



<RAD Studio 12.2>
is Coming



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Features are not committed until completed and GA released

Safe Harbor Statement

Any plans discussed represent our intentions as of this date, and our development plans and priorities are subject to change, due to competitive factors, availability of resources and other matters common to all independent software vendors.

Accordingly, we can't offer any commitments or other forms of assurance that we will ultimately release any or all of the described products on the schedule or in the order described, or at all.

These general indications of development schedules or "product roadmaps" should not be interpreted or construed as any form of a commitment, and our customers' rights to upgrades, updates, enhancements and other maintenance releases will be set forth only in the applicable software license agreement.

IMPORTANT: Features are not committed until completed and Generally Available (GA) released

Today's keynote

Why Brazil is about to become the
World's next Silicon Valley

What is coming in version 12.2 of RAD
Studio

How to scare the translators!



Keynote

Why Brazil is about to
become the World's next
Silicon Valley



Silicon Valley



Silicon Valley



Silicon Valley: The next edition

Campinas
Araraquara

São Carlos

USP

UFSCar

UNESP

Recife

Vale do Sapucaí, Minas Gerais

Santa Rita do Sapucaí

Belo Horizonte

Florianópolis

Rio de Janeiro

Porto Alegre

Curitiba

Blumenau

Londrina



Silicon Valley

MVP Directory

Most Valuable Professionals - Best of the Best

Search



- Any Country -

Clear



Abdelali Zekiri

Location: France



About MVP

Abdullah ILGAZ

Location: Turkey



About MVP



Version 12.2

What is coming in the next
version of RAD Studio?





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Before I tell you some secrets..

Do you pinky-promise not to tell
anyone? 😊





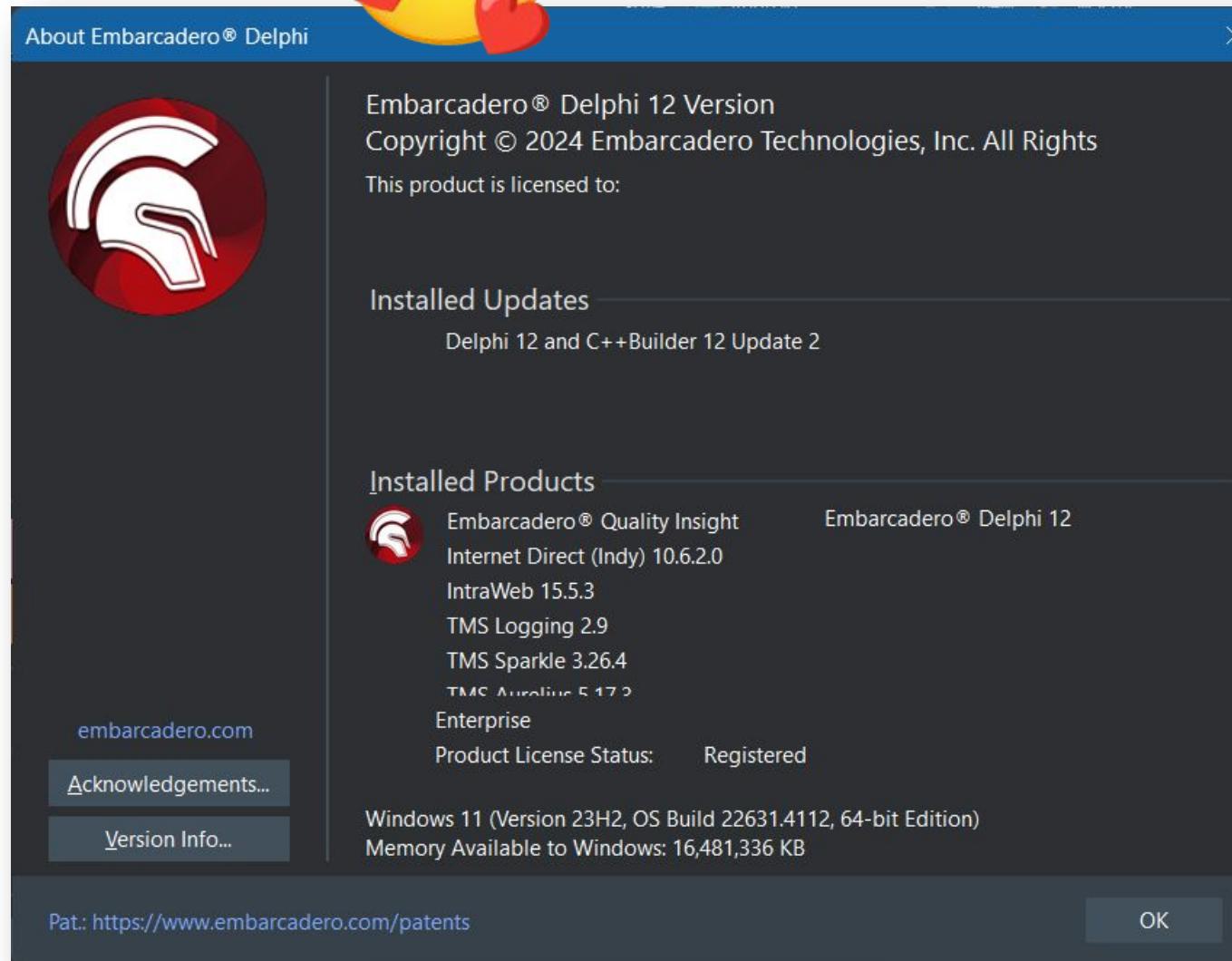
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Coming in 12.2



Runtime Packages, compile speed and more for the modernized C++ compiler and toolchain

64-bit Version of both Delphi Windows compilers

Smart CodeInsight: AI powered coding

Editor enhancements: focus mode and scrollbar annotations

WebStencils template library

C++Builder Visual Assist integration

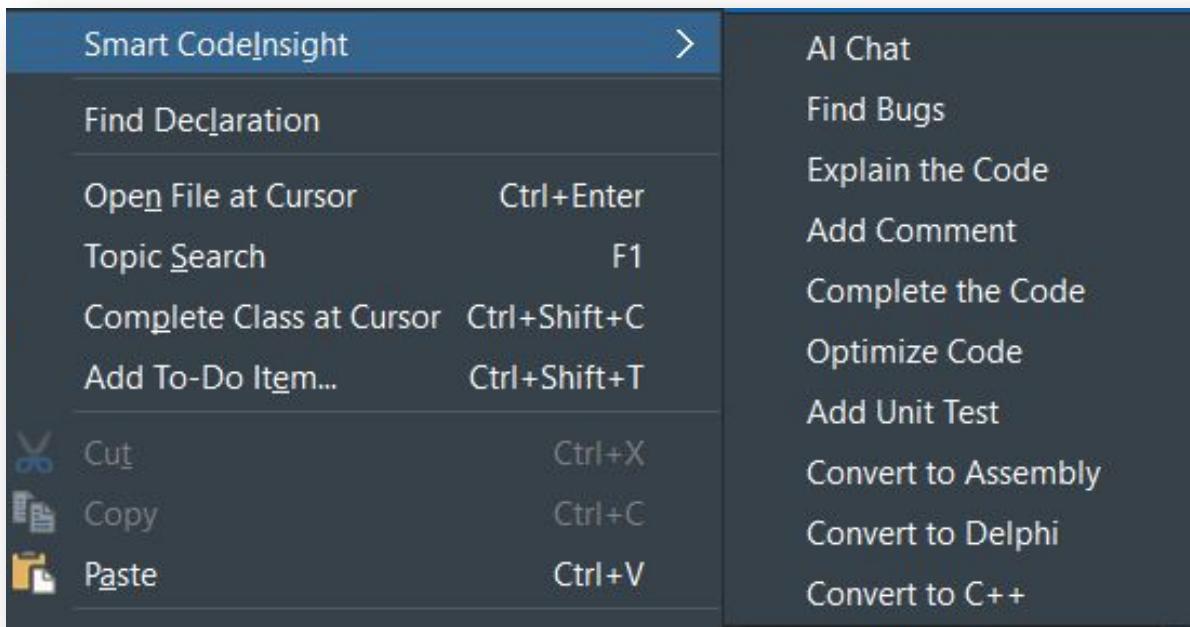


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Delphi LSP – lots of quality improvements and a new architecture

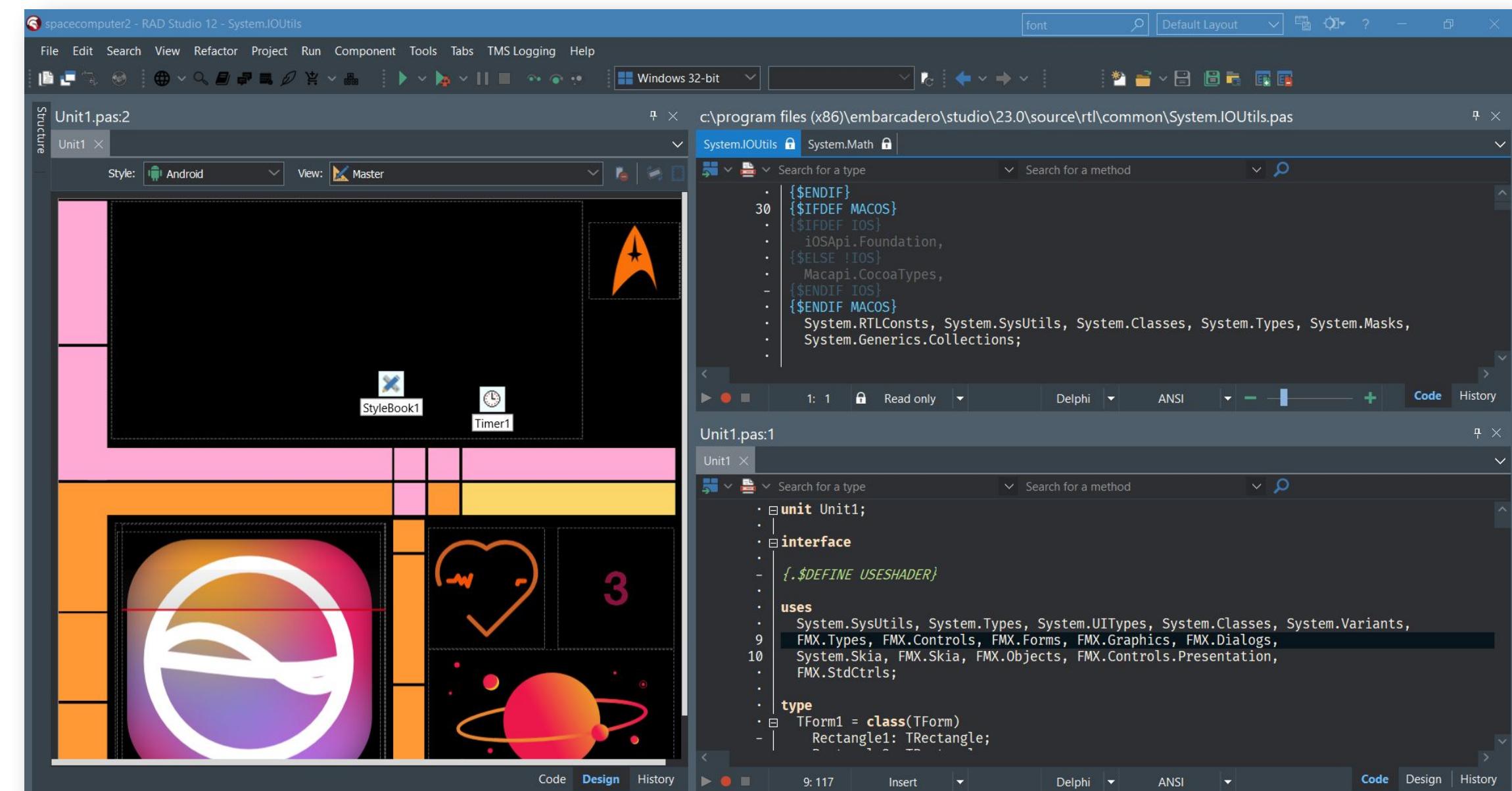
Delphi RTL, VCL, and FireMonkey quality

RAD Server improvements and enhancements including WebStencils support

Coming in 12.2

Improved mobile development and external libraries linking

Debugger quality work





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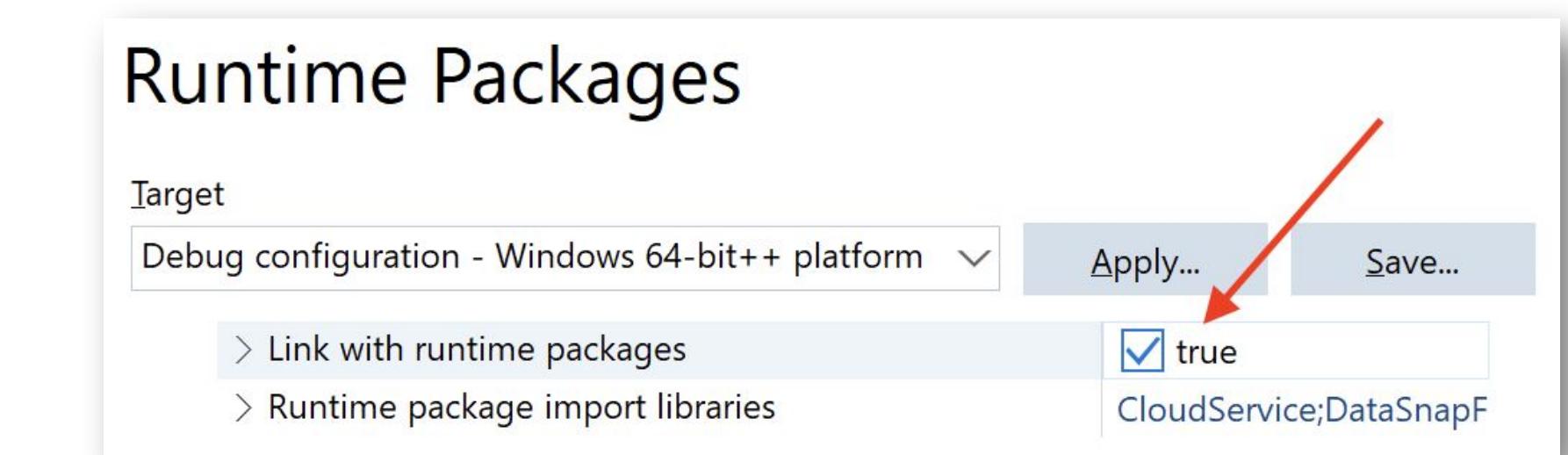


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Modernized C++ Compiler and Toolchain

- ¤ **Extensions** to the new Clang-based C++ compiler for Win64 in RAD Studio 12.1
- ¤ **Dynamic Packages!**
 - ¤ Link *dynamically* against BPLs
 - ¤ Producing packages
i.e. C++ source code -> a BPL)





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Modernized C++ Compiler and Toolchain

- ¤ Cmake
 - ¤ In progress internally
 - Aim to contribute back changes to **CMake** project,
ie, let people just download CMake and it will work with **bcc64x**
 - ¤ Support for the **--jobs** parameter (batch compilation) this is a new implementation and it makes C++ compilation **incredibly** faster, leveraging your CPU cores
 - ¤ C++ Win64 and Win64X will both be present in 12.2, in parallel



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64-bit Version of Delphi Windows compilers

64-bit binaries (large memory address) for Delphi Windows compilers for both Win32 and Win64 **command line compilers**

- ✓ Can be enabled in the IDE, when using external **MSBuild**
- ✓ Allows building **very large** applications as a single executable
- ✓ Available only in **Enterprise** and **Architect**

64-bit binary (large memory address) version of the DelphiLSP executable

- ✓ Can be activated in the IDE
- ✓ Also available only in Enterprise and Architect

Notice that the new C++ Clang compiler has been a 64-bit binary since release.



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Smart CodeInsight: AI Powered Coding

Use AI LLMs for coding in the RAD Studio IDE

- ✓ An open architecture for AI plugins

Ready-to-use support for three online solutions

- ✓ OpenAI
- ✓ Gemini by Google
- ✓ Claude by Anthropic

and one offline solution

- ✓ Ollama





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Smart CodeInsight: AI Powered Coding

Everything is optional and disabled by default

Multiple providers, so you can choose which one or ones you want to enable

A locally installed, offline solution for maximum privacy

You decide *if* and *how* to use AI

... and you can even create additional plugins for your preferred solution



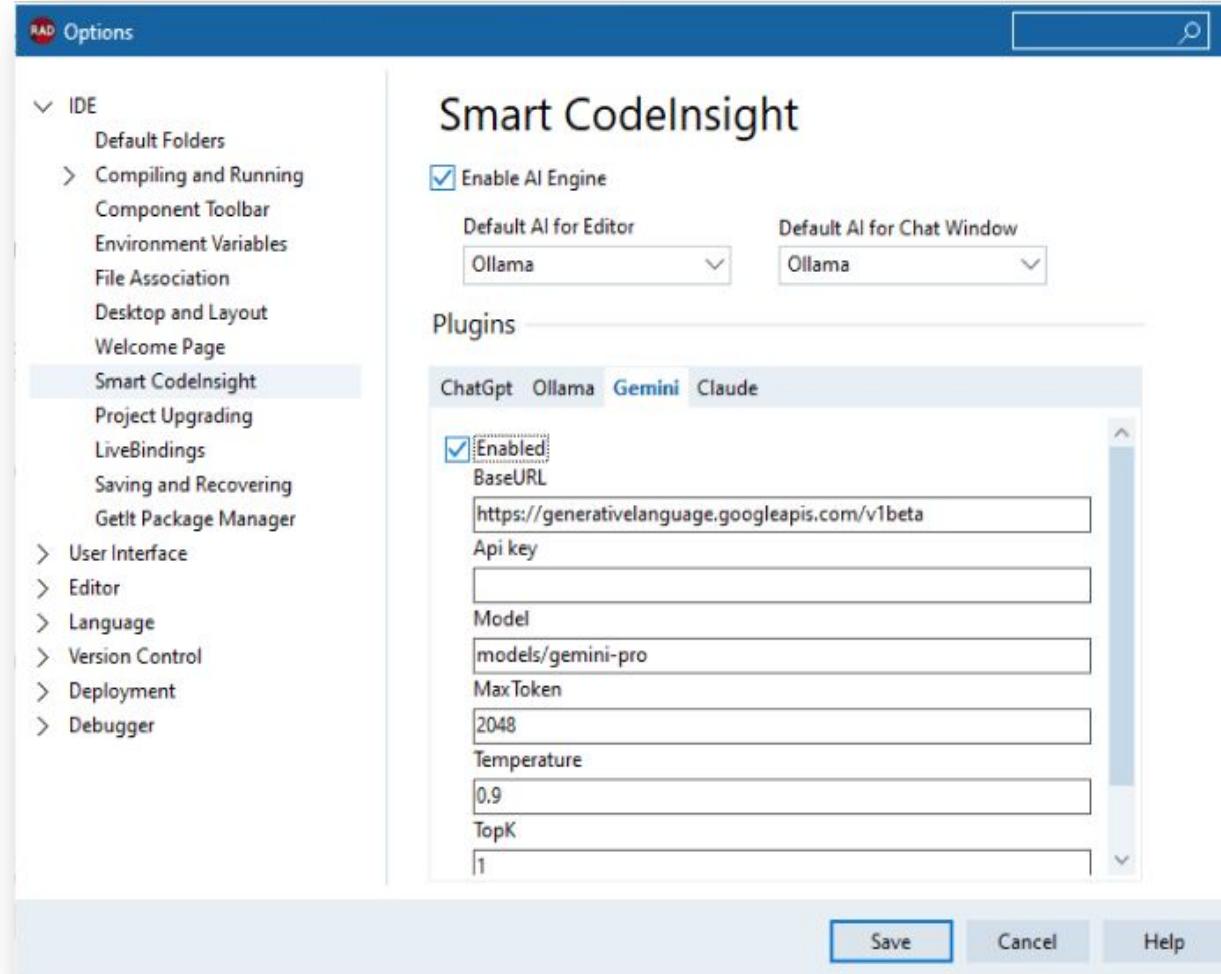
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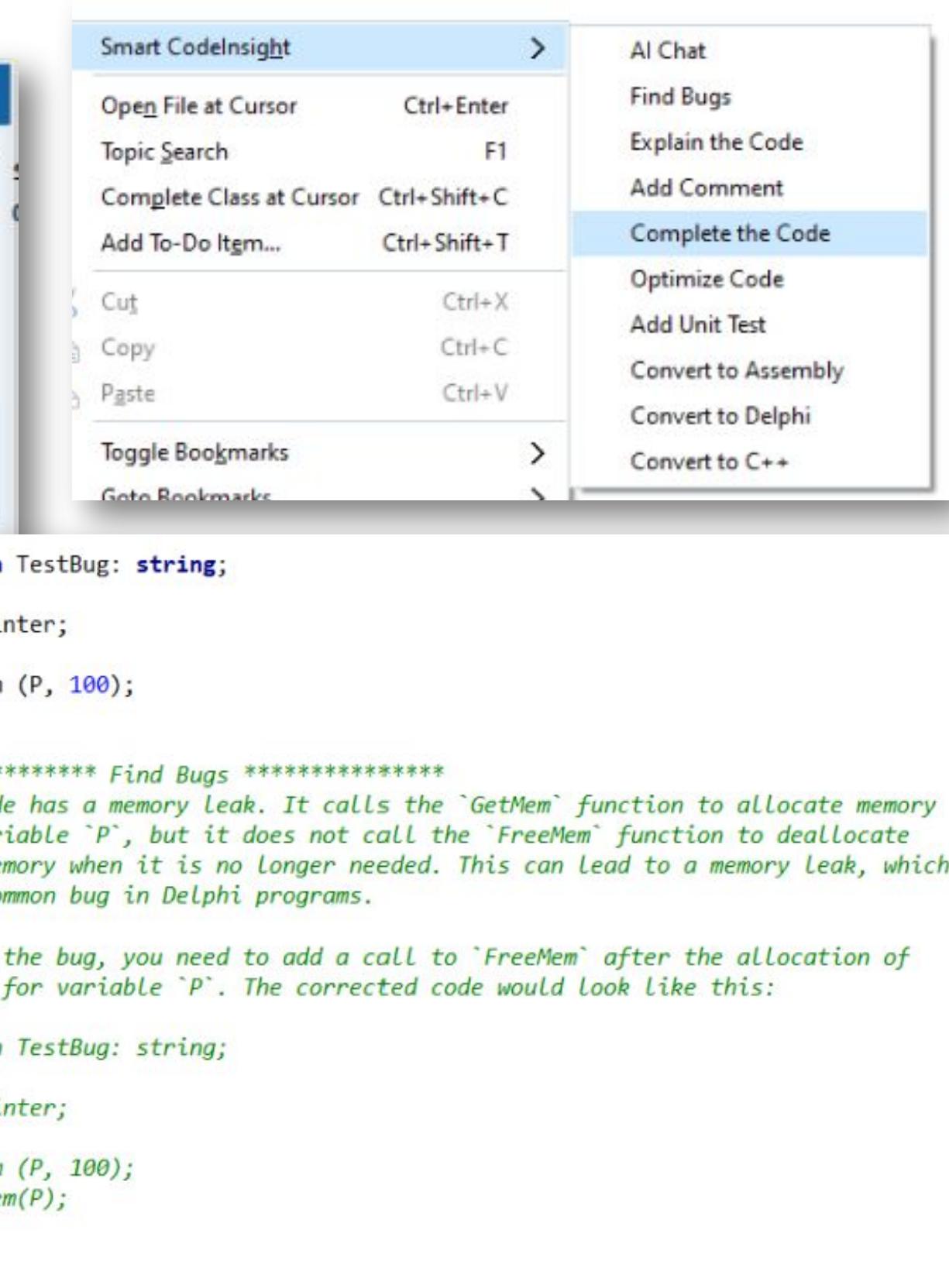
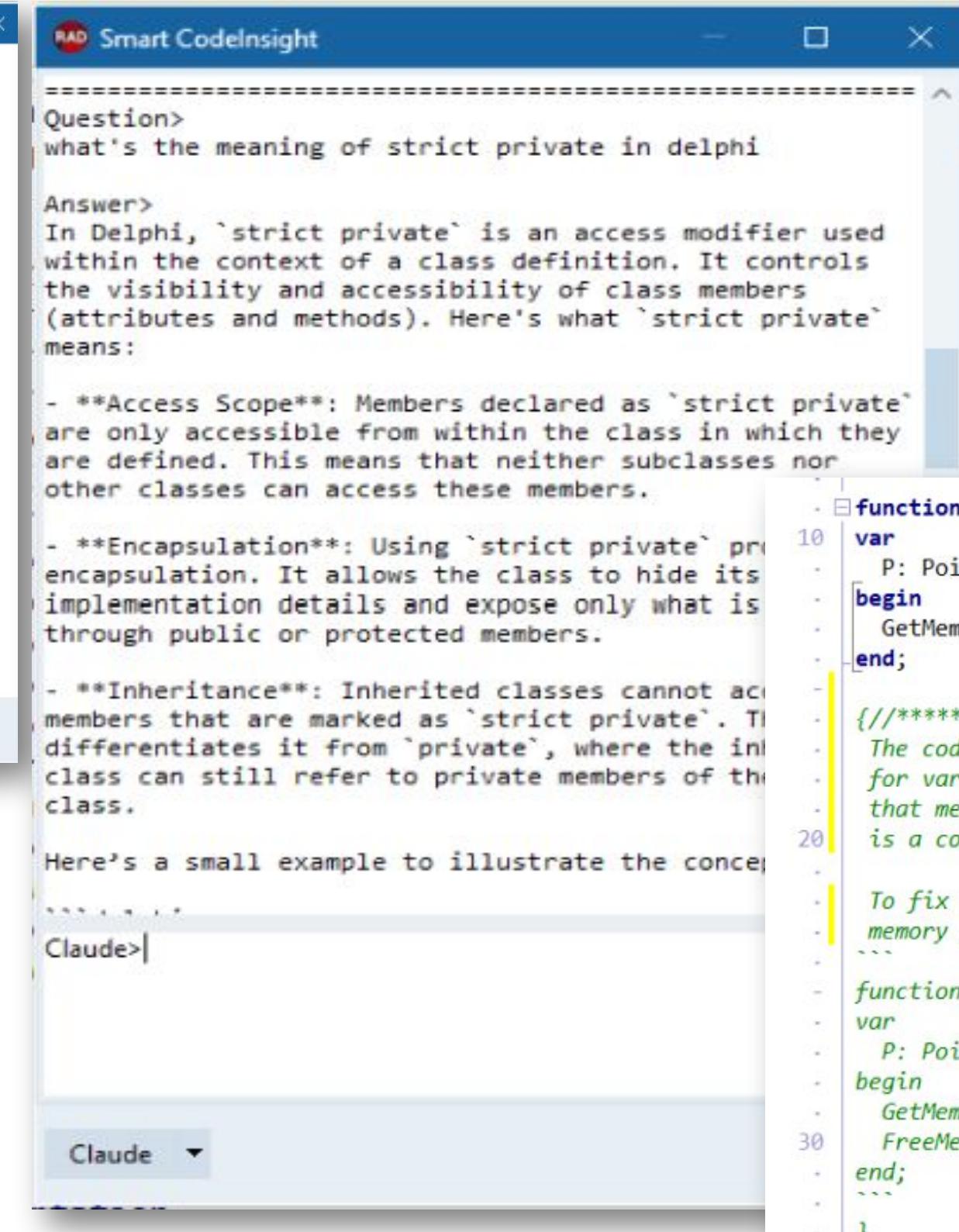
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Smart CodeInsight: AI Powered Coding



IDE: tools configuration,
chat window and editor
commands





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Editor: Focus Mode

Focus Mode leaves the IDE with
only the editor, to avoid
interruptions to *your flow* of
thoughts

C:\Users\work\Desktop\mazes\C++\DistanceDijkstra.cpp

```
std::map<std::shared_ptr<Cell>, int> GetDistances(Grid& grid) {
    std::map<std::shared_ptr<Cell>, int> distances;
    for (auto cell : grid.EachCell()) {
        distances[cell] = -1;
    }

    std::vector<std::shared_ptr<Cell>> frontier;
20
    // Start cell is always bottom left - arbitrary
    auto start = grid.GetCell(grid.Rows()-1, 0);
    frontier.push_back(start);
    distances[start] = 0;

    while (!frontier.empty()) {
        std::vector<std::shared_ptr<Cell>> newFrontier;

        for (auto cell : frontier) {
            for (auto link : cell->Links()) {
                if (distances[link] == -1) {
                    distances[link] = distances[cell] + 1;
                    newFrontier.push_back(link);
                }
            }
        }

        frontier.clear();
39
        frontier = newFrontier;
40    }

    return distances;
}

void Dijkstra::CalcDistance(Grid& grid) {
    std::map<std::shared_ptr<Cell>, int> distances(GetDistances(grid));

    for (auto kv : distances) {
        kv.first->Distance = kv.second;
    }
50
}

std::shared_ptr<Cell> MinLinkedNeighbour(std::shared_ptr<Cell> cell,
    std::map<std::shared_ptr<Cell>, int> distances)
{
    std::shared_ptr<Cell> res(nullptr);

    int maxDist = distances[cell];
    for (auto n : cell->Links()) {
        if (distances[n] < maxDist) {
            maxDist = distances[n];
            res = n;
        }
    }

    return res;
}
60
}

void Dijkstra::CalcSolve(Grid& grid) {
    for (auto cell : grid.EachCell()) {
        cell->Distance = -1;
    }
70
}
```



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Editor: Scrollbar Annotations

Editor Scrollbar Annotations

- ✓ See at a glance sections of code modified, with bookmarks, errors, warnings...

Delphi Inline Assembly Highlighting

Delphi LSP: code completion in editor colors
(even the horrible ones!)

A screenshot of the Delphi IDE's code editor. The main window shows Delphi Pascal code:

```
procedure TForm1.FormCreate(Sender: TObject);
begin
  Self.
end;
procedure FormCreate(Sender: TObject);
procedure ArrangeIcons;
procedure Cascade;
procedure Next;
procedure Previous;
procedure Tile;
property ActiveMDIChild: TForm;
```

The scrollbar on the right has annotations: '^' above the top arrow and 'v' below the bottom arrow. A tooltip is displayed over the scrollbar, listing code completion items: FormCreate, ArrangeIcons, Cascade, Next, Previous, Tile, and ActiveMDIChild. At the bottom of the screen, a status bar shows keyboard shortcuts: ✓ Tab Enter, ← ↑ ↓ →, X Space "# \$ ' () * + , - . : ; < = > [] { } Esc →, and a wrench icon.

Split Editor Improvements around resizing,
stability and IDE toolbars quality



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WebStencils Template Library

Server-side script-based integration and processing of HTML files for WebBroker and RAD Server. You can develop modern websites

- ✓ Based on [any JavaScript library](#), CSS, and web technology
- ✓ Powered by the data extracted and processed by a RAD Studio [server-side application](#)

```
1 <div class="gallery">
2   @ForEach People {
3     <div class="item">
4       
5       <span>@loop.name</span>
6     </div>
7   }
8 </div>
```

Foundation for [HTMX](#) as a web development solution.

- ✓ HTMX pages benefit from server-side code generation and hook into REST servers for content updates

```
<h4>Obj2</h4>
@if obj2.ValueBelowTen {
  <p>@obj2.name <span> has a
}
```



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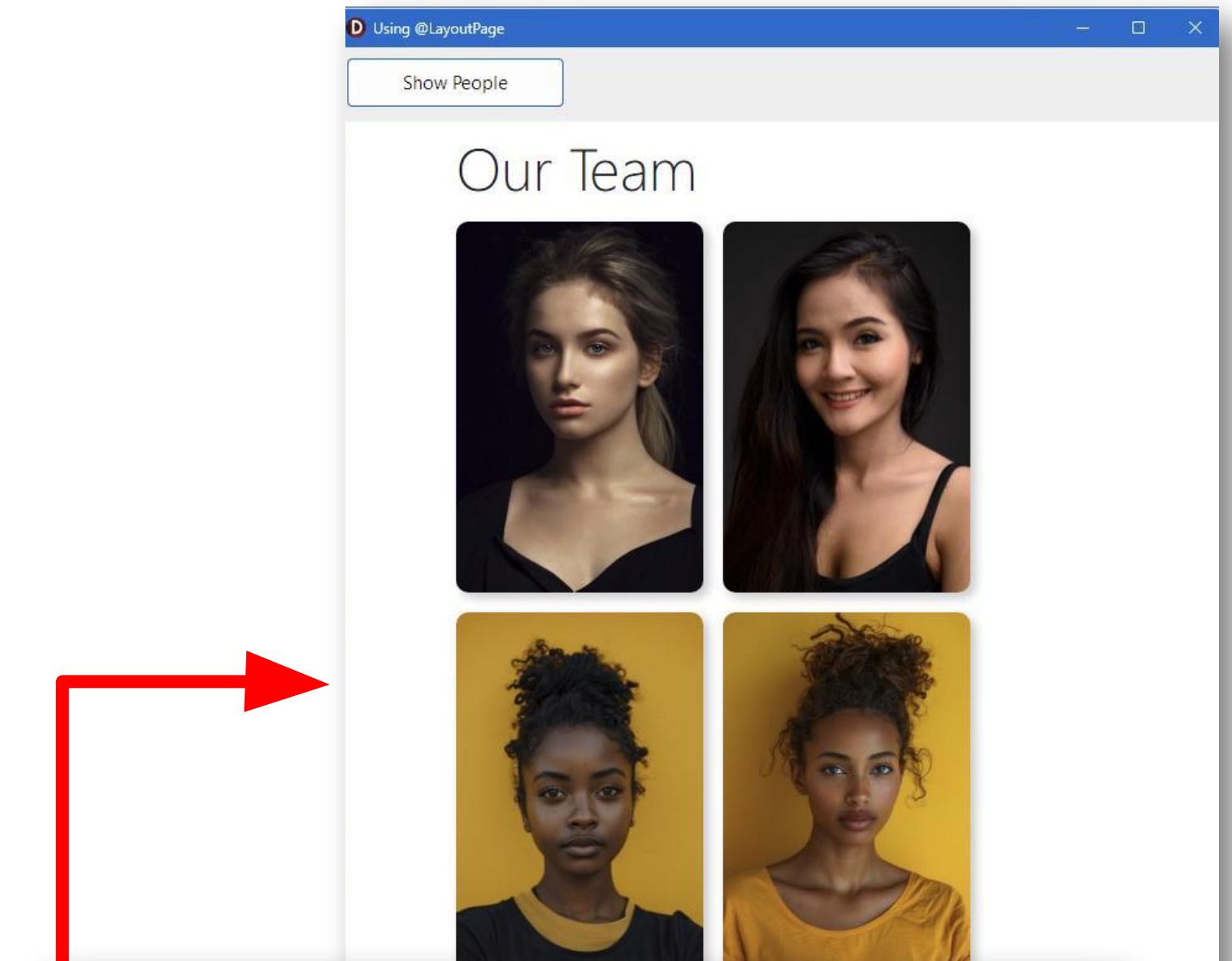
WebStencils

Server-side script-based integration and processing of HTML

- ✓ A template engine
- ✓ For WebBroker and RAD Server

Core Web Scripting Syntax

- ✓ Used @ for symbols and {} for blocks
- ✓ @object.value to read data from server objects
- ✓ @keywords for special processing
- ✓ Supports simple expressions



```
<div class="gallery">
  @ForEach People {
    <div class="item">
      
    </div>
  }
</div>
```



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WebStencils

Data access for the script

- ✓ RTTI based (but not only)
- ✓ `@object.value`
- ✓ `OnValue` event handler
- ✓ Use objects, lists, datasets registered as
`script variables`
- ✓ Modules Variables (attributes)

The screenshot shows a web interface with a dark header bar containing navigation links: Project (highlighted in purple), Home, Companies, Company, and Test. Below the header is a section titled "Companies" with a table listing three entries:

Company	Location
Kauai Dive Shoppe	US
Kapaa Kauai	HI
Unisco	Bahamas
Freeport	
Sight Diver	Cyprus
Kato Paphos	



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WebStencils

Keywords

@query - access HTTP parameters

@* . . ***@** - comment

@if [not] object.value { ... }

[@else { ... }]

@ForEach (var object in list) { ... }

@ForEach object { ... }

@Import

@Scaffolding

The screenshot shows a web browser window titled "TMS Web Project" with the URL "localhost:8000/WatchlistClient/index.html". At the top, there is a "Filter" input field and a "Search" button. Below the filter, there are two movie entries:

- Star Trek**: An image of the Star Trek (2009) movie poster is shown. The poster features the main cast: Captain Kirk, Spock, and Uhura. The title "STAR TREK" is prominently displayed. The description reads: "The fate of the galaxy rests in the hands of bitter rivals. One, James Kirk, is a delinquent, thrill-seeking Iowa farm boy. The other, Spock, a Vulcan, was raised in a logic-based society that rejects all emotion. As fiery instinct clashes with calm reason, their unlikely but powerful partnership is the only thing capable of leading their crew through unimaginable danger, boldly going where no one has gone before. The human adventure has begun again."
- Star Trek Beyond**: An image of the Star Trek Beyond movie poster is shown. The poster features the main cast in a dark, futuristic setting. The title "STAR TREK BEYOND" is at the bottom. The description reads: "The USS Enterprise crew explores the furthest reaches of uncharted space, where they encounter a mysterious new enemy who puts them and everything the Federation stands for to the test."



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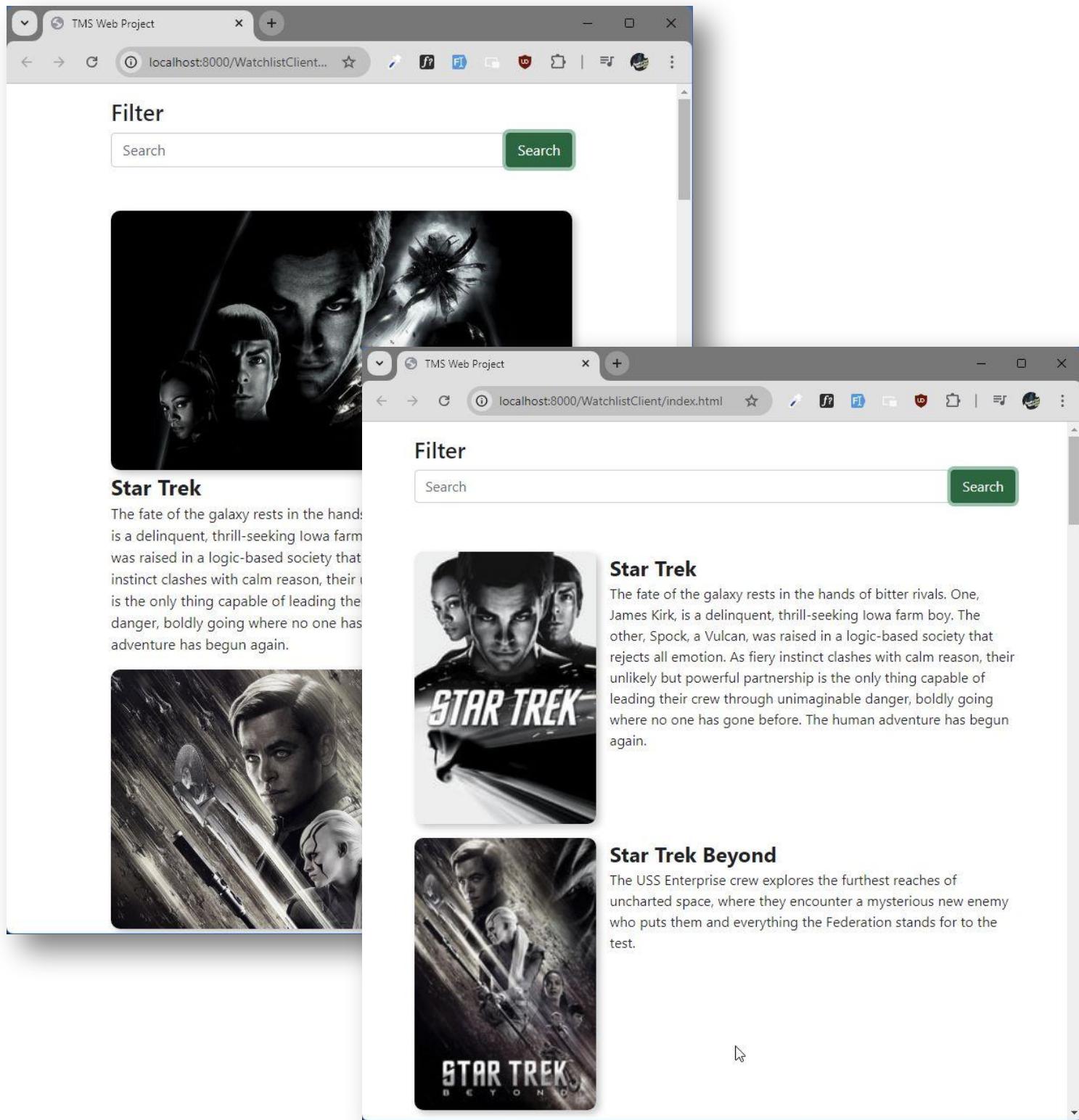


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WebStencils

Template structure



@LayoutPage

Indicates which template file to use

@RenderBody

Placeholder in a template file where to place actual content

@ExtraHeader { ... }

Optional block of code to be added as extra header information

@RenderHeader

Where to add the extra header of the page



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WebStencils Template Library Components

TWebStencilsProcessor

Processes an individual file

Standard WebBroker Producer

Properties InputFilename, InputLines...

TWebStencilsEngine

Provides shared settings to individual

TWebStencilsProcessor components

Create WebStencilsProcessor components if needed

Properties: Dispatcher of type **IWebDispatch**,

RootDirectory, **DefaultFileExt**...

```
<div class="gallery">
  @ForEach People {
    <div class="item">
      
      <span>@loop.name</span>
    </div>
  }
</div>
```



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WebStencils

Another way to create powerful, modern, gorgeous, dynamic web content

The screenshot displays two windows from RAD Studio 12.2. On the left, a web browser window titled "WebStencils demo" shows the "RAD WebStencils" demo project. The page features a large red circular logo with the word "RAD" in white, followed by the text "WebStencils". Below this, a paragraph reads: "Welcome to the WebStencils demo project. Feel free to navigate through the multiple menu options as well as analyze the code that involve the creation of this website." At the bottom are two buttons: "See code examples" and "HTMX demo". On the right, a terminal window titled "C:\Users\antonio\Documents\" shows the command-line interface for the WebStencils application. It displays a grid of characters representing a stencil pattern, followed by a welcome message: "Welcome to the WebStencils demo!", and status information: "Starting HTTP Server on port 8080" and "Ready! Access http://localhost:8080 in your browser". A section titled "Enter a Command:" lists several commands with orange diamond icons:

- "start" to start the server
- "stop" to stop the server
- "set port" to change the default port
- "status" for Server status
- "help" to show commands
- "exit" to close the application



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C++Builder Visual Assist Integration

The C++Builder **Visual Assist** integration has been expanded with three **new** refactorings

- Introduce Variable
- Create From Usage
- Extract Method

whole tomato

Visual Assist

Plus significant **quality** and **stability** improvements



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Improved Mobile Development

Significant improvements for Delphi mobile development

Apple platforms

- Linker updated to the most recent version
- Link iOS static libraries written in Xcode, like Firebase iOS SDK

Android support

- Options to compress Dex files and compress native library files
- The **targetSdkVersion** of the manifest file can be configured in the IDE
- Import Android libraries ('.aar' files)

Works with the Facebook SDK for Android and Firebase Analytics

The background features a vibrant, abstract design composed of smooth, flowing curves in shades of orange, yellow, and red. These waves create a sense of motion and depth across the entire frame.

Quality



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Debugger Quality

- ✓ Several improvements in the various RAD Studio debuggers
- ✓ Delphi debugger handles repeated inline variables with the same name
- ✓ Improved the debugger error handling and the remote debuggers communication timeouts.



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DelphiLSP Quality

The DelphiLSP engine improvements

- ✓ **Symbol Hints** Hints work on most symbols in the class interface, including fields (was not available in 12.1)
- ✓ **Local Constants and Variables** Hovering over local constants and variables can now resolve their definitions
- ✓ **Forwarded Type Declarations** The engine now resolves forwarded type declarations in some cases

A screenshot of a DelphiLSP code editor window. The code is:

```
1 unit Unit2;
2
3 interface
4
5 uses
6   Winapi.Windows, Winapi.Messages, System.SysUtils, Sys
7   Vcl.Controls, Vcl.Forms, Vcl.Dialogs, Vcl.Menus;
8
9 type
10  TForm2 = class(TForm)
11    MainMenuItem: TMainMenu;
12
13  var
14    Form2: TForm2;
15
16  implementation
17
18  {$R *.dfm}
19
20 end.
```

A tooltip is displayed over the line `var MainMenuItem: TMainMenu;`. The tooltip shows `var TForm2.MainMenuItem: TMainMenu - Unit2.pas (11)`, indicating that the engine has resolved the forwarded type declaration `TMenuItem` to its definition in `Unit2.pas`.



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Delphi RTL, VCL, and FireMonkey Quality

Delphi RTL

- New **TParallelArray** Class
- New **TOrderedDictionary** Class
- Support for the **REG_NONE** type in **TRegistry** (key with no type)

VCL

- Primarily quality work around frames scaling, **FormsTabBar**, styling issues, High DPI issues. Quite extensive work.

FireMonkey

- Further work on Android deployment, intensive quality work for many areas, with additional focus on edit controls on mobile



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RAD Server Improvements

- ✓ WebStencils template engine support 🔥🥳
- ✓ RAD Server Swagger Documentation enhancements
 - New **IEMSApiDocumentService** interface
 - Customization of the metadata in the generated swagger doc files
 - New **IEMSApiDocumentFilter** interface
 - Filter the API being documented
 - Swagger support for YAML format in addition to JSON
 - **APIDocAttributes** demo updated to use Delphi multiline string literals



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Quality Overall

Customer reports fixed

- Addressed approximately 400 customer bug reports
- Implemented 28 feature requests
- Reported on the old or the new portal

Addressed issues in all areas, the top ones are

- IDE and IDE quality including toolbars for high DPI
- VCL
- FireMonkey
- Compiler\C++
- RTL\Delphi
- Compiler\Delphi

And now...

**How to scare the
translators...**





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Today we are talking about version 12

The number 12 is an ‘easy’ number,
no controversy

But there is a lot of talk about
whether or not there will be a version
13...





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Will there be a version 13?

In some countries, the number 13 is considered **unlucky**

Some people are actually **scared** of the number 13

In English there is a special word for “**being scared of the number 13**”





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Will there be a version 13?

The medical name for being scared of the number 13 is..
(are you ready, translators?) 😊

Triskaidekaphobia





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What is the problem with version 13?

At Embarcadero we do not have triskaidekaphobia

So, we're *probably* going to just have a version 13

Sorry if you have triskaidekaphobia, it is going to be ok 😊

Have I said triskaidekaphobia enough yet?





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Q & A



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Thank You!