



GENTOO

Computer Assisted Coding Platinum Pro Ltd.

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GENTOO Computer Assisted Coding

Summary

Platinum Pro Ltd has developed a computer assisted coding system that:

- Improves the quality of data storage and data entry screens
- Generates strongly typed datasets that can be used in data entry screens, reports and programs
- Generates audit tables
- Generates code in strongly typed dataset to audit the table in one of two different ways:
 - Behind the scenes trace (no notice to the user)
 - Prompting the user for an effective date of change and reason
- Generates code that allows the user to see the audit trace on a piece of data so that authorized users can correct the effective dates of certain changes or flag an audit entry to be ignored.
- Generates testing code for the strongly typed datasets
- Generates code to create data entry screens to view and modify data in tables
- Generates HTML help for the data entry screens
- Generates written documentation for the data entry screens
- Allows the programmer to control the look of the data entry screens
- Generates code for sub-tables and sub-sub-tables.
- The software is not limited to a specific industry or application. It has been used to develop software for benefits administration, mining, oil and gas, payroll, human resources, accounting and other industries.

Philosophy

We developed this software to help us write software better. This software will help an experienced programmer to create a simple to medium complexity data entry screen in about 3 hours while maintaining the power of a full featured programming language. Unlike other software applications that impose strict limitations on data control, Gentoo allows you the maximum control over every aspect.

The time estimate list above at 3 hours includes not only programming but also testing, documenting, and creating on-line help. More complex screens can be created with more time.

The package is “computer assisted coding”. It is meant to be used by a capable programmer to help them produce code to add, modify and delete data in a system. It generates code and then allows the programmer to modify the code to achieve precisely

what they need. Gentoo generates the code that is tedious and repetitive and then lets the programmer customize that code to achieve the necessary goal. This is an important aspect—the system does not generate the code and then lock it down, it *assists* the programmer with the coding.

The data entry screens follow our own user interface where the user enters the primary key fields in the row and once the primary key fields have been entered, the designated columns from the row are retrieved and displayed on the screen. The programmer can decide to use drop down lists, auto complete text boxes, standard text boxes, or check boxes for data entry. The programmer can add search capabilities based on any data in the system.

Here are some samples of screens that have been created using Gentoo:

Account Screen

Version Info

Account Code: ADVERTISE - Advertising

Account Description: Advertising

DR/CR: Debit Account

Stmt Type: Expense Account

AP Account
 AR Account
 Payment Account
 Requires Job Code
 Requires Material No
 Requires Fixed Asset
 Reconciled

Active History

	Effective Date	Active
▶	01 Jul 1990	<input checked="" type="checkbox"/>
*		<input type="checkbox"/>

Account Description

	Effective Date	Changed From	Changed To	Comment	Delete
	01 Jul 1989		Advertising	New Record	<input type="checkbox"/>
*					<input type="checkbox"/>

Save Cancel Delete

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Notice that there are text boxes, drop down boxes, sub-tables and audit tables.

Total G/L Accounts

Version Info

TotalAccountCode: FIXED - Fixed Assets

Account Description: Fixed Assets

DR/CR: Debit Account

Stmt Type: Asset Account

AccountCode	
ASSETCOMPUTER - Computer Equipment	▼
ASSETFURN - Office Furniture and Equipment	▼
ASSETSOFTWARE - Computer Software	▼
OFFIMP - Office Improvements	▼
*	▼

Save Cancel Delete

Platinum Pro Ltd.

Company Description

Platinum Pro is a software development company that has been providing software development services since 1990. We specialize in writing custom software for human resources, employee benefits, insurance and payroll. In that development process we have developed this Gentoo computer assisted coding software to help us develop our software.

Security Model

We currently do not have security built into the system. We can customize it to your requirements.

Support & Software Maintenance Model

When you need support or maintenance to the software, you will speak directly to the programmer who will be responsible for delivering the necessary changes. You can either phone or email.

The programmer will write up a description of the change requested and return it to the requester. You will designate who can authorize a proposed change. Once we have sign-off on the change, the programmer will make the change and publish a new version

to the test environment. Your staff will evaluate the change and determine if it meets the requirements.

Once the requirements are met, we will create a “publish live” request document. You will designate who can authorize a live publish. Once we have sign-off, we will publish the version to the live environment.

Implementation and Training

PROOF OF CONCEPT

We can bring our software to your offices. We will provide the computer. One or two of your staff will operate the software at our direction and we will step through the process of creating data entry screens. They will be able to propose scenarios and we will answer how the software will handle those scenarios.

We can discuss potential software modifications so your staff has a thorough understanding of the capabilities and limitations of the software.

Going through the proof-of-concept does not commit you to purchasing the software, but there is a small cost associated with the proof-of-concept.

DECISION

You will decide if the proof-of-concept meets your needs and determine if you need modifications to the software before we start the pilot. A signed contract will be required to proceed to the pilot. We will map out a timetable on how long it will take us to complete the modifications and associated costs.

PILOT

Once we have a signed contract, we will arrange a training session with your programming staff at your offices. We will need a training room where each participant can access a Windows computer with the software installed. The software will be installed on your computers. The software will store data on a database controlled by Platinum Pro. Only your staff and Platinum Pro staff will have access to this data. Once the training is complete, we will leave the software on your machines and you will be able to continue evaluating it.

The pilot will be available for evaluation for six months. If you do not proceed beyond the pilot stage, you will be required to remove the software from your machines and we will destroy the data. The pilot can be extended beyond six months at additional cost, but not beyond one year.

TRAINING

On day 1, the trainees will learn to install the software, create simple screens, with and without audit trails, with and without sub-tables.

On day 2, the trainees will learn to generate documentation, generate on-line help, and create sub-sub-tables. We will also review auto complete columns and other programming enhancements.

We will provide the trainees with a written manual and an on-line manual.

DECISION

Once the pilot is nearing its end, we can provide you with a report of all outstanding issues and enhancements and any associated costs. At this point, we need a decision to proceed with the implementation phase.

IMPLEMENTATION

We will come to your offices to provide additional training sessions—as many as you need.

SUPPORT AND MAINTENANCE PHASE

We will monitor the usage and provide monthly progress updates on outstanding issues—this can either be in a face-to-face meeting, by conference call, or written report, as you wish.

Environment

The software creates code in Microsoft VB.Net from a Windows Desktop Application (Thick Client). It generates code for the same type of environment, VB.Net code in a Windows Desktop Application. It is primarily used to interface with Microsoft SQL Server and Windows Azure, however, it has been used to create OleDb (Object Linking and Embedding Database) code for IBM's DB2, Sybase, and Oracle.

The software works on Windows 10 and may work on previous versions of Windows.

The database for the software is Microsoft SQL Server 13.0.1742.0 and will also run on the current version of Windows Azure.

The program also exports to Microsoft Word 2019 Version 1904 (Build 11601.20144 Click-to-Run), using an Office.Interop reference.

The software is written using Microsoft Visual Studio 2017 version 15.9.3 and works with Microsoft .NET Framework 4.7.03190.

It is our intention to keep the software up-to-date so that it can continue to use the most recent version of Windows, the most recent version of Microsoft Visual Studio and the most recent version of Microsoft SQL Server and Windows Azure. Currently, Visual Studio 2019 has been released, however, we usually like to wait 6-12 months before evaluating it so that we are not on the bleeding edge.

The system does not currently rely on additional custom server entities.

Process

ENTERING DATA PARAMETERS

You start the process by creating your data table in your database. You can use all the column data types in Microsoft SQL Server environment—text, numeric, boolean, binary, etc.

Next you enter the connection parameters to connect Gentoo to the database. In Gentoo, you add more information describing the data, such as:

- Full description of the data
- Source of data
- Reason for data
- Maximums and Minimums
- Permitted characters
- Valid examples
- Invalid examples
- Patterns

GENERATING STRONGLY TYPED DATASETS

Now, you can generate the strongly typed dataset. The strongly typed datasets include code to retrieve the data, add data, delete data, and update data. When you set the data in the strongly typed dataset, the data is validated according to the parameters you set in the previous step.

The strongly typed dataset can also store data in an associated audit trace table.

All generated code is marked for version control and is compatible with Microsoft Team Services and GitHub (versioning services that track changes to software code).

GENERATING CODE TO TEST THE DATASET

This step allows you to test the dataset. The generated tests, when set up properly, will cover almost all code possibilities. It will test your valid and invalid examples as well as other standard tests.

GENERATING DATA ENTRY SCREEN CODE

The programmer starts by designing the screen. We will teach your programmers the general operating principles of the screens and how to get the most out of Gentoo.

In Gentoo, the programmer will specify the columns of your table that will appear in the screen. You do not need to specify that all the data columns appear in the data entry screen. You can also specify how you want the audit trail to work, whether it will prompt the user for an effective date and reason, or just store the audit trail in the background.

The audit trail currently includes the following information:

- Who modified the data
- Date and time of modification (in Universal Coordinated Time)
- What the data was before the modification
- What the data was after the modification

And when you have requested that the user enters an effective date and reason, it will show those fields.

- Effective date of the data change
- Reason for the data change (user entered description)

You copy the code from the generator and paste it into your Visual Studio IDE (integrated development environment). The programmer can now run the code and test it to make sure it works as expected. We have a procedure manual that is helpful to both new users and experienced users.

The screen code controls row level record locking to prevent two people from modifying the same data at the same time.

GENERATING HTML HELP

Click another button and the program will generate on-line help. The HTML help can be customized for your precise needs. The HTML help uses a CSS (Cascading Style Sheet) that you can customize for each project.

GENERATING DOCUMENTATION

Click on another button and the system will generate written documentation in Microsoft Word. All you need to do is take a screen shot of the screen you have created and paste it into the documentation. You will want to copy this documentation into a comprehensive user manual. Again, the documentation can be customized—it is simply a Microsoft Word document and you can manipulate it like any other Microsoft Word document.

GENERATING SUB-TABLES

If you have a table for employees, then an example of a sub-table would be a dependents table. Gentoo will generate code so that you can attach the sub-table to the base screen using a datagridview (a Visual Studio component). The programmer will cut and paste the code from a Notepad document into the Visual Studio environment.

These sub-tables can be audited just like the regular tables.

GENERATING SUB-SUB-TABLES

If you have employees, and dependents, an example of a sub-sub-table could track when a dependent receives a vaccination. Gentoo generates code that will show you the vaccinations for the dependent that you choose..

Training

We will provide as many training sessions as you require. The training sessions are best done at your site in groups of 1-4 programmers where they each have access to the software and can run some hands-on simulations.

Pricing

The cost of the proof-of-concept will be \$4,700 plus travel expenses.

If you decide to proceed with the pilot, we will bill you \$95,000.

If you decide to proceed with the implementation stage, we will bill you \$650,000. We will also start billing you \$15,000/month licensing fee. The initial licensing fee will be in effect for a minimum 2 year period and after that, can be renewed one year at a time. If you do not continue with the licensing fee, you will be required to remove the Gentoo software from all your computers.

Each two-day training session will be billed at \$5,200 plus travel expenses.

The costs listed cover the Provincial Health Service Authority and any regions that are under the PHSA umbrella. If training is required at a specific region, we will charge you for the training in that location. If a region needs its own database, we will not charge you again for the software, only for the consulting services required to help the region set up and configure their server.

All prices are in Canadian dollars. Applicable sales taxes will be added to the prices quoted. We ask that you pay your invoices within 30 days.

Any code generated by this system is not subject to ongoing fees.

If you wish to hire Platinum Pro to customize the software to suit your needs better, our hourly rate is \$250/hour. Travel and accommodation expenses (if travel is required outside of the Calgary region) will be billed without markup. If we are required to travel outside of the Calgary region, there will be a minimum 8 hours per day billed.

Enhancements

The following is a list of potential modifications that could be made to the software. This is not a comprehensive list. The software currently does not include these features. These enhancements are NOT included in the base price, but are priced separately.

GENERATING CODE IN C#

Currently the system generates code in VB.Net. If you would like the system to generate code in C# we could add that option. The programs would work exactly the same, but the code generated would be in C# rather than VB.Net. You would still retain the option of generating code in VB.Net.

GENERATING CODE IN ASP.NET

If you want to be able to generate code to do the same functions but using a thin client (e.g. browser), we could add an option to generate the code in ASP.Net. The foreground would be HTML and the background could be either VB.Net or C#. There would also need to be some code in a scripting language like Jscript. The exact language can be determined in consultation with your staff.

SECURITY TO RESTRICT WHO CAN USE THE GENTOO SOFTWARE

We can add code to extract the user from the Active Directory and use this information together with a User Security table in Gentoo to limit who can access Gentoo and what functions they can use.

ACCESSING DATA FROM OTHER DATABASES

Currently the system can access data from:

- Microsoft SQL Server
- Windows Azure
- IBM DB2
- Sybase
- Oracle

If you would like to add other databases if they are compatible with the Gentoo structure.

AUDIT TRAIL OF DATA VIEWED

Currently the generated code can track who has modified data and what they have modified. We can change the code so that it can keep an audit trail of who has accessed the data.

INTERFACING WITH OTHER APPLICATIONS

We are experienced with XML, JSON, APIs and other import/export methods. We can modify the Gentoo software to allow you to interface your data with other applications.

Enhancement Pricing

The following section will describe the estimated cost associated with the modification proposed in the previous section.

Enhancement Description	Estimated Cost
Generating code in C#	\$50,000 - \$100,000
Generating code for ASP.Net	\$75,000-\$150,000
Security to restrict who can use the software	\$15,000-\$30,000
Accessing data from other databases	\$10,000-\$125,000
Audit trail of data viewed	\$5,000-\$10,000
Interfacing with Other Applications	To be determined