Chapter 1 : LINAC (Linear Accelerator)

Contents may have variations from the printed book or be incomplete or contain other coding. Contents List of Illustrations ix List of Figures xi List of Maps xii Acknowledgements xiii Introduction: The Main Witness 7 Prologue: The Destruction of Jerusalem, 66Â¿70 CE 11 Part I: A Mediterranean World 1.

This app allows users to create new todo list items, check them off, and remove them. The complete sample uses Microsoft Azure Mobile Services to store data, and also uses Bing Maps to provide valid addresses. The complete todo list sample app can be downloaded here: Get the complete sample and run it If want to skip right to the complete sample and run it, get it by downloading the Cordova samples here. Get the samples by choosing the Clone or download button on this page. A few things to know before you run the app: To store todo list items on Azure optional , you need to set up a SQL database using the Azure portal. To run the complete sample: If you downloaded the. Open the project file. GenyMotion also provides a good emulator but set up and configuration takes time. If you are running on a Windows 10 machine, we also recommend targeting Windows-x64 or Windows-x86 as a platform, and selecting Local Machine as your target. Press F5 to start the app. An element for new list items. An AngularJS template that will display each task in the todo list. The element looks like this: For example, the AngularJS ng-model directive enables two-way data binding, and allows you to save the entered task when the addToDo function runs. For the todo list, we define a template using some nested elements that wrap several other elements. For example, the nested element shown here is used to display each task string. Later, when you attach actual data and run the app, ng-repeat will add the child element templateContainer and its child elements to the DOM for each stored todo list item. Because Cordova is not dependent on any particular JavaScript framework, we are not trying to provide in-depth information about AngularJS programming in these steps. Instead, we are showing a good example of one way to create a cross-platform app using Visual Studio Tools for Apache Cordova. Now, we will add the complete markup for index. Add markup for the list Open index. Here are the other AngularJS attributes included in index. Add CSS style information In the css folder, open index. It is a long section of code, so get the current CSS code from the complete sample and paste it into index. You can take a look at the empty todo list in one of the emulators to verify that everything looks correct. If you prefer to test your app on another target, see the following topics: To build and run the app Open fetch. If you chose the Android platform, choose one of the Ripple simulators, as shown here. If you chose a Windows platform, you can run the app on the default deployment target, Local Machine. The following illustration shows an example of what the AngularJSToDo list app looks like in one of the Ripple simulators with no actual data yet attached, and with some files missing at this stage. In the Download AngularJS dialog box, make sure that the minified 1. In the Download AngularJS dialog box, choose Browse additional modules, and download angular-resource. In the Visual Studio Solution Explorer, add a new folder under the scripts folder of the project and name it frameworks. You cannot add this folder while the app is running. Open the shortcut menu for the frameworks folder, and then choose Add, Existing Item. Add the two AngularJS files from steps 1 and 2 to the project. Update the script references In index. Those additional references should look like this. Modules in this app include the data model xPlat. To register the modules, use the angular. To register angular modules In Solution Explorer, open the shortcut menu for the scripts folder, and then choose Add, New Folder. Use this command to add three folders under the scripts folder: Repeat the preceding step to add additional JavaScript files to the directives and services folders, respectively: In this initial implementation, the app also provides placeholder code for Bing Maps services, which can be implemented fully later on. The complete sample app also uses Azure to store data. To add code for the data model In the services folder, open storage. In this code, we provide a generic way to add storage service. In the initial implementation, we add the localStorage service. Later, we will add an Azure service using this code. Otherwise, use local storage. One thing to note here is the inclusion of the q service component in the service provider function. This object enables asynchronous

programming, so that you can create a promise object using q. Using the promise object, you can resolve the asynchronous operation when it has completed. To add the controller In the controllers folder, open toDoCtrl. At runtime, this code associates the correct event handler declared in HTML markup in index. These are implemented in toDoCtrl. To add a directive for data binding In the directives folder, open textChange. To add other app services In the services folder, open guidGenerator. This code generates a unique ID to associate with each todo list item. We will use this code later to enable Bing Maps geolocation services. For now, it is used to associate the current location, if available, or a default location with the current todo list item. Get an API key at https: This code adds a handler for the Cordova deviceready event to help make sure that the event fires before the app runs plugin code. To build and run the app Press F5 to run the app on the same target you specified previously. Windows and the Ripple simulator have minimal setup requirements, so we recommend initially targeting one of these two platforms. The following illustration shows an example of what the AngularJSToDo list app looks like in one of the Ripple simulators. Now, you can add new todo list items by typing text and pressing Enter Ripple or tapping outside of the input box Windows. Add Bing Maps services optional The complete sample includes a Bing Maps service to associate your current address with each todo list item. If you are more interested in setting up Azure Mobile Apps, you can skip these steps and go to the next section. To add Bing Maps support to the app: Add the Cordova Geolocation plugin to the app by double-clicking config.

Chapter 2 : LYRASIS : Free Texts : Free Download, Borrow and Streaming : Internet Archive

Note: Electronic data is machine generated. May be incomplete or contain other coding. May be incomplete or contain other coding. List of Illustrations ix Maps xi Introduction xvii 1.

Engineering drawing An engineering drawing is a type of drawing and is technical in nature, used to fully and clearly define requirements for engineered items. It is usually created in accordance with standardized conventions for layout, nomenclature, interpretation, appearance such as typefaces and line styles , size, etc. Computer graphics There are two types of computer graphics: Using vectors results in infinitely sharp graphics and often smaller files , but, when complex,like vectors take time to render and may have larger file sizes than a raster equivalent. In , Ivan Sutherland invented Sketchpad , an innovative program that influenced alternative forms of interaction with computers. Ross of MIT developed an advanced compiler language for graphics programming. Coons , also at MIT, and J. Ferguson at Boeing , began work in sculptured surfaces. In the s, artists and graphic designers began to see the personal computer, particularly the Commodore Amiga and Macintosh , as a serious design tool, one that could save time and draw more accurately than other methods. The Macintosh remains one of the most popular tools for computer graphics in graphic design studios and businesses. Modern computer systems, dating from the s and onwards, often use a graphical user interface GUI to present data and information with symbols, icons and pictures, rather than text. Graphics are one of the five key elements of multimedia technology. In , Quake , one of the first fully 3D games , was released. In , Toy Story , the first full-length computer-generated animation film, was released in cinemas. Since then, computer graphics have become more accurate and detailed, due to more advanced computers and better 3D modeling software applications, such as Maya , 3D Studio Max , and Cinema 4D. They have since evolved into true pieces of art, their practical purpose obsolete; modern screens are not susceptible to such burn in artifacts. Web graphics[edit] In the s, Internet speeds increased, and Internet browsers capable of viewing images were released, the first being Mosaic. Websites began to use the GIF format to display small graphics, such as banners, advertisements and navigation buttons, on web pages. SVG, and to some extent VML , support in some modern web browsers have made it possible to display vector graphics that are clear at any size. Plugins expand the web browser functions to display animated, interactive and 3-D graphics contained within file formats such as SWF and X3D. This is because MS Paint is a drawing package and not a graphics package. Numerous platforms and websites have been created to cater to web graphics artists and to host their communities. Uses[edit] Graphics are visual elements often used to point readers and viewers to particular information. They are also used to supplement text in an effort to aid readers in their understanding of a particular concept or make the concept more clear or interesting. Popular magazines , such as TIME , Wired and Newsweek , usually contain graphic material in abundance to attract readers, unlike the majority of scholarly journals. In computing, they are used to create a graphical interface for the user; and graphics are one of the five key elements of multimedia technology. Graphics are among the primary ways of advertising the sale of goods or services. Business[edit] Graphics are commonly used in business and economics to create financial charts and tables. The term Business Graphics came into use in the late s, when personal computers became capable of drawing graphs and charts instead of using a tabular format. Business Graphics can be used to highlight changes over a period of time. Advertising[edit] Advertising is one of the most profitable uses of graphics; artists often do advertising work or take advertising potential into account when creating art, to increase the chances of selling the artwork. Most importantly, graphics gives a good look to artwork whenever it is applied. Graphics contribute to the general outlook of a designed artwork, this in turn lure interested members of the public to look at the work of art or purchasing it. Any graphical work especially advertisement or any work of art that is poorly design will not persuade the audience. Political[edit] The use of graphics for overtly political purposesâ€"cartoons, graffiti, poster art, flag design, etc. The Northern Irish murals are one such example. Presidential election Barack Obama "Hope" poster. It was first published on the

web, but soon found its way onto streets throughout the United States. Diagrams are also used to label photographs and pictures. Educational animation is an important emerging field of graphics. Animated graphics have obvious advantages over static graphics when explaining subject matter that changes over time. The Oxford Illustrated Dictionary uses graphics and technical illustrations to make reading material more interesting and easier to understand. In an encyclopedia , graphics are used to illustrate concepts and show examples of the particular topic being discussed. In order for a graphic to function effectively as an educational aid, the learner must be able to interpret it successfully. This interpretative capacity is one aspect of graphicacy. Film and animation[edit] Graphics education[edit] The majority of schools, colleges and universities around the world educate students on the subject of graphics and art. Some graphics courses prioritize traditional craft skillsâ€"drawing, printmaking and typographyâ€"over modern craft skills. Other courses may place an emphasis on teaching digital craft skills. Still other courses may downplay the crafts entirely, concentrating on training students to generate novel intellectual responses that engage with the brief. Despite these apparent differences in training and curriculum, the staff and students on any of these courses will generally consider themselves to be graphic designers. The typical pedagogy of a graphic design or graphic communication, visual communication, graphic arts or any number of synonymous course titles will be broadly based on the teaching models developed in the Bauhaus school in Germany or Vkhutemas in Russia. The teaching model will tend to expose students to a variety of craft skills currently everything from drawing to motion capture , combined with an effort to engage the student with the world of visual culture. Noted graphic designers[edit] Aldus Manutius designed the first italic type style which is often used in desktop publishing and graphic design. April Greiman is known for her influential poster design.

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Table of Contents: Machine generated contents note: Working With Couples From a Psychodynamic Perspective Using Cognitive Maps / Multiple Couple Illustrations.

These registers include both user and executive copies of the A, X, R, and J registers and many special function executive registers. The table on the right shows the addresses in octal of the user registers. There are 15 index registers X X15 , 16 accumulators A A15 , and 15 special function user registers R The 4 J registers and 3 "staging registers" are uses of some of the special function R registers. One interesting feature is that the last four index registers X X15 and the first four accumulators A A3 overlap, allowing data to be interpreted either way in these registers. These machines had different architectures and word sizes and were not compatible with each other or with the and its successors. They all used vacuum tubes and many used drum memory as their main memory. It was never sold commercially. This was the first commercial computer to use core memory instead of the Williams tube. They all used transistorized electronics and integrated circuits. Early machines used core memory the used plated wire memory until that was replaced with semiconductor memory in It was also known as the Thin-Film Computer because of its use of thin-film memory for its register storage. It represented a marked change of architecture: With six cycles of thin-film memory per 4 microsecond main memory cycle, address indexing was performed without a cycle time penalty. Only 36 systems were sold. The core memory was available in 16, bit words in a single bank; or in increments of 16, words to a maximum of 65, words in two separately accessed banks. With a cycle time of 4 microseconds, the effective cycle time was 2 microseconds when instruction and data accesses overlapped in two banks. The word thin-film memory general register stack 16 each arithmetic, index, and repeat with a few in common had a nanosecond access time with a complete cycle time of nanoseconds. Six cycles of thin-film memory per core memory cycle and fast adder circuitry permitted memory address indexing within the current instruction core memory cycle and also modification of the index value the signed upper 18 bits were added to the lower 18 bits in the specified index register 16 were available. Programs could not be executed from unused thin-film memory locations. The FH drum memory unit was also supported as a spooling and file-storage media. Spinning at RPM, it stored approximately , bit words. The , without any peripherals, weighed about 5, pounds 2. Smaller and faster cores , compared to the , were used for main memory. In addition to faster components, two significant design improvements were incorporated: The two bit base registers one for instruction storage and one for data storage permitted dynamic relocation: To support multiprogramming, the had memory protection using two base and limit registers, with word resolution. One was called the I-bank or instruction bank, and the other the D-bank or data bank. The CPU was, with the exception of the word octal ICR Integrated Control Register stack, entirely implemented via discrete component logic cards, each with a pin high density connector, which interfaced to a machine wire wrapped backplane. The ICR Integrated Control Register stack was implemented with "new" integrated circuit technology, replacing the thin film registers on the The ICR consisted of bits, with a half-word Parity Bit calculated and checked with each access. The core memory was contained in a one or more separate cabinet s , and consisted of two separate 32K modules, for a total capacity of 64K bit words bits data and a Parity Bit for each bit half-word. With everything busy, five activities could be going on at the same moment: One more instruction was incorporated: Although a internal study indicated only about 43 might sell, in all, processors were produced. To support this, it had up to , words four cabinets of eight-ported main memory: The memory was organized in physical banks of 65, words, with separate odd and even ports in each bank. The instruction set was very similar to that of the , but included some additional instructions, including the "Test and Set" instruction for multiprocessor synchronization. Some models of the implemented the ability to divide words into four nine-bit bytes, allowing use of ASCII characters. Three CPU systems, with four core memory cabinets were the exception due to cost considerations. It was a custom-built, stand-alone math coprocessor to the A system. The UAP, at its most

basic level, consisted of four A arithmetic units, and associated control circuitry, contained in a standalone cabinet almost identical to the A CPU. The UAP was physically and logically situated between two A multiprocessor systems. It was capable of directly addressing and interfacing to the four 65K core memory cabinets of two independent A systems. It was capable of executing a number of array-processing instructions, the most important being Fast Fourier Transform FFT. In this new naming convention, the final digit represented the number of CPUs e. As the market for commercial computing became more mature, these operating systems were no longer able to meet the growing demand for business computing, where applications were commonly written in COBOL. Where engineering and scientific programs could often be "compute bound" i. Since CPU performance was not an issue in these applications, it made commercial sense to create a lower-priced, lower-performance system to address the rapidly growing commercial business market. Like the , it was multiprocessor capable, though it appears that it was never supplied with more than two CPUs, and did not support IOCs. In order to keep costs low, and CPU could be ordered with as few a four word channels. Sperry Univac sold a total of processors in systems. A simplified description is that the CPU executed a block transfer op code of the ICR stack the first memory addresses back to the same addresses. The CAU expanded the memory address range from the bits and to bits, allowing for up to 16 million words of addressable memory. Each memory cabinet contained eight independent 8K plated wire memory modules, or 64K for the entire cabinet. It was possible to utilize the 64K core memory cabinets as Extended Storage, but in most systems utilized, the larger, less expensive K memory cabinets from the system. Up to eight Extended Memory cabinets were allowed, for a maximum of one million words of Extended Storage. The largest configuration, 6x4 was only used by NASA. The CAU could have as many as four instructions in various stages of execution at any given instant. The discrete component logic used by the older systems was replaced by transistorâ€"transistor logic TTL integrated circuits see Note, below. The CAU was an extremely complex unit, utilizing over cards. In this new naming convention, the final digit represented the number of CPUs in the system. This allowed expansion of the Main Memory to a maximum of K. New instructions were added to allow a program to change the contents of the banks, rather than the banks being fixed when the program was prepared Sperry Rand sold a total of processors in systems. Part numbers beginning with "4" originated in the Roseville St. Paul , MN location. Purchased Components group was in Blue Bell. Semiconductor memory series[edit] In , Sperry Univac introduced a new series of machines with semiconductor memory replacing core, with a new naming convention: The allowed Main Storage to be expanded from maximum of K to a maximum of K. It was intended to combine and systems. The CAU was capable of executing both bit series instructions, and bit series instructions. This was used to load microcode, and for diagnostic purposes. The system also included a System Support Processor for diagnostic testing and system console support. It was the largest, and final, member of the Series, and was the only system to be liquid-cooled.

Chapter 4 : With the Machine Gunners in France and Palestine | NZETC

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How is safety ensured? What is this equipment used for? A linear accelerator LINAC is the device most commonly used for external beam radiation treatments for patients with cancer. These treatments can be designed in such a way that they destroy the cancer cells while sparing the surrounding normal tissue. The linear accelerator uses microwave technology similar to that used for radar to accelerate electrons in a part of the accelerator called the "wave guide," then allows these electrons to collide with a heavy metal target to produce high-energy x-rays. The beam is usually shaped by a multileaf collimator that is incorporated into the head of the machine. The patient lies on a moveable treatment couch and lasers are used to make sure the patient is in the proper position. The treatment couch can move in many directions including up, down, right, left, in and out. The beam comes out of a part of the accelerator called a gantry , which can be rotated around the patient. Radiation can be delivered to the tumor from any angle by rotating the gantry and moving the treatment couch. The medical physicist and the dosimetrist determine how to deliver the prescribed dose and calculate the amount of time it will take the accelerator to deliver that dose. Radiation therapists operate the linear accelerator and give patients their daily radiation treatments. Patient safety is very important and is assured in several ways. Before treatment is delivered to the patient, a treatment plan is developed and approved by the radiation oncologist in collaboration with the radiation dosimetrist and medical physicist. The plan is double-checked before treatment is given and quality-assurance procedures are performed to ensure that the treatment will be delivered as planned. Quality assurance of the linear accelerator is very important. There are several systems built into the accelerator so that it will not deliver a higher dose than the radiation oncologist has prescribed. Each morning before any patients are treated, the radiation therapist performs checks on the machine to make sure that the radiation intensity is uniform across the beam and that it is working properly. In addition, the medical physicist conducts more detailed monthly and annual checks of the linear accelerator. Modern linear accelerators also have internal checking systems that do not allow the machine to be turned on unless all the prescribed treatment requirements are met. During treatment, the radiation therapist continuously observes the patient using a closed-circuit television monitor. There is also a microphone in the treatment room so that the patient can speak to the therapist if needed. Safety of the staff operating the linear accelerator is also important. The linear accelerator sits in a room with lead and concrete walls so that the high-energy x-rays are shielded and no one outside of the room is exposed to the x-rays. The radiation therapist must turn on the accelerator from outside the treatment room. Because the accelerator only emits radiation when it is actually turned on, the risk of accidental exposure is extremely low. This page was reviewed on May 01, Send us your feedback Did you find the information you were looking for?

Chapter 5 : SQL Server Extended Events Packages | Microsoft Docs

Predicates Maps Objects from different packages can be mixed in an event session. Package Contents The following illustration shows the objects that can exist in packages, which are contained in a module. A module can be an executable or a dynamic link library. Events Events are monitoring points of interest in the execution path of a program, such as SQL Server. An event firing carries with it the fact that the point of interest was reached, and state information from the time the event was fired. Events can be used solely for tracing purposes or for triggering actions. These actions can either be synchronous or asynchronous. Note An event does not have any knowledge of the actions that may be triggered in response to the event firing. A set of events in a package cannot change after the package is registered with Extended Events. All events have a versioned schema which defines their contents. This schema is composed of event columns with well defined types. An event of a specific type must always provide its data in exactly the same order that is specified in the schema. However, an event target does not have to consume all the data that is provided. Two event properties are used for categorization, channel and keyword. Channel A channel identifies the audience for an event. These channels are described in the following table. Term Definition Admin Admin events are primarily targeted to the end users, administrators, and support. The events that are found in the admin channels indicate a problem with a well-defined solution that an administrator can act on. An example of an admin event is when an application fails to connect to a printer. These events are either well-documented or have a message associated with them that tells the reader what to do to rectify the problem. Operational Operational events are used for analyzing and diagnosing a problem or occurrence. They can be used to trigger tools or tasks based on the problem or occurrence. An example of an operational event is when a printer is added or removed from a system. Analytic Analytic events are published in high volume. They describe program operation and are typically used in performance investigations. Debug Debug events are used solely by developers to diagnose a problem for debugging. Events in the Debug channel return internal implementation-specific state data. The schemas and data that the events return may change or become invalid in future versions of SQL Server. Therefore, events in the Debug channel may change or be removed in future versions of SQL Server without notice. Keyword A keyword is application specific and enables a finer-grained grouping of related events, which makes it easier for you to specify and retrieve an event that you want to use in a session. You can use the following query to obtain keyword information. Targets Targets are event consumers. Targets process events, either synchronously on the thread that fires the event or asynchronously on a system provided thread. Extended Events provides several targets that you can use as appropriate for directing event output. Actions An action is a programmatic response or series of responses to an event. Actions are bound to an event, and each event may have a unique set of actions. Note Actions that are intended for a specific set of events cannot bind to unknown events. An action bound to an event is invoked synchronously on the thread that fired the event. There are many types of actions and they have a wide range of capabilities. Capture a stack dump and inspect data. Store state information in a local context using variable storage. Append data to event data. Some typical and well known examples of actions are: This enables the Extended Events user to selectively capture event data based on specific criteria. Predicates can store data in a local context that can be used for creating predicates that return true once every n minutes or every n times that an event fires. This local context storage can also be used to dynamically update the predicate, thereby suppressing future event firing if the events contain similar data. Predicates have the ability to retrieve context information, such as the thread ID, as well as event specific data. Predicates are evaluated as full Boolean expressions, and support short circuiting at the first point where the entire expression is found to be false. Note Predicates with side effects may not be

evaluated if an earlier predicate check fails. Types Because data is a collection of bytes strung together, the length and characteristics of the byte collection are required in order to interpret the data. This information is encapsulated in the Type object. The following types are provided for package objects:

Chapter 6 : UNIVAC / series - Wikipedia

machine shop and the rapid prototyping lab. I would like to thank all the group members in the Langrana Lab, David, Frank, Lulu, Sarah, Penelope, Deven and Michelle and the group members in Shreiber Lab.

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Chapter 8 : Graphics - Wikipedia

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Chapter 9 : Diagram - Wikipedia

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