

Chapter 1 : Android SDK tutorial for beginners - what you need to know

The MDL language is a structured programming language for building an application of the standard commands, functions and objectives. We would like to briefly describe the MDL as in the following. MDL is a language that uses C structures, with its own run-time libraries, compiler, linker, library management process Sequence, and Micro Station.

This new implementation of VBA provides rapid development features for designing applications and tools for MicroStation. Organizations can leverage built-in knowledge of Windows programming to improve the CAD workflow and environment. Casual developers, such as CAD managers, can take advantage of visual interface construction tools to build Windows-like programs quickly. Despite these advantages however, CAD managers may still opt to defer development of more sophisticated applications to professional programmers. Although VBA makes automation easier, there are still problems that require programming skill and experience. Compared to the alternatives, VBA is still easier. First, MDL creates elements dynamically, displaying them as they are dragged around the screen. And second, macros must be started each time you need them, whereas MDL applications are loaded, but run "silent" until a command is requested. MicroStation VBA will run until requested, can handle complex dynamics, so building applications in this easy-to-use programming environment sounds like the way to proceed. But, is ease of programming really the most important aspect of VBA? In a word, yes. VBA has at least one more advantage. It has the ability to read and write to MicroStation from other applications. For example, a VBA application in Excel can scan the contents of a MicroStation file directly and manipulate the spreadsheet or the design file based on conditions discovered in either file. A manufacturer of spray nozzles may use a spreadsheet to calculate the flow rate required in a main supplying a nozzle array. The spreadsheet could be arranged such that the total flow rate and the pipe main size are calculated based on nozzle model numbers entered into the spreadsheet. An Excel VBA could automatically draw the array and label the drawing with size and flow parameters of the array. Using a less complex example we will build an Excel VBA to extract cell names from a design file and lists the names in the spreadsheet. Of course this is a simple example, but it can be extended to create a quantity take off application, or an equipment schedule tool. The possibilities are endless. Imagine linking specification documents to schedules, or comparing vendor drawing data to design data in your MicroStation file. We do this by creating a reference to the DGN 8. Under the Tools pull down menu, choose References. A dialog appears with a list of references for your computer. Open Excel, press "Alt-F11". Now that there is an object Library we no longer need to create an OLE application object. A template sub routine is automatically created. It will look like this:

Chapter 2 : MicroStation VBA for AutoCAD Users | Cadalyst

January 20, January 11, vijaysambhe Bentley, C, MDL, Microstation, Microstation Development Language C# Let me start with very small a Hello World app using MDL programming. This will give an idea where to start, how to compile and produce calendrierdelascience.com file and run calendrierdelascience.com file.

Some articles describe aspects of MicroStation software development , and others provide code examples. You may also find the BE Newsletter useful. It is published by Bentley Systems. We also answer that common question: See our books page for information about books that may be interesting to MicroStation developers. Just as VBA for Microsoft Word provides programming models for words and paragraphs, MVBA provides programming models for graphic elements, reference models, keyin commands, and many other features unique to MicroStation. Take a VBA training class! Function key F8 lets you step through your code and examine the state of your variables. The Debug object is your friend. Print "Trace message" gives you information that only you can see in the IDE. See also the MicroStation Message Center that can provide debug data to your users. The record macro buttons let you capture your user actions as a VBA recording. A A common question that has no simple answer. NET are both Microsoft technologies. NET by several years. The trick is to write a DLL using your favourite. This article shows the tricks and pitfalls. VBA generates binary code that is tightly coupled to the host application. NET cannot read a. You will need to modify the code to make it compatible with VB. A better route to using VB. Trademarks All trademarks are acknowledged. Trademarks may be registered in some jurisdictions. Contact LA Solutions using this enquiry form.

Chapter 3 : Excel VBA Programming - a free course for complete beginners

Thank you, I have installed the microstation SDK. There is an example but it is not clear enough to start with. Can you suggest me any tutorial or step by step guide for writing my first mdl application.

History[edit] MicroStation was initially developed by Bentley Systems and sold and supported by Intergraph in the s. The latest versions of the software are released solely for Microsoft Windows operating systems , but historically MicroStation was available for Macintosh platforms and a number of Unix-like operating systems. In , MicroStation 1. In , MicroStation 2. Almost two years later, MicroStation 3. New capabilities included binary raster support, custom line styles, settings manager, and dimension driven design. Later versions were all branded Bentley. All platforms other than the PC used bit processors. In , Windows 95 was released. Bentley soon followed with a release of MicroStation for that operating system. Aside from being the first version of MicroStation to not include the version number in its name MicroStation 95 was actually MicroStation v5. This version introduced a host of new features: Accudraw, dockable dialogs, Smartline, revised view controls, movie generation, and the ability to use two application windows similar to previous Unix driven Intergraph terminals that were dubbed the "Double-Headed Monster". Many of these features are among the most popular used today. These icons could also be made borderless, just like in Office This version of MicroStation also included several features to enable more work over the internet. This version also introduced enhanced precision and a very commonly used tool in MicroStation - PowerSelector. MicroStation V7 was released almost a year after SE. That file format had been used for about 20 years. Along with the new file format came many new enhancements, including unlimited levels, a nearly limitless design plane and no limits on filesize. Other features that were added were: But the most anticipated feature was the ability to work natively with DWG files, an ability perhaps lauded more than any other. MicroStation V8 Edition V8. According to Bentley, "XM" does not stand for anything. In MicroStation V8i V8. MicroStation now contains a module for GPS data. Structure designed in MicroStation. This version updated the application architecture to bit and changed to a Ribbon Interface. At its inception, MicroStation was used in the engineering and architecture fields primarily for creating construction drawings; however, it has evolved through its various versions to include advanced modeling and rendering features, including boolean solids, raytracing , and keyframe animation. It can provide specialized environments for architecture , civil engineering , mapping , or plant design, among others.

Chapter 4 : MicroStation Software Development Kit - Design, Modeling SDK

MicroStation/J introduced the Java MicroStation Development Library (JMDL). JMDL enabled one to develop and run either pure Java or JMDL code in MicroStation's Java Virtual Machine (JVM). JMDL added MicroStation-specific extensions to the Java language to integrate with the graphics engine and state machine.

You can create a generic project a. By referencing one project into another you can call the referenced procedures: There are a few more benefits obtained from creating an ActiveX component in this way. However, their own Office products include VBA, and have done so for many years. What you may not have noticed, because Microsoft has chosen not to publicise it, is that VBA7 has arrived! However, many MDL functions deal with C memory management, including pointers and pointers-to-pointers. VBA as a language knows nothing about pointers, pointer arithmetic, or memory allocation and memory deallocation. Using such functions from VBA is rather like giving someone a map of Paris, France and asking them to use that map to find an office in Los Angeles, California. Debugging hybrid code is a nightmare. If you fail to free that memory, your code will at best leak memory or, worse, crash MicroStation. Using the wrong tools for a job, as we learn from experience, leads to a poorly-executed job. The right tool for the job gets the job done efficiently, in a timely fashion, and is easily maintained. The right tool for the job in this case is a real MDL application. NET languages provide a rich user interface. Its IDE has of course excellent support for the. The LINQ technology provided with. In other words, from the functional point of view,. It has a great development tool in Microsoft Visual Studio and you can create a rich user interface. Others can copy-and-paste your code into their IDE for testing. Its functionality in some cases supersedes what is available through MDL.

Chapter 5 : Getting Started With MDL (Microstation Development Language) Programming

MicroStation VBA, the MicroStation V8 implementation of the Microsoft Visual Basic for Applications engine, one of the most popular programming environments in the world, provides MicroStation users (as well as developers) with a large number of capabilities -- from easy customization to tight integration with other Windows applications.

The intent of this chapter is not to teach you how to use the C language programming, there are many books about that. We assume that the reader is already familiar with the C programming language, it only involves a number of necessary MDL C functions. Here we discuss the basic methods of MDL programming. The basic concept The MDL language is a structured programming language for building an application of the standard commands, functions and objectives. We would like to briefly describe the MDL as in the following. MDL is a language that uses C structures, with its own run-time libraries, compiler, linker, library management process Sequence, and Micro Station environments. This book will go beyond the programming language MDL. It is a foundation for developing Micro Station Application tools. Before we begin the preparation of MDL code, we should have some terminology, standards and conventions clear. Program statements include the following: Control structure or description declaration statements? Notes These statements are combined into the MDL program as a text file, using the extension ". We write an MDL program with a string to draw a box around the same time, extending from the box on a lead. We will see it as a typical MDL program example. We will then use the new elements to make a unit. The program name is "plbox. There are many ways to write this program. While you read this book you will note there are many changes in this program, complete the procedures listed in this chapter. Finally, we will learn it step-by-step. Notes Note that the purpose is for the reader to understand the procedure, but also to enable programmers to modify the program to understand the procedure functions. The The compiler will ignore the comments. MDL does not support nested comments. Contains the file Contains the file is such a file that is included in the compile-time pre-processing program read into the program for use of the MDL source code. Sometimes also called the header include file documents, because they are at the beginning of the source. We can put the common constants in a separate document, then various programs can include this file to ensure that these constants are consistent. There are two definitions of the include file method: H" for the file extension. If you use angle brackets then the pre-processing program attempts MDL contains mesh Recorded. Or, we can put the file name in quotation marks, that informs the preprocessing program to contain the file that contains the file description statements directory to find the package with the file. These documents can be included within Micro Station.

Chapter 6 : MicroStation - Wikipedia

Introduction. Bentley MicroStation is a CAD software product for two and three dimensional design and drafting. It provides you an extensible framework using which you can easily customize and add new functionalities to it as per your requirements.

You will need these tools regardless of which version of Android you are targeting. These are what will actually create the APK – turning your Java program into an Android app that can be launched on a phone. These include a number of build tools, debugging tools, and image tools. The Build tools were once categorized under the same heading as the Platform tools but have since been decoupled so that they can be updated separately. As the name suggests, these are also needed to build your Android apps. This includes the zipalign tool for instance, which optimizes the app to use minimal memory when running prior to generating the final APK, and the apksigner which signs the APK surprise! The Platform tools are more specifically suited to the version of Android that you want to target. Generally, it is best to install the latest Platform tools, which will be installed by default. After first installation though, you need to keep your Platform-tools constantly updated. The tools should be backwards compatible, meaning that you will still be able to support older versions of Android. Anatomy of an app: It relies on Platform-tools in order to understand the Android version that is being used on said device and hence it is included in the Platform-tools package. You can use ADB to access shell tools such as logcat, to query your device ID or even to install apps. The Android emulator is what lets you test and monitor apps on a PC, without necessarily needing to have a device available. To use this, you also get an Android system image designed to run on PC hardware. I also recommend this resource on the build process that will help put the SDK into a little more context. They provide a kind of bridge between Android Studio and a physical device or emulator so that your app can be appropriately packaged and then tested as you develop. For the most part, you can leave the SDK alone: Android Studio will recommend necessary updates and it will call upon the required components when you hit Run or Build APK. That said, a few of the tools are also directly accessible, which will be used for things like updating the SDK, or directly monitoring and communicating with your Android device. If you are following along with an Android development tutorial, then you might sometimes get directed here in order to ensure that specific components are up-to-date. This lets you build your own emulators. This works with either an emulator or a connected device and will go a little deeper in monitoring the way your Android device and app are behaving. To do this, you will need to find your Android SDK installation folder and navigate to the platform-tools directory. On Windows, hold shift and right click anywhere in the folder to open a command line. On Mac, just open Terminal from Launchpad usually found in the Other folder. Now you can use a number of commands. You can find a list of the ADB commands here. Accessing the Documentation Looking for a specific Android development tutorial? There was a time when the Android SDK would also come packaged with a selection of useful sample projects. Today this is no longer the case, but you can find them instead by opening Android Studio and navigating to File – New – Import Sample. You may wish to use another IDE Integrated Development Environment , for instance if you want to streamline the process of making a 3D game in which case, you may wish to use Unity or Unreal , or if you are interested in cross platform mobile development in which case you might use Xamarin. You can also find the location of the Android SDK in Android Studio, in case you should ever need to move it, or just for your own reference. Just go to File – Project Structure. Be aware that this folder is hidden on Windows by default, so you might have a hard time finding it. This gives you access to certain libraries and can help to squeeze a little more performance out of a device – making it useful for game development, among other things. As mentioned, if it is just the SDK you are interested in, then you can download this on its own by visiting the downloads page and then choosing to include the sdkmanager. This will allow you to update the SDK through the command line. But for the vast majority of users, it makes a lot more sense to install the full suite and enjoy the graphical interface and other conveniences – even if you intend on using a different IDE for development. And this is the really good news: Android development is now easier than ever before thanks to the leaps and bounds that

Google has made with Android Studio. There was a time when setting everything up was considerably more complex. There has never been a better time to start Android development!

Chapter 7 : Getting Started with MicroStation Application Development - CodeProject

A Practical Guide for Using MicroStation V8i SS2 This guide breaks down the use of MicroStation V8i SS2 into manageable modules placing emphasis on the CDOT workflow.

Chapter 8 : MicroStation - 3D CAD Software for Architecture, Engineering

Best Tutorial for Photogrammetry and LIDAR trainees.

Chapter 9 : How to learn Kotlin: A resources guide for developers - TechRepublic

Use this development environment to create and customize professional grade applications for MicroStation and other Bentley applications. MicroStation's API is the recommended method to access Bentley DGN files with full fidelity.