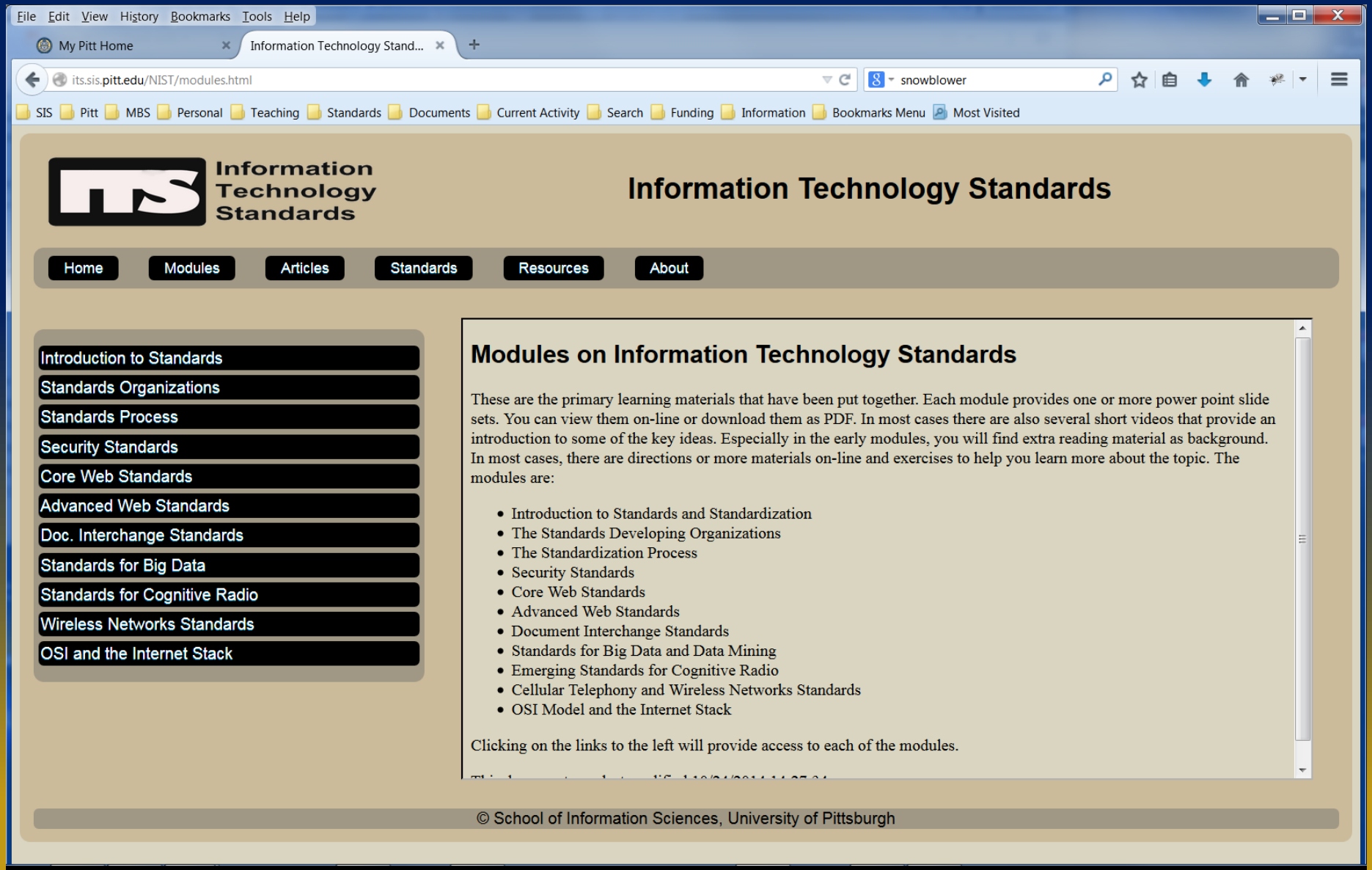
Content in the Distribution

- While the website is pretty much self explanatory, the material provided in the distribution is more extensive:
  - For each video provided, there are high resolution versions for use offline, medium resolution versions for streaming from the server, and lower resolution versions designed for smartphones. (In reality, we also maintain super high resolution versions of the original videos used by Adobe After Effects.
  - For each PowerPoint slide set, there are the original versions as well as PDF's of the slides and the online version which is a HTML5 compatible version produced by Adobe Captivate.
  - For select documents, we provide links to their original sources, but also provide local copies.

Responsive Design Website

- The standards for HTML5, CSS, and the DOM specify capabilities that allow a dynamic web interface.
- Called responsive design, a website can be designed to accommodate various devices and capabilities.
- The ITS website will function on desktops, tablets, and smartphones, delivering content differentially.
- The site was also designed for easy cloning
- The parent site is located at:
  - http://its.sis.pitt.edu/NIST
- The next two slides show how the interface morphs

Desktops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Introduction to Standards
Standards Organizations
Standards Process
Security Standards
Core Web Standards
Advanced Web Standards
Doc. Interchange Standards
Standards for Big Data
Standards for Cognitive Radio
Wireless Networks Standards
OSI and the Internet Stack
Modules on Information Technology Standards
These are the primary learning materials that have been put together. Each module provides one or more power point slide sets. You can view them on-line or download them as PDF. In most cases there are also several short videos that provide an introduction to some of the key ideas. Especially in the early modules, you will find extra reading material as background. In most cases, there are directions or more materials on-line and exercises to help you learn more about the topic. The modules are:
Introduction to Standards and Standardization
The Standards Developing Organizations
The Standardization Process
Security Standards
Core Web Standards
Advanced Web Standards
Document Interchange Standards
Standards for Big Data and Data Mining
Emerging Standards for Cognitive Radio
Cellular Telephony and Wireless Networks Standards
OSI Model and the Internet Stack
Clicking on the links to the left will provide access to each of the modules.
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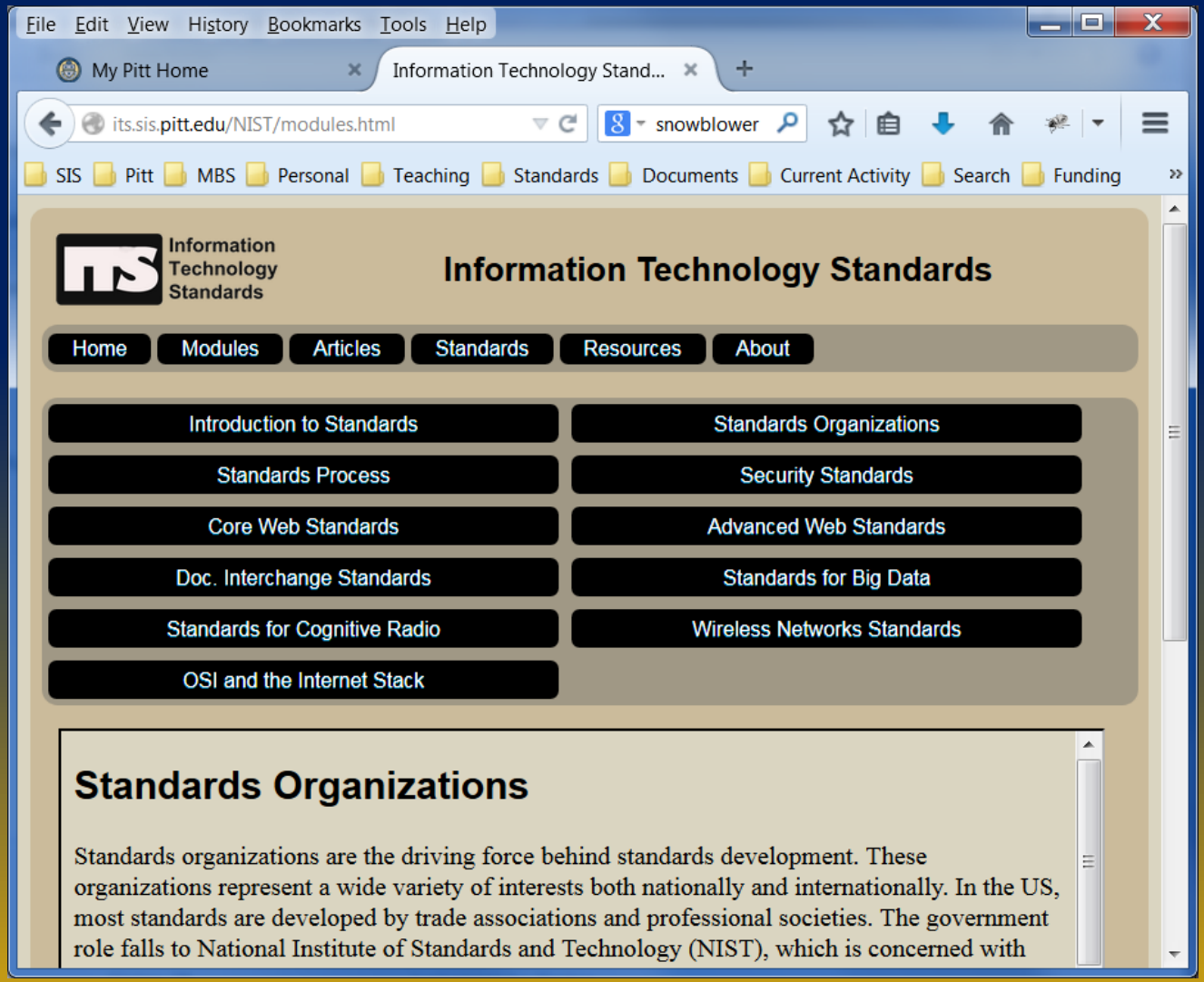
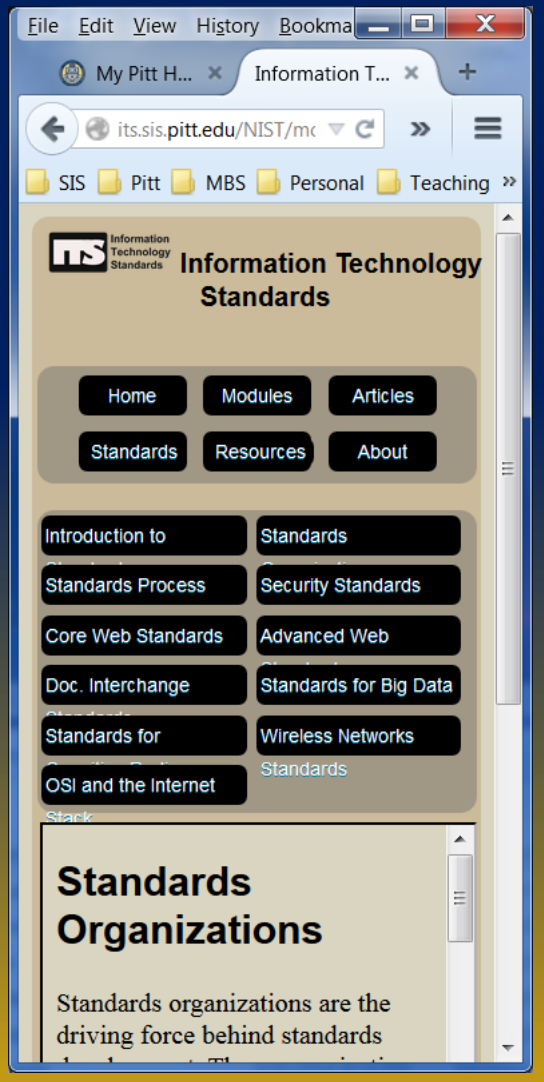
Tablets and Smartphones





Discussion of Responsive Design

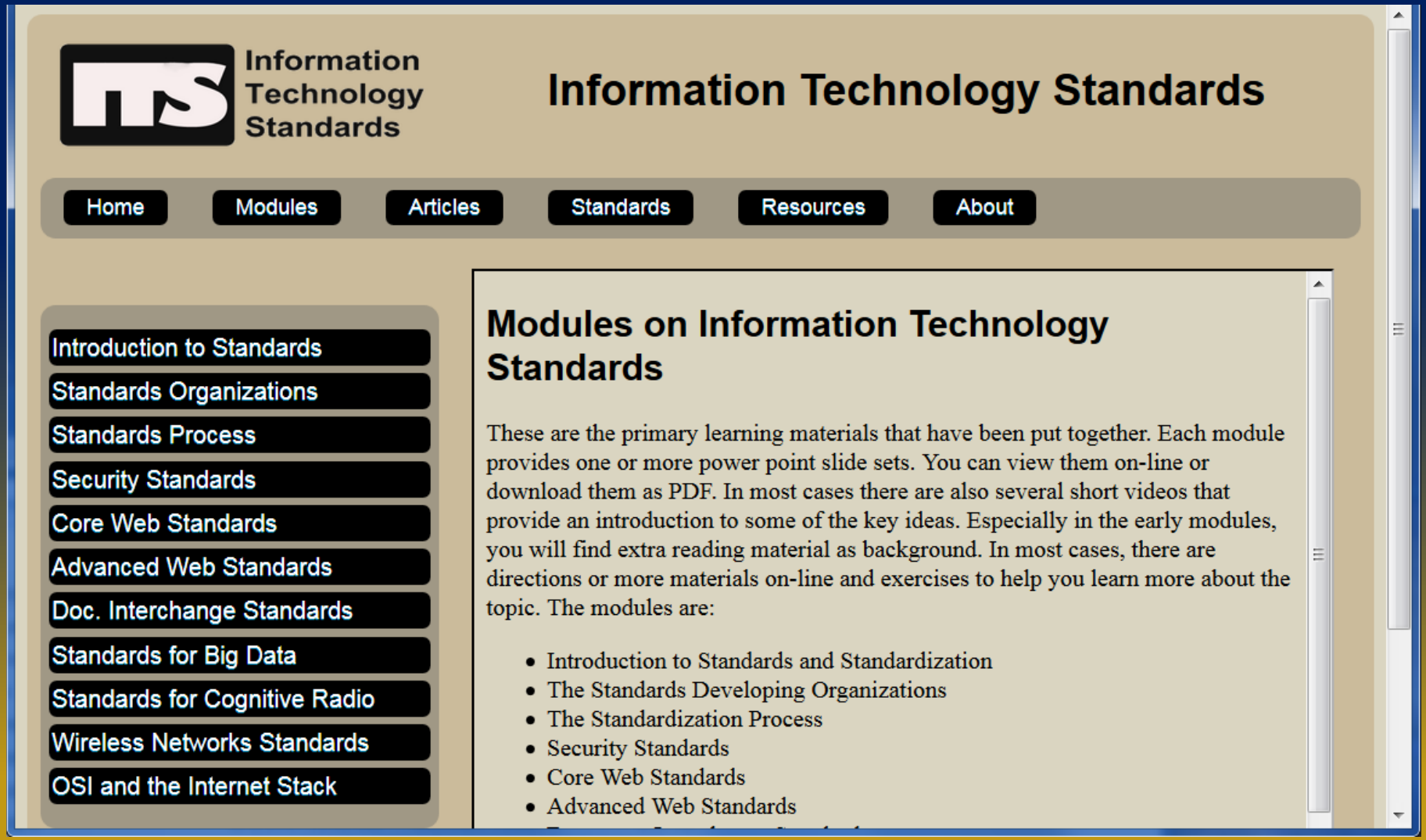
- On the home page, there is a link to a page on the design of the site.
- This page links to pages that:
  - Describe the evolution of browser compliance with the HTML5 standard
  - Measure the compliance of the particular browser an individual is using.
- We made efforts to use the project as an active learning environment for explaining the importance and use of standards

HTML5/CSS3 Readiness

Structure of the Website

- The website has six components:
  - **Home** describes the site and provides access to more information on the design of the site
  - **Modules** provides access to the powerpoint slides, the videos, the background materials and the exercises for the ten modules
  - **Articles** provides access to the database of articles as well as several preselected sets
  - **Standards** provides direct or indirect access to various standards that are important to the modules and/or the IT field
  - **Resources** provides information about SDO's and their histories as well as IPR information
  - **About** provides credits

Modules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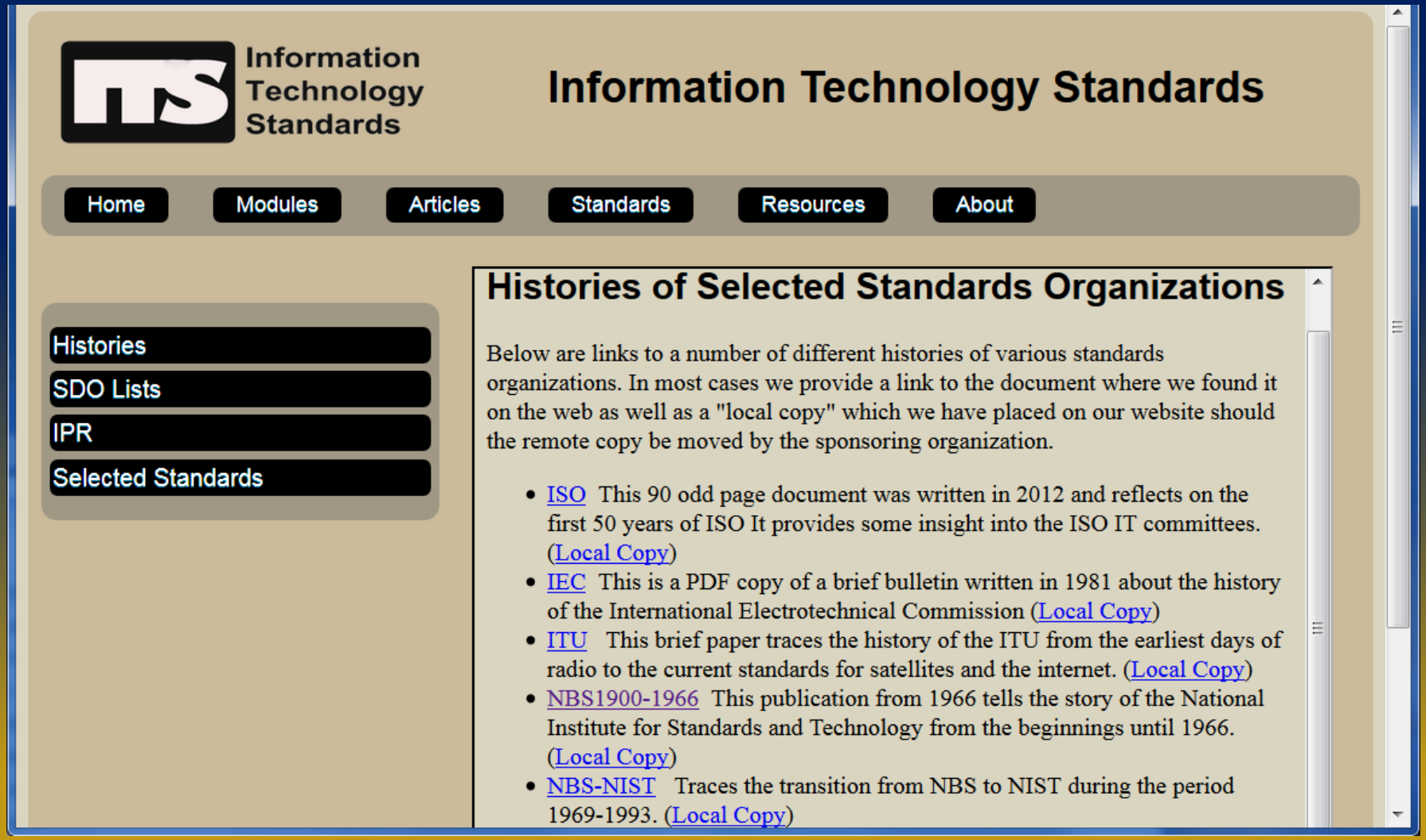
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Home
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Resources
About
Histories
SDO Lists
IPR
Selected Standards
Histories of Selected Standards Organizations
Below are links to a number of different histories of various standards organizations. In most cases we provide a link to the document where we found it on the web as well as a "local copy" which we have placed on our website should the remote copy be moved by the sponsoring organization.
ISO This 90 odd page document was written in 2012 and reflects on the first 50 years of ISO It provides some insight into the ISO IT committees. (Local Copy)
IEC This is a PDF copy of a brief bulletin written in 1981 about the history of the International Electrotechnical Commission (Local Copy)
ITU This brief paper traces the history of the ITU from the earliest days of radio to the current standards for satellites and the internet. (Local Copy)
NBS1900-1966 This publication from 1966 tells the story of the National Institute for Standards and Technology from the beginnings until 1966. (Local Copy)
NBS-NIST Traces the transition from NBS to NIST during the period 1969-1993. (Local Copy)

Cloning the website

- Complete instructions for cloning and modifying the website are provided with the contents. All the project files and information are included with the distribution. The short instructions for cloning include:
  - Download mysql community server and tomcat.
  - In the server.xml file in the conf folder of the tomcat directory and make sure the connector port is set to 80
  - Copy the contents of this distribution into the webapps folder of the tomcat directory.
  - Start tomcat – bin/startup.bat or as a service if you used that option. The website will and 98% functional.
  - Start MYSQL, and import "bibdump.sql"; then create a new user, create a password and give that user basic privileges to nistbib.
  - Go to the webapps NIST/WEB-INF folder and edit config.properties to identify the databse machine, user, and passwords.

Questions/Comments

- Questions comments and feedback are most welcome

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