ABAP in Eclipse enhanced by Open Source Plugins

Speeding up your development flow

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Frankfurt am Main

Parts of the presentation

1. **Why** an additional feature

(2. **What** the feature achieves)

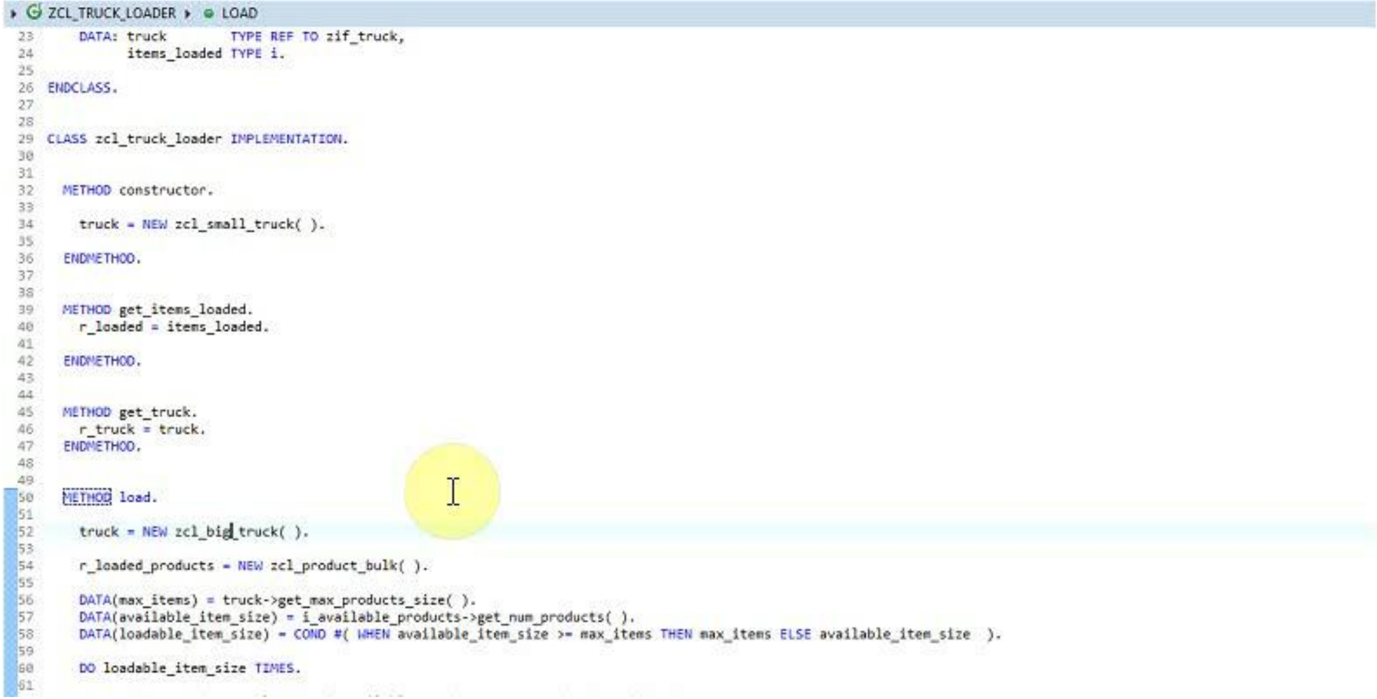
3. **How** it works

The seven features

1. Automatic Pretty Print
2. Colored Projects
3. Automatic run of Quality tools
4. Favorite transaction shortcuts
5. Inline Code information
6. Inline Debug information
7. Calling abapGIT with a shortcut

Disclaimer: Whether you see them as the seven world wonders or the seven deadly sins is up to you!

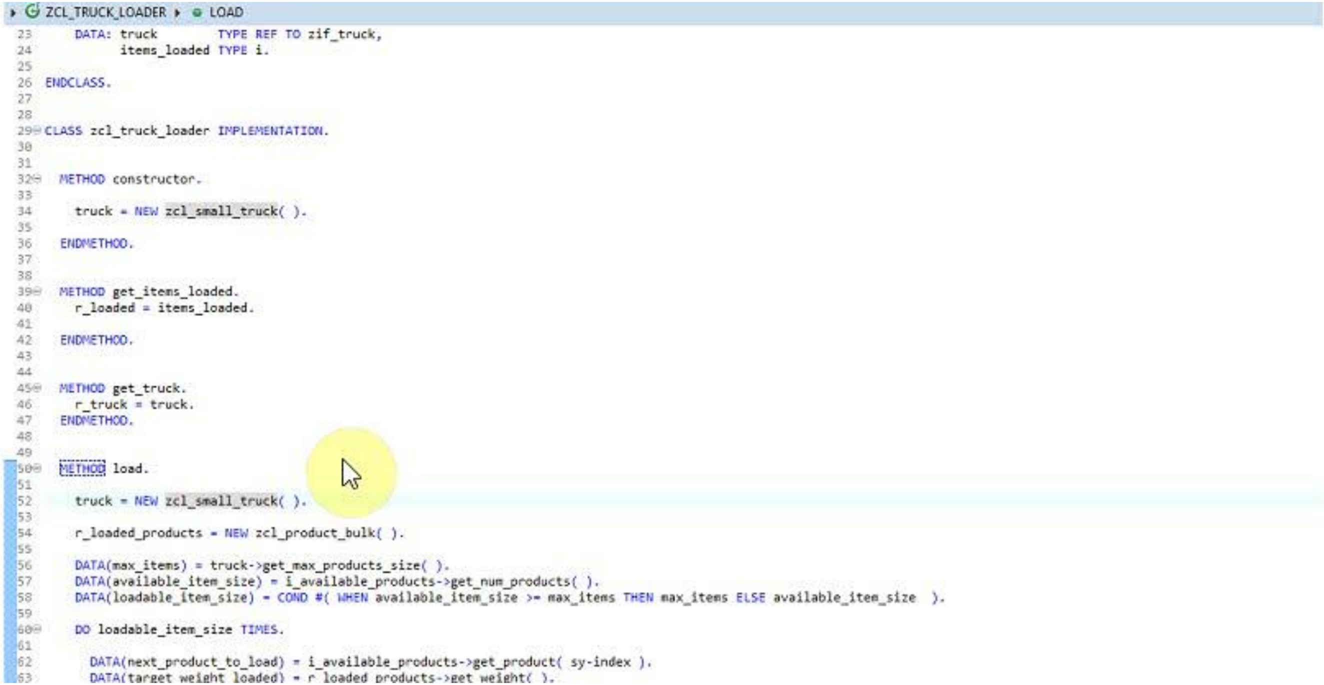
1 Automatic Pretty Print



```
   DATA: truck        TYPE REF TO zif_truck,
         items_loaded TYPE i.

ENDCLASS.


CLASS zcl_truck_loader IMPLEMENTATION.


  METHOD constructor.

    truck = NEW zcl_small_truck( ).

  ENDMETHOD.


  METHOD get_items_loaded.
    r_loaded = items_loaded.

  ENDMETHOD.


  METHOD get_truck.
    r_truck = truck.
  ENDMETHOD.


  METHOD load.

    truck = NEW zcl_big_truck( ).

    r_loaded_products = NEW zcl_product_bulk( ).

    DATA(max_items) = truck->get_max_products_size( ).
    DATA(available_item_size) = i_available_products->get_num_products( ).
    DATA(loadable_item_size) = COND #( WHEN available_item_size >= max_items THEN max_items ELSE available_item_size  ).

    DO loadable_item_size TIMES.
```

Why?

1 Automatic Pretty Print

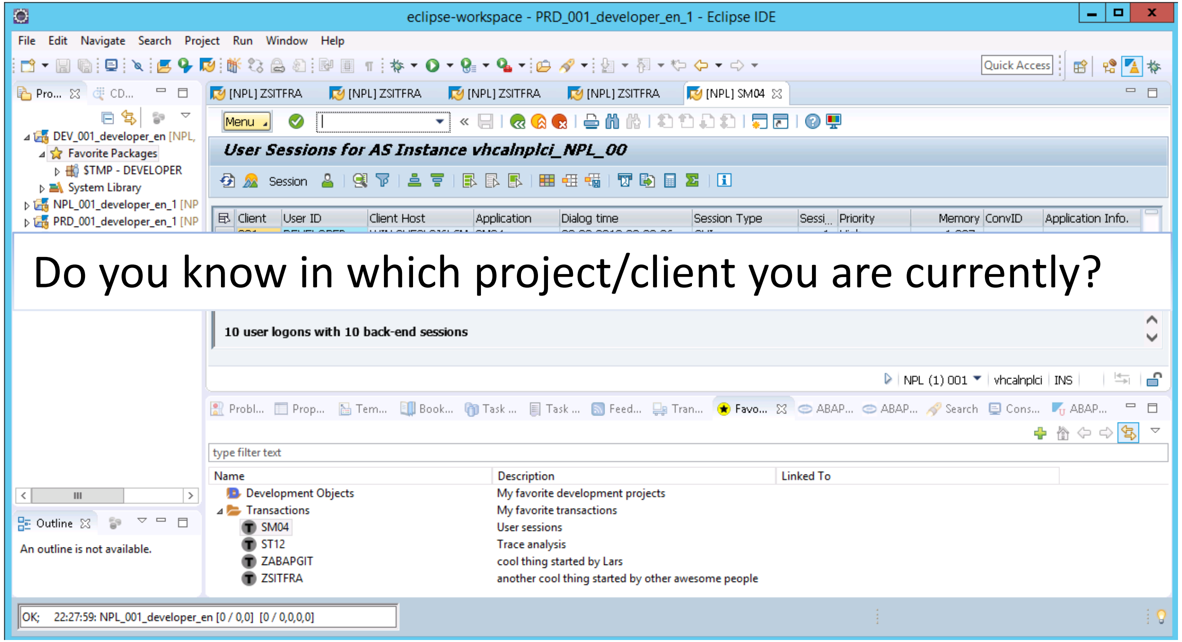


```
    DATA: truck        TYPE REF TO zif_truck,
          items_loaded TYPE i.

ENDCLASS.


CLASS zcl_truck_loader IMPLEMENTATION.


  METHOD constructor.

    truck = NEW zcl_small_truck( ).

  ENDMETHOD.


  METHOD get_items_loaded.
    r_loaded = items_loaded.

  ENDMETHOD.


  METHOD get_truck.
    r_truck = truck.
  ENDMETHOD.


  METHOD load.

    truck = NEW zcl_small_truck( ).

    r_loaded_products = NEW zcl_product_bulk( ).

    DATA(max_items) = truck->get_max_products_size( ).
    DATA(available_item_size) = i_available_products->get_num_products( ).
    DATA(loadable_item_size) = COND #( WHEN available_item_size >= max_items THEN max_items ELSE available_item_size  ).

    DO loadable_item_size TIMES.

      DATA(next_product_to_load) = i_available_products->get_product( sy-index ).
      DATA(target_weight_loaded) = r_loaded_products->get_weight( ).
```

How?

2 Coloring your ABAP projects

Why?


eclipse-workspace - PRD_001_developer_en_1 - Eclipse IDE
File Edit Navigate Search Project Run Window Help
Quick Access
Pro... CD...
DEV_001_developer_en [NPL,
Favorite Packages
$TMP - DEVELOPER
System Library
NPL_001_developer_en_1 [NP
PRD_001_developer_en_1 [NP
[NPL] ZSITFRA
[NPL] ZSITFRA
[NPL] ZSITFRA
[NPL] ZSITFRA
[NPL] SM04
Menu
User Sessions for AS Instance vhcalnplci_NPL_00
Session
Client
User ID
Client Host
Application
Dialog time
Session Type
Sessi...
Priority
Memory
ConvID
Application Info.
NPL (1) 001
vhcalnplci
INS
Outline
Probl... Prop... Tem... Book... Task ... Task ... Feed... Tran... Favo... ABAP... ABAP... Search Cons... ABAP...
type filter text

Do you know in which project/client you are currently?

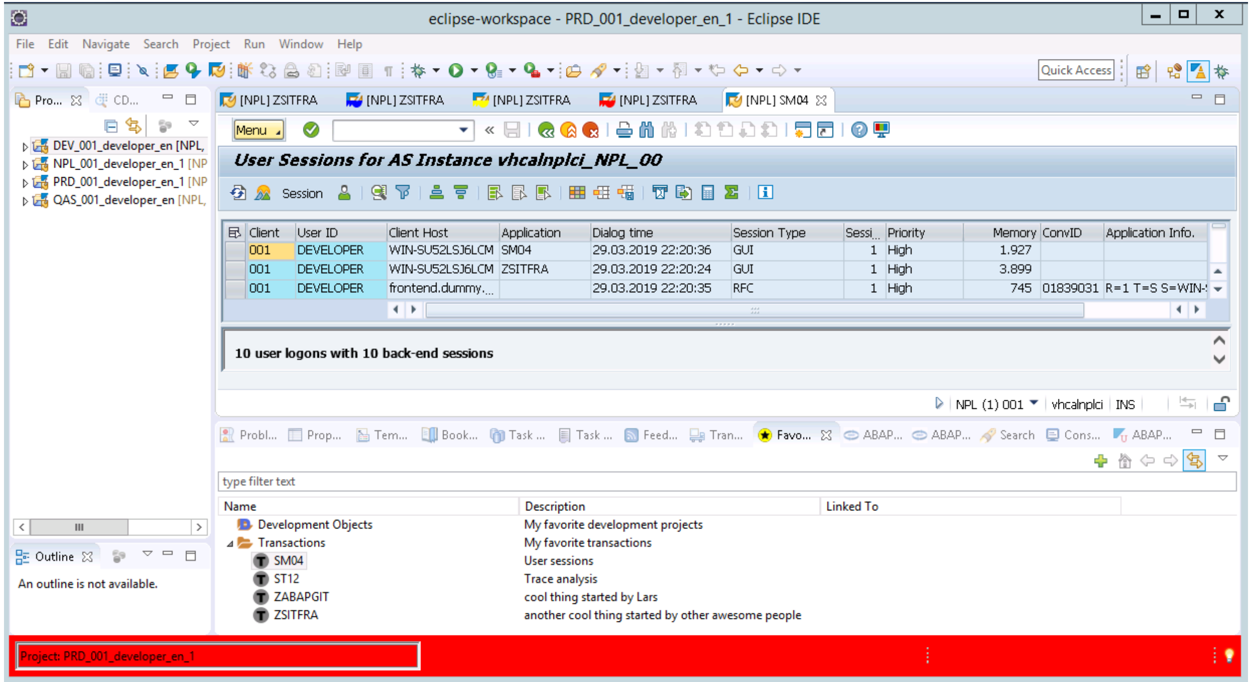
10 user logons with 10 back-end sessions

An outline is not available.

Name	Description	Linked To
Development Objects	My favorite development projects	
Transactions	My favorite transactions	
SM04	User sessions	
ST12	Trace analysis	
ZABAPGIT	cool thing started by Lars	
ZSITFRA	another cool thing started by other awesome people	

OK; 22:27:59: NPL_001_developer_en [0 / 0,0] [0 / 0,0,0,0]

2 Coloring your ABAP projects



User Sessions for AS Instance vhcalnplci_NPL_00

Client	User ID	Client Host	Application	Dialog time	Session Type	Sessi...	Priority	Memory	ConvID	Application Info.
001	DEVELOPER	WIN-SU52LSJ6LCM	SM04	29.03.2019 22:20:36	GUI	1	High	1.927		
001	DEVELOPER	WIN-SU52LSJ6LCM	ZSITFRA	29.03.2019 22:20:24	GUI	1	High	3.899		
001	DEVELOPER	frontend.dummy....		29.03.2019 22:20:35	RFC	1	High	745	01839031	R=1 T=S S=WIN-!

10 user logons with 10 back-end sessions

Name	Description	Linked To
Development Objects	My favorite development projects	
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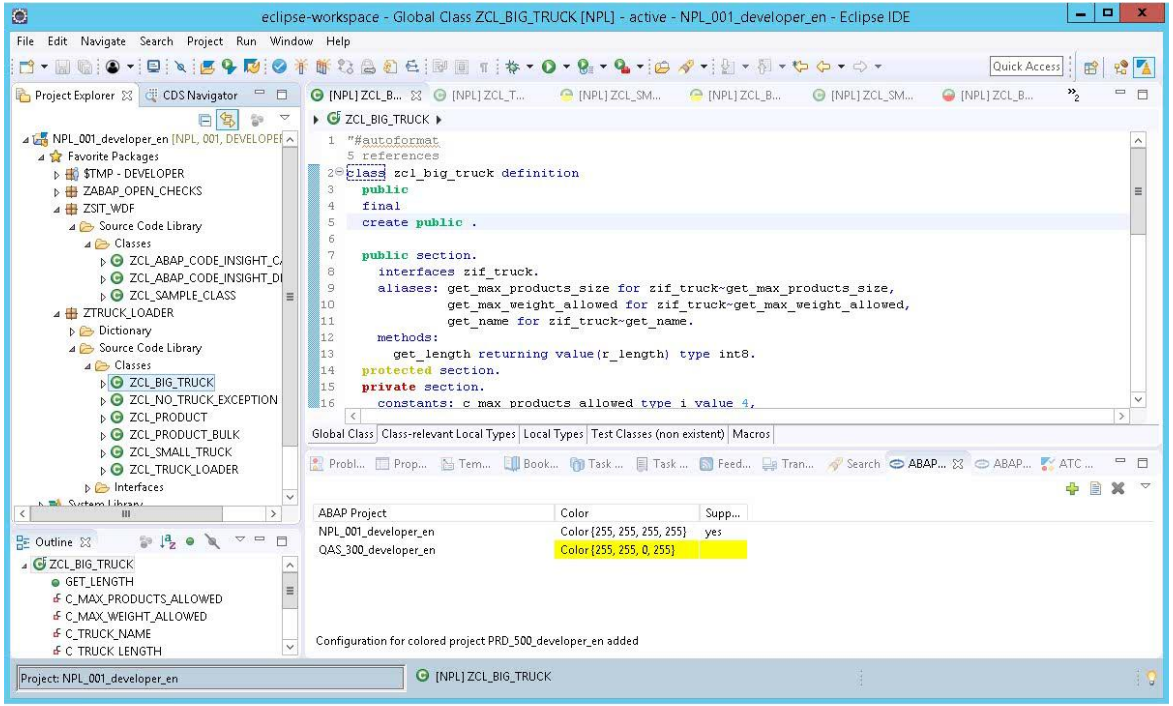
Project: PRD_001_developer_en_1

How?

2 Coloring your ABAP projects



```
"#autoformat
5 references
class zcl_big_truck definition
  public
  final
  create public .

  public section.
    interfaces zif_truck.
    aliases: get_max_products_size for zif_truck~get_max_products_size,
             get_max_weight_allowed for zif_truck~get_max_weight_allowed,
             get_name for zif_truck~get_name.
    methods:
      get_length returning value(r_length) type int8.
  protected section.
  private section.
    constants: c_max_products_allowed type i value 4,
```

ABAP Project	Color	Supp...
NPL_001_developer_en	Color {255, 255, 255, 255}	yes
QAS_300_developer_en	Color {255, 255, 0, 255}	

Configuration for colored project PRD_500_developer_en added

Project: NPL_001_developer_en

[NPL] ZCL_BIG_TRUCK

How?

3 **Saving time** by automating repetitive CI tasks

Why?

Area	Without CI	Manual CI tools	With abapCI
source code change	Equal		
Minimal mouse clicks or shortcuts necessary*)	1 1	**10** **4**	1 1
CI and source code quality	None	AbapUnit ATC checks Source code formatting (Delete not used vars)	AbapUnit ATC checks Source code formatting (Delete not used vars)
Developer mood	😊	😐	😊

*) base for calculation: one changed ABAP class

3 Saving time by automating repetitive CI tasks

What?

Existing ADT features:

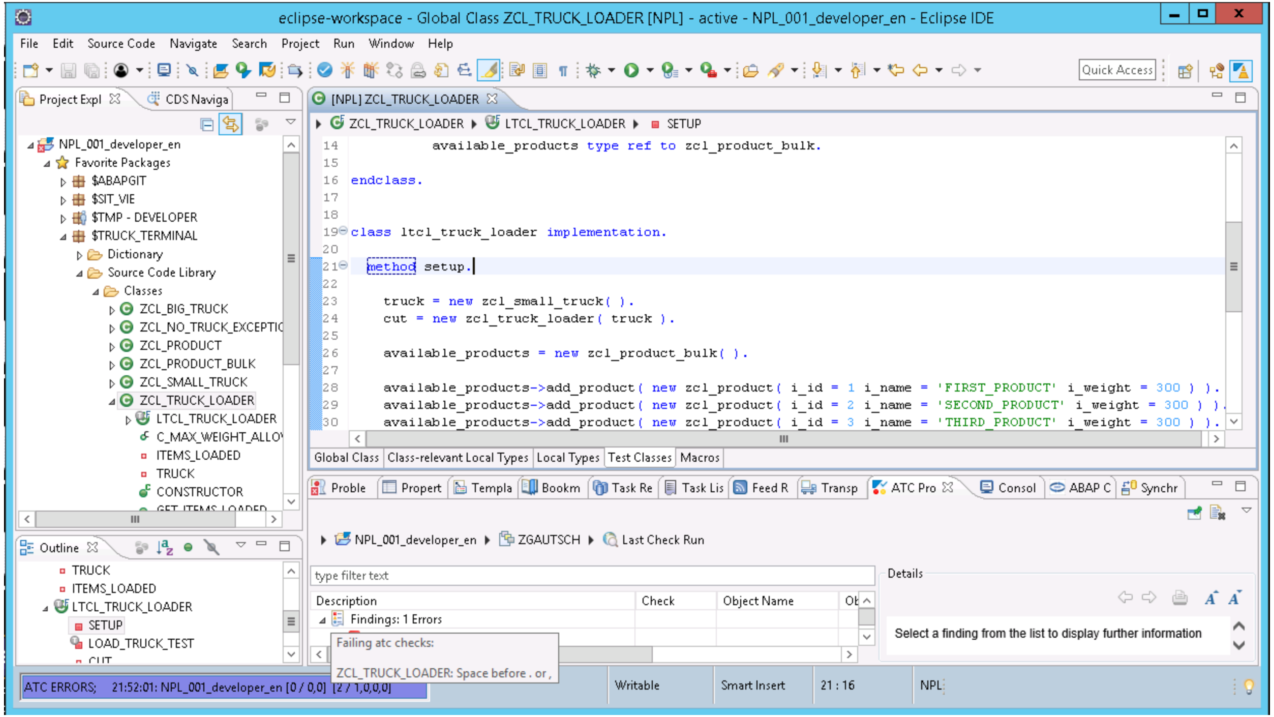
Unit test run
ABAP Testcockpit (ATC)

} are called by

ABAP CI Plugin

Target is only the automatic visualisation of the actual source code state after each activation by using existing ABAP in Eclipse features. For solving unexpected Unit test failures and cleaning up complicated ATC findings the powerful standard ABAP in Eclipse views are much better.

3 Displaying the actual state of the source code



```
            available_products type ref to zcl_product_bulk.

endclass.


class ltcl_truck_loader implementation.

  method setup.

    truck = new zcl_small_truck( ).
    cut = new zcl_truck_loader( truck ).

    available_products = new zcl_product_bulk( ).

    available_products->add_product( new zcl_product( i_id = 1 i_name = 'FIRST_PRODUCT' i_weight = 300 ) ).
    available_products->add_product( new zcl_product( i_id = 2 i_name = 'SECOND_PRODUCT' i_weight = 300 ) ).
    available_products->add_product( new zcl_product( i_id = 3 i_name = 'THIRD_PRODUCT' i_weight = 300 ) ).
```

Description	Check	Object Name	Ob
Findings: 1 Errors			

Failing atc checks:

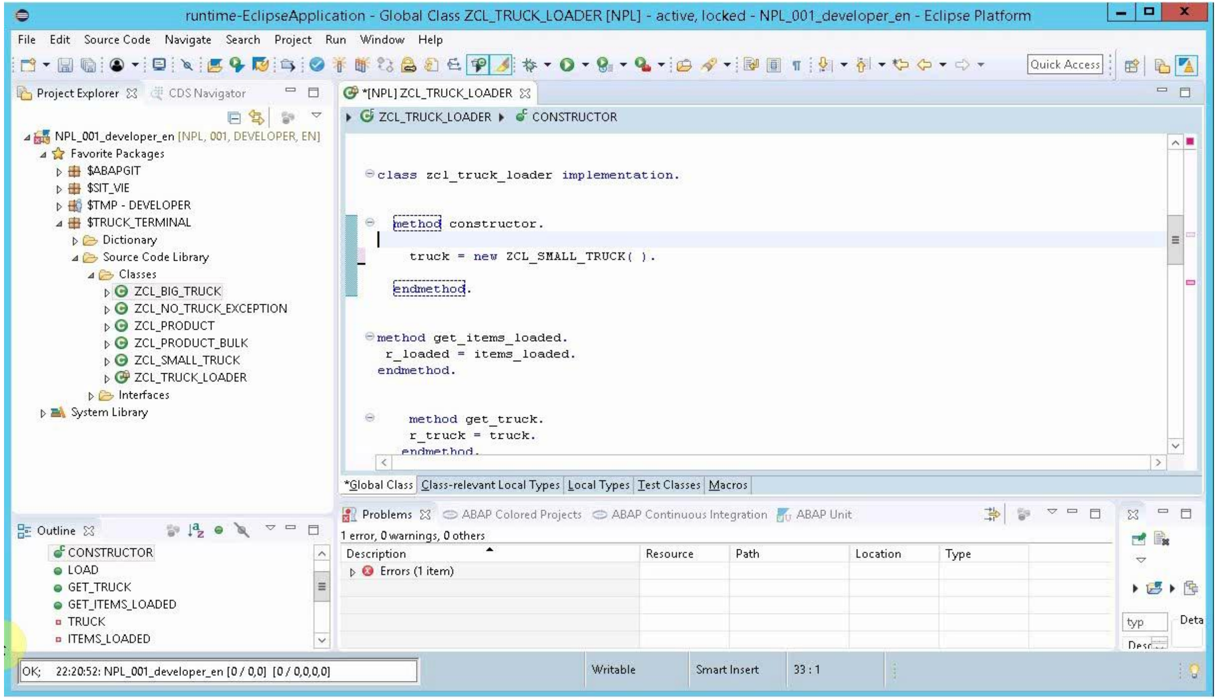
ZCL_TRUCK_LOADER: Space before . or ,

Select a finding from the list to display further information

ATC ERRORS; 21:52:01: NPL_001_developer_en [0 / 0,0] [2 / 1,0,0,0]

How?

3 Saving time by automating repetitive CI tasks



```
class zcl_truck_loader implementation.

  method constructor.

    truck = new ZCL_SMALL_TRUCK( ).

  endmethod.

method get_items_loaded.
  r_loaded = items_loaded.
endmethod.

    method get_truck.
    r_truck = truck.
  endmethod.
```

1 error, 0 warnings, 0 others

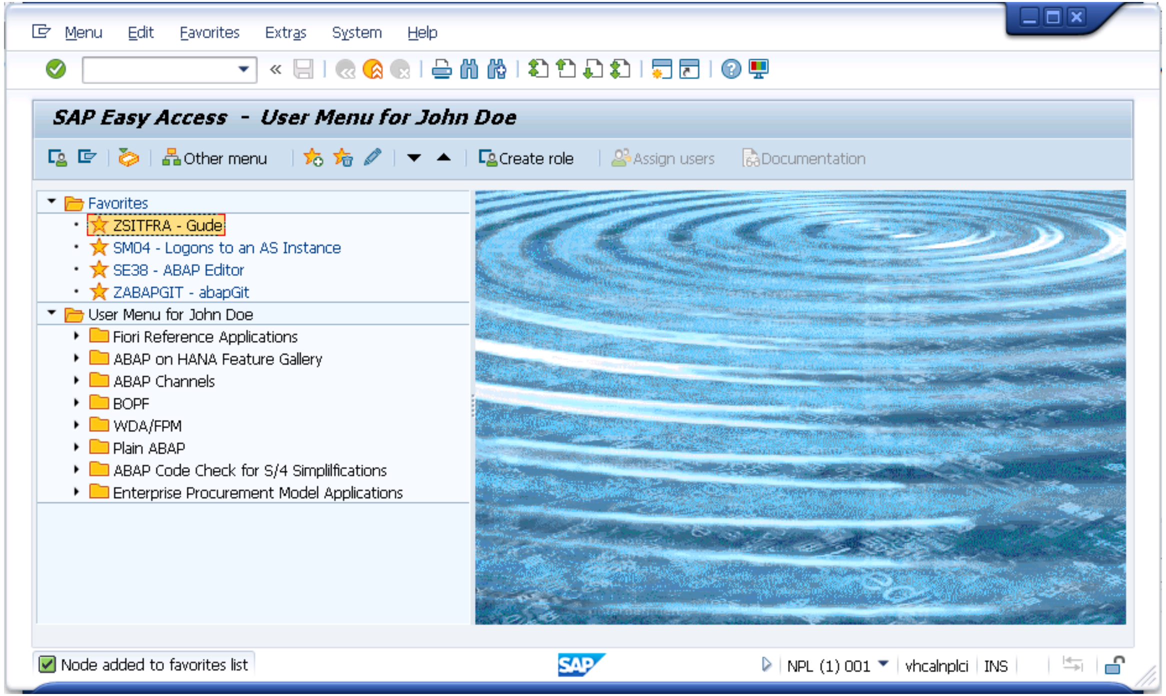
Description	Resource	Path	Location	Type
▸ ⊗ Errors (1 item)				

OK; 22:20:52: NPL_001_developer_en [0 / 0,0] [0 / 0,0,0,0]

Writable | Smart Insert | 33 : 1

How?

4 Favorite transaction list within ABAP in Eclipse



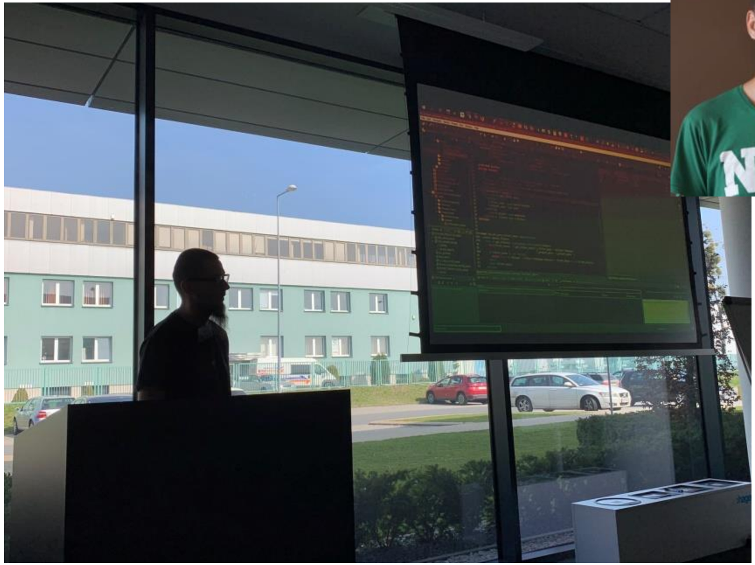
SAP Easy Access - User Menu for John Doe

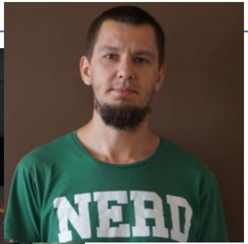
- Favorites
  - ZSITFRA - Gude
  - SM04 - Logons to an AS Instance
  - SE38 - ABAP Editor
  - ZABAPGIT - abapGit
- User Menu for John Doe
  - Fiori Reference Applications
  - ABAP on HANA Feature Gallery
  - ABAP Channels
  - BOPF
  - WDA/FPM
  - Plain ABAP
  - ABAP Code Check for S/4 Simplifications
  - Enterprise Procurement Model Applications

☑ Node added to favorites list

Why?

4 Favorite transaction list within ABAP in Eclipse





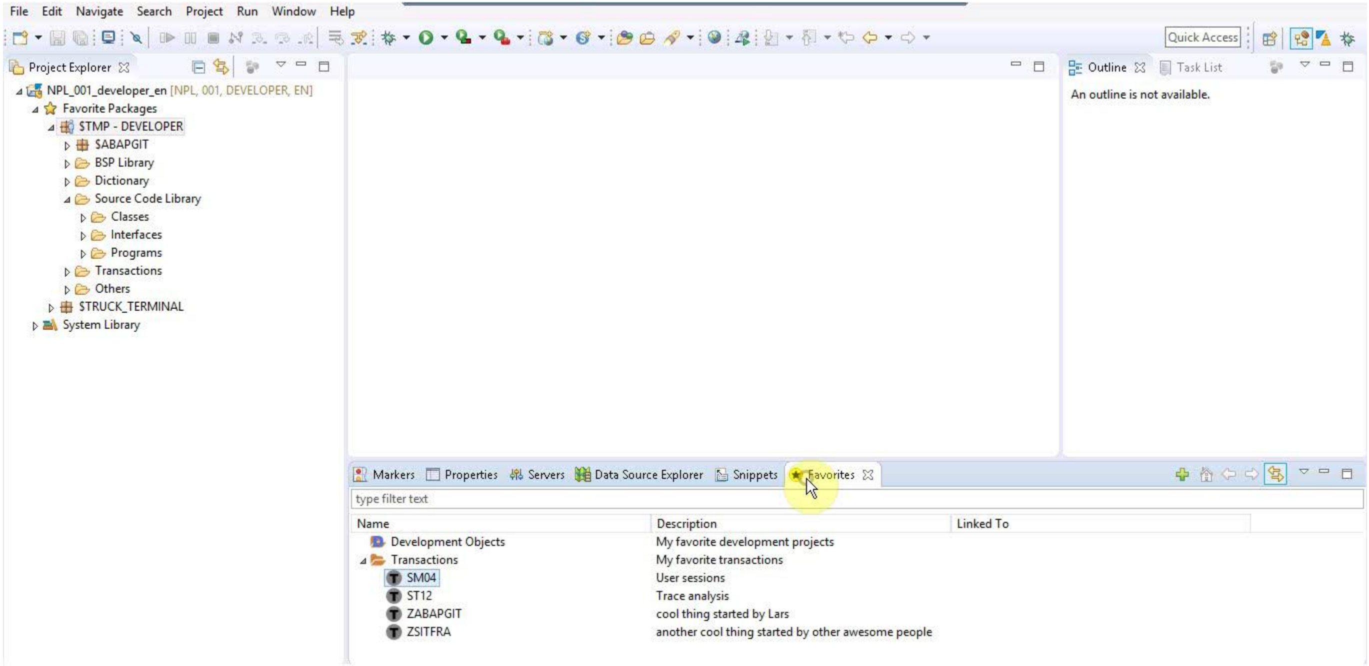
What?

Eclipse view to maintain

SAP GUI shortcuts and DEV objects

Plugin by Łukasz Pęgiel

4 Favorite transaction list within ABAP in Eclipse



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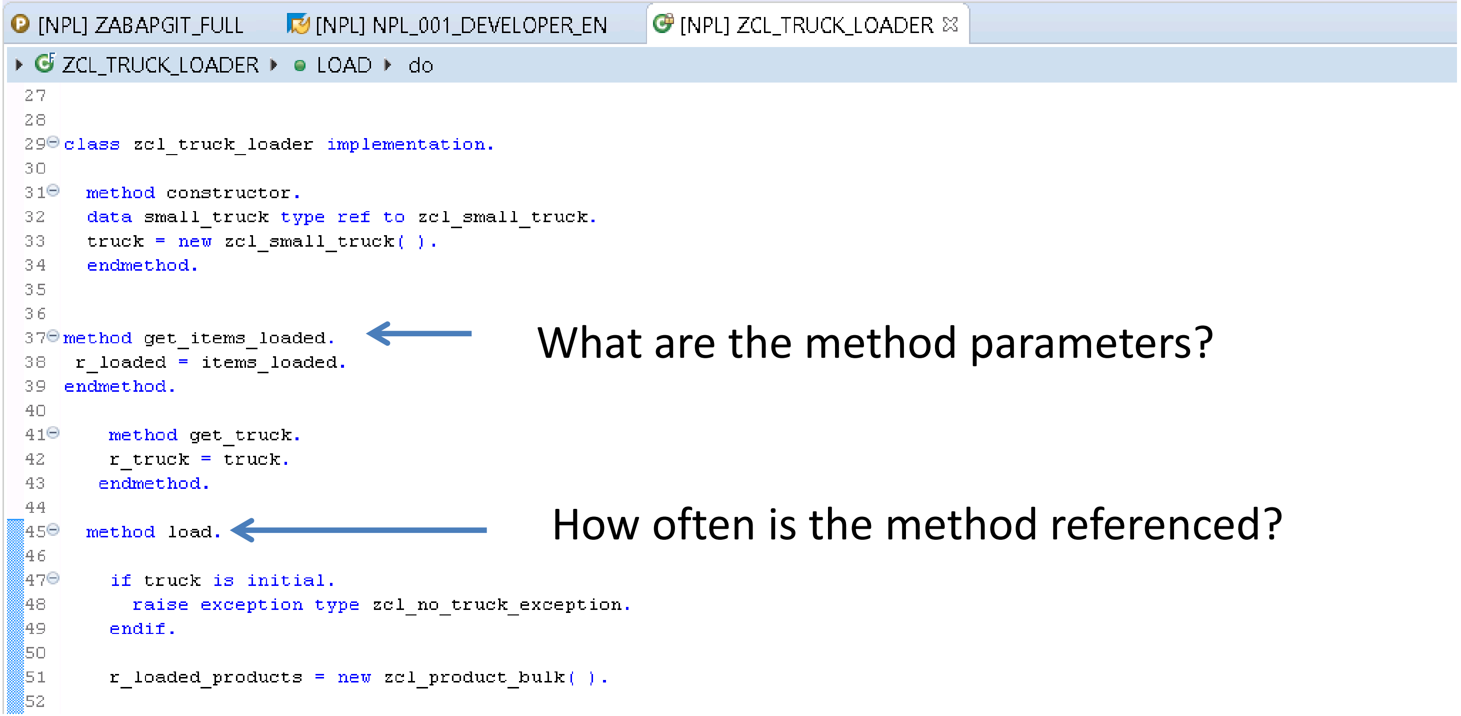
How?

5 Some code information is needed regularly



```

class zcl_truck_loader implementation.

  method constructor.
  data small_truck type ref to zcl_small_truck.
  truck = new zcl_small_truck( ).
  endmethod.


method get_items_loaded.
 r_loaded = items_loaded.
endmethod.

    method get_truck.
    r_truck = truck.
   endmethod.

  method load.

    if truck is initial.
      raise exception type zcl_no_truck_exception.
    endif.

    r_loaded_products = new zcl_product_bulk( ).

```

Why?

What are the method parameters?

How often is the method referenced?

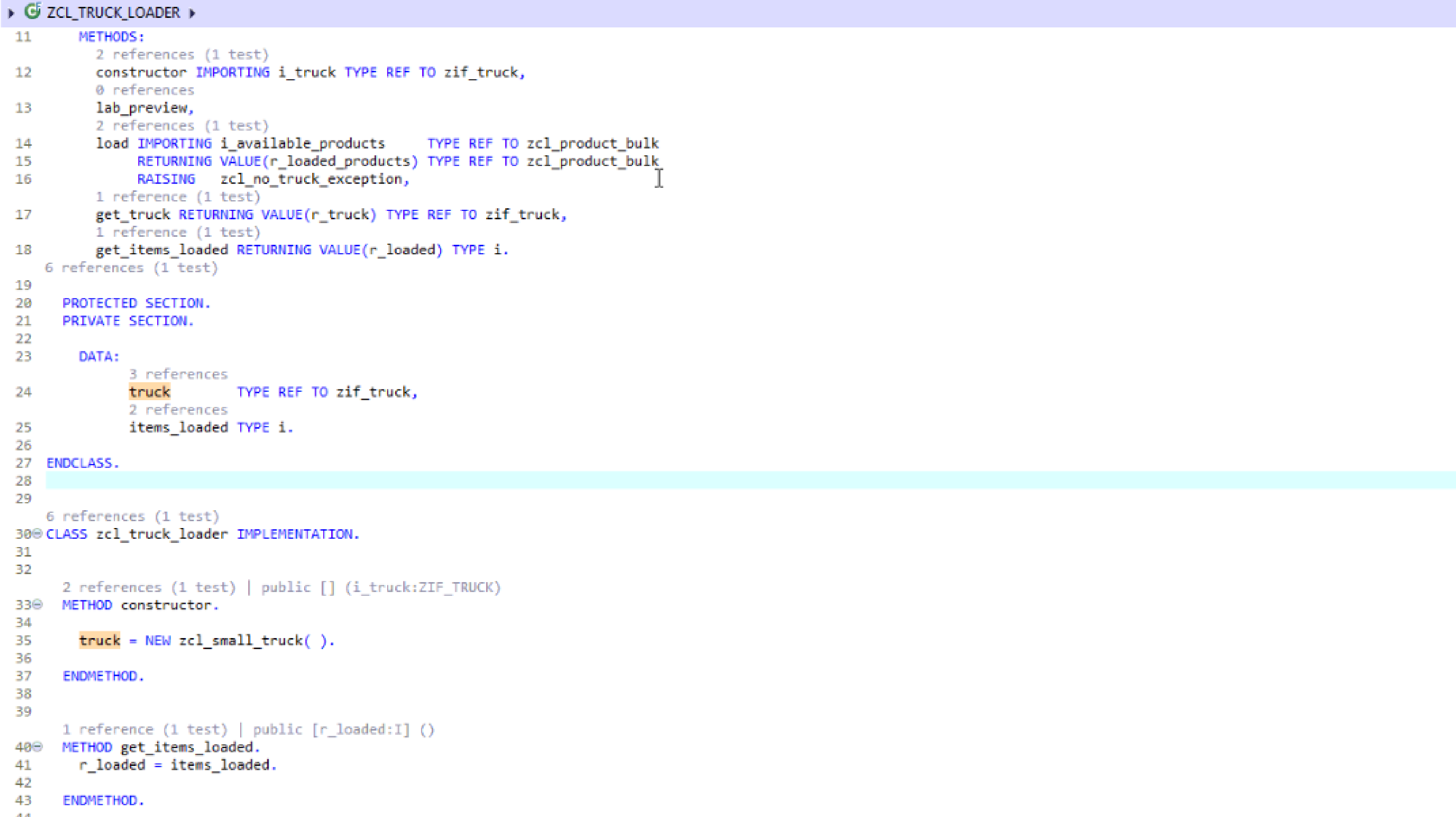
5 Some code information is needed regularly

What?

Existing ABAP in Eclipse features:

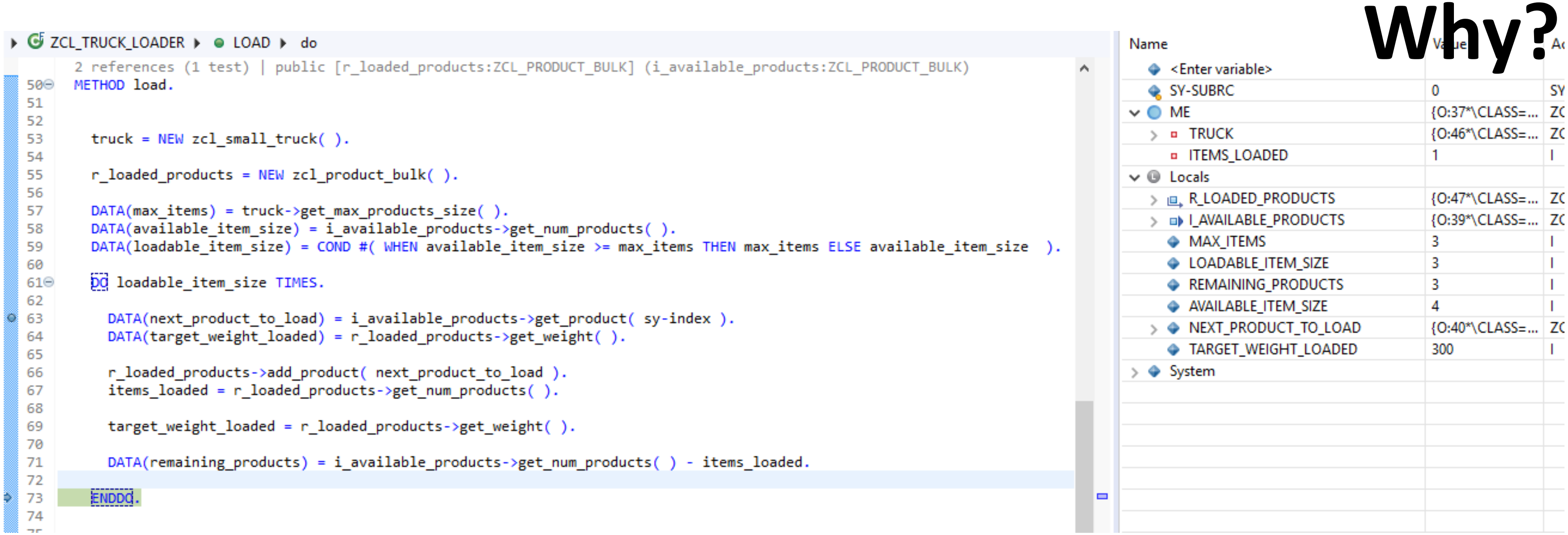
Show code element information
Get Where-used list…

} are called by Code Insight ABAP



```
    METHODS:
      2 references (1 test)
      constructor IMPORTING i_truck TYPE REF TO zif_truck,
      0 references
      lab_preview,
      2 references (1 test)
      load IMPORTING i_available_products     TYPE REF TO zcl_product_bulk
           RETURNING VALUE(r_loaded_products) TYPE REF TO zcl_product_bulk
           RAISING   zcl_no_truck_exception,
      1 reference (1 test)
      get_truck RETURNING VALUE(r_truck) TYPE REF TO zif_truck,
      1 reference (1 test)
      get_items_loaded RETURNING VALUE(r_loaded) TYPE i.
6 references (1 test)

  PROTECTED SECTION.
  PRIVATE SECTION.

    DATA:
          3 references
          truck        TYPE REF TO zif_truck,
          2 references
          items_loaded TYPE i.

ENDCLASS.


6 references (1 test)
CLASS zcl_truck_loader IMPLEMENTATION.


  2 references (1 test) | public [] (i_truck:ZIF_TRUCK)
  METHOD constructor.

    truck = NEW zcl_small_truck( ).

  ENDMETHOD.


  1 reference (1 test) | public [r_loaded:I] ()
  METHOD get_items_loaded.
    r_loaded = items_loaded.

  ENDMETHOD.
```

5 Getting variable values while debugging



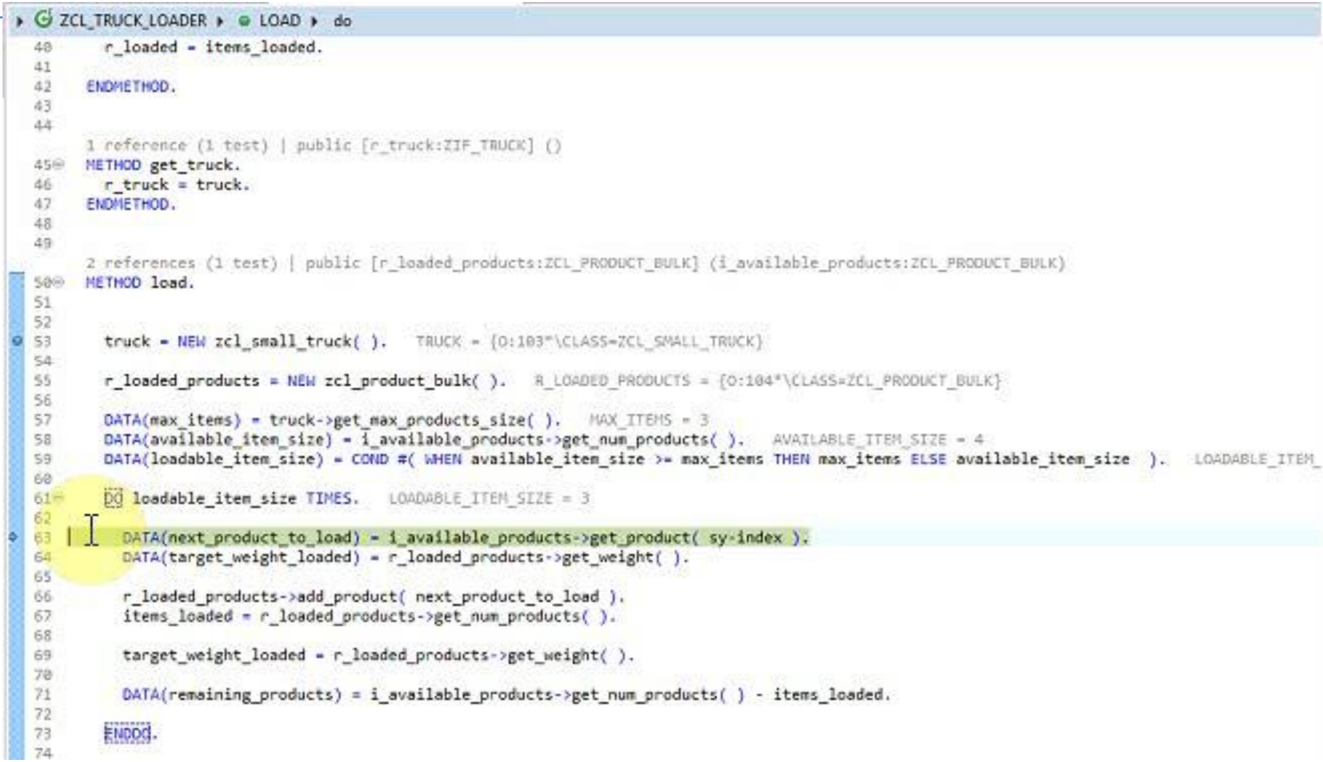
Why?

ZCL_TRUCK_LOADER ▸ LOAD ▸ do

```
2 references (1 test) | public [r_loaded_products:ZCL_PRODUCT_BULK] (i_available_products:ZCL_PRODUCT_BULK)
METHOD load.


  truck = NEW zcl_small_truck( ).

  r_loaded_products = NEW zcl_product_bulk( ).

  DATA(max_items) = truck->get_max_products_size( ).
  DATA(available_item_size) = i_available_products->get_num_products( ).
  DATA(loadable_item_size) = COND #( WHEN available_item_size >= max_items THEN max_items ELSE available_item_size  ).

  DO loadable_item_size TIMES.

    DATA(next_product_to_load) = i_available_products->get_product( sy-index ).
    DATA(target_weight_loaded) = r_loaded_products->get_weight( ).

    r_loaded_products->add_product( next_product_to_load ).
    items_loaded = r_loaded_products->get_num_products( ).

    target_weight_loaded = r_loaded_products->get_weight( ).

    DATA(remaining_products) = i_available_products->get_num_products( ) - items_loaded.

  ENDDO.
```

Name	Value	Ac
<Enter variable>		
SY-SUBRC	0	SY
ME	{O:37*\CLASS=...	ZC
TRUCK	{O:46*\CLASS=...	ZC
ITEMS_LOADED	1	I
Locals		
R_LOADED_PRODUCTS	{O:47*\CLASS=...	ZC
I_AVAILABLE_PRODUCTS	{O:39*\CLASS=...	ZC
MAX_ITEMS	3	I
LOADABLE_ITEM_SIZE	3	I
REMAINING_PRODUCTS	3	I
AVAILABLE_ITEM_SIZE	4	I
NEXT_PRODUCT_TO_LOAD	{O:40*\CLASS=...	ZC
TARGET_WEIGHT_LOADED	300	I
System		

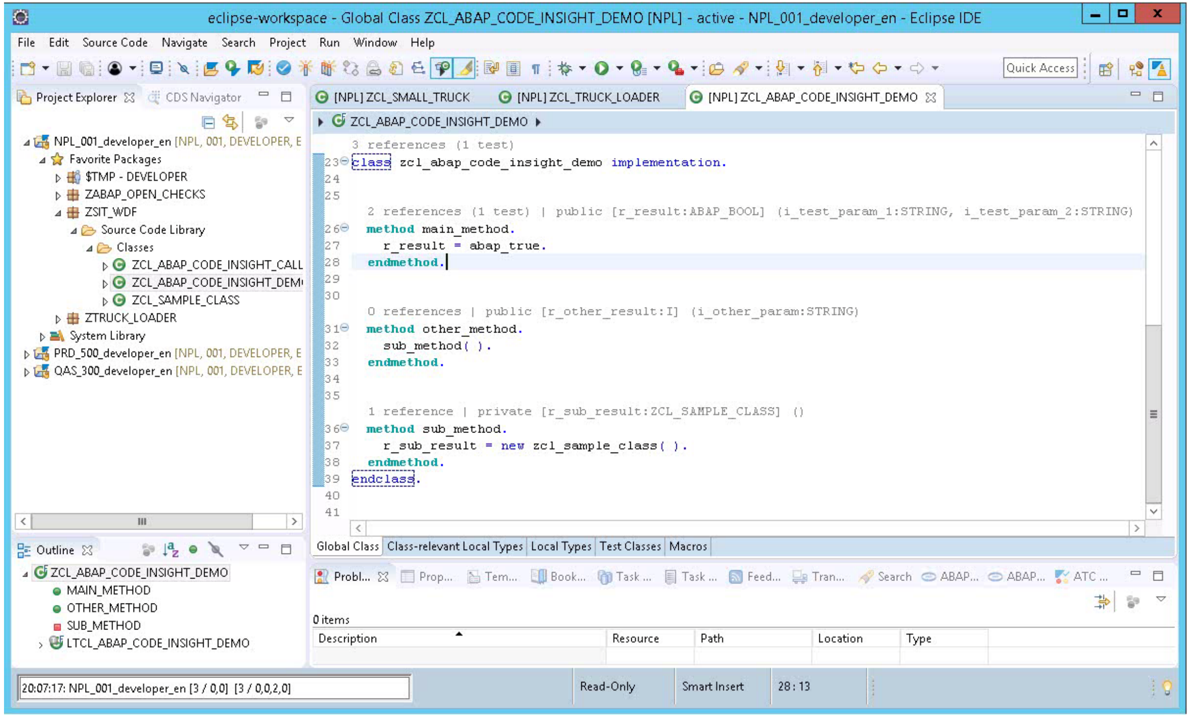
6 Getting variable values while debugging



```
    r_loaded = items_loaded.

  ENDMETHOD.


  1 reference (1 test) | public [r_truck:ZIF_TRUCK] ()
  METHOD get_truck.
    r_truck = truck.
  ENDMETHOD.


  2 references (1 test) | public [r_loaded_products:ZCL_PRODUCT_BULK] (i_available_products:ZCL_PRODUCT_BULK)
  METHOD load.


    truck = NEW zcl_small_truck( ).   TRUCK = {O:103*\CLASS=ZCL_SMALL_TRUCK}

    r_loaded_products = NEW zcl_product_bulk( ).   R_LOADED_PRODUCTS = {O:104*\CLASS=ZCL_PRODUCT_BULK}

    DATA(max_items) = truck->get_max_products_size( ).   MAX_ITEMS = 3
    DATA(available_item_size) = i_available_products->get_num_products( ).   AVAILABLE_ITEM_SIZE = 4
    DATA(loadable_item_size) = COND #( WHEN available_item_size >= max_items THEN max_items ELSE available_item_size  ).   LOADABLE_ITEM_

    DO loadable_item_size TIMES.   LOADABLE_ITEM_SIZE = 3

      DATA(next_product_to_load) = i_available_products->get_product( sy-index ).
      DATA(target_weight_loaded) = r_loaded_products->get_weight( ).

      r_loaded_products->add_product( next_product_to_load ).
      items_loaded = r_loaded_products->get_num_products( ).

      target_weight_loaded = r_loaded_products->get_weight( ).

      DATA(remaining_products) = i_available_products->get_num_products( ) - items_loaded.

    ENDDO.
```

How?

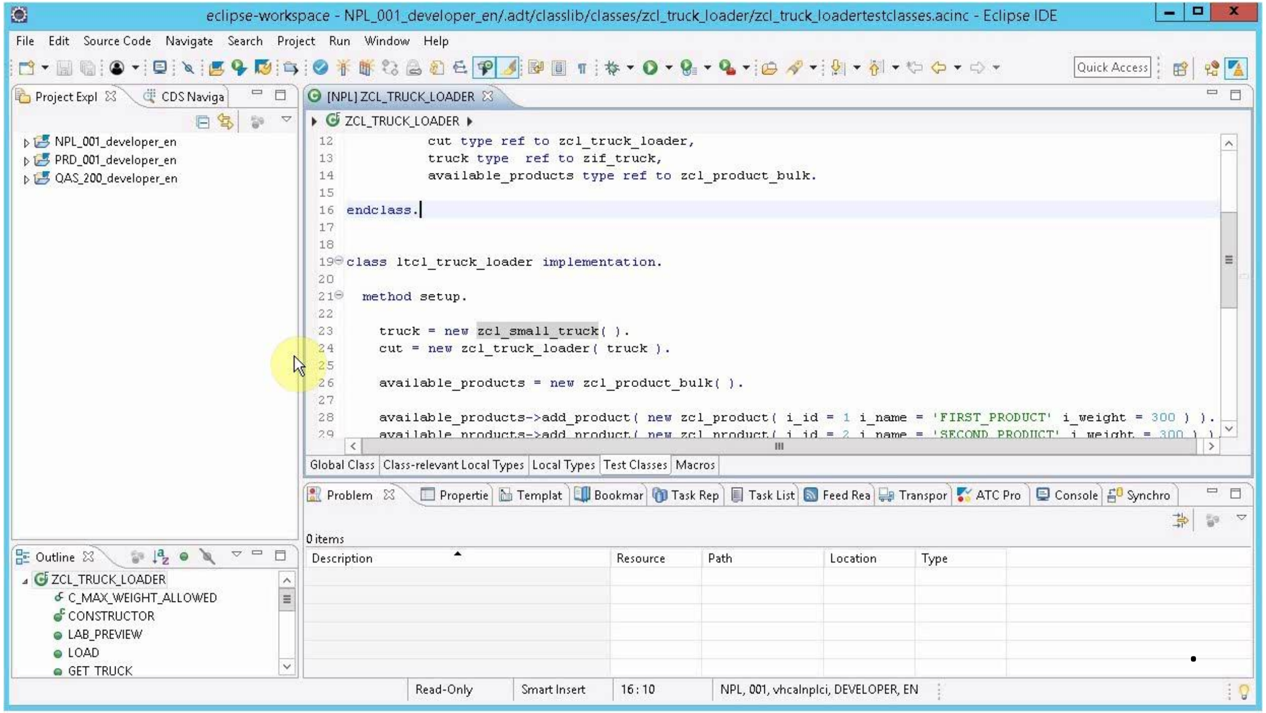
Calling abapGIT with a shortcut



```
  3 references (1 test)
class zcl_abap_code_insight_demo implementation.


   2 references (1 test) | public [r_result:ABAP_BOOL] (i_test_param_1:STRING, i_test_param_2:STRING)
   method main_method.
     r_result = abap_true.
   endmethod.


   0 references | public [r_other_result:I] (i_other_param:STRING)
   method other_method.
     sub_method( ).
   endmethod.


   1 reference | private [r_sub_result:ZCL_SAMPLE_CLASS] ()
   method sub_method.
     r_sub_result = new zcl_sample_class( ).
   endmethod.
endclass.
```

How?

Installing and configuring needs only 2 minutes



eclipse-workspace - NPL_001_developer_en/.adt/classlib/classes/zcl_truck_loader/zcl_truck_loadertestclasses.acinc - Eclipse IDE

```
            cut type ref to zcl_truck_loader,
            truck type  ref to zif_truck,
            available_products type ref to zcl_product_bulk.

endclass.


class ltcl_truck_loader implementation.

  method setup.

    truck = new zcl_small_truck( ).
    cut = new zcl_truck_loader( truck ).

    available_products = new zcl_product_bulk( ).

    available_products->add_product( new zcl_product( i_id = 1 i_name = 'FIRST_PRODUCT' i_weight = 300 ) ).
    available_products->add_product( new zcl_product( i_id = 2 i_name = 'SECOND_PRODUCT' i_weight = 300 ) ).
```

0 items

Description	Resource	Path	Location	Type

Read-Only | Smart Insert | 16 : 10 | NPL, 001, vhcalnplci, DEVELOPER, EN

Installing and configuring needs only 2 minutes

Thanks for your attention!

Purpose: Save development time and giving immediate feedback

ABAP

ABAP CI Plugin

Code Insight ABAP

Installation with: eclipse marketplace

Open Source and documentation: GitHub

andreas.gautsch@gmx.at

@andreas_gautsch

Questions, Issues, Feature or Pull Requests welcome!

Appendix

- Open Source Github repositories for the Open Source Plugins
  https://github.com/fidley/ABAPFavorites
  https://github.com/andau/abapCI
  https://github.com/andau/abap-code-insight

- Listings in Eclipse Marketplace
  https://marketplace.eclipse.org/content/abap-favorites
  https://marketplace.eclipse.org/content/abap-continuous-integration
  https://marketplace.eclipse.org/content/abap-codemining