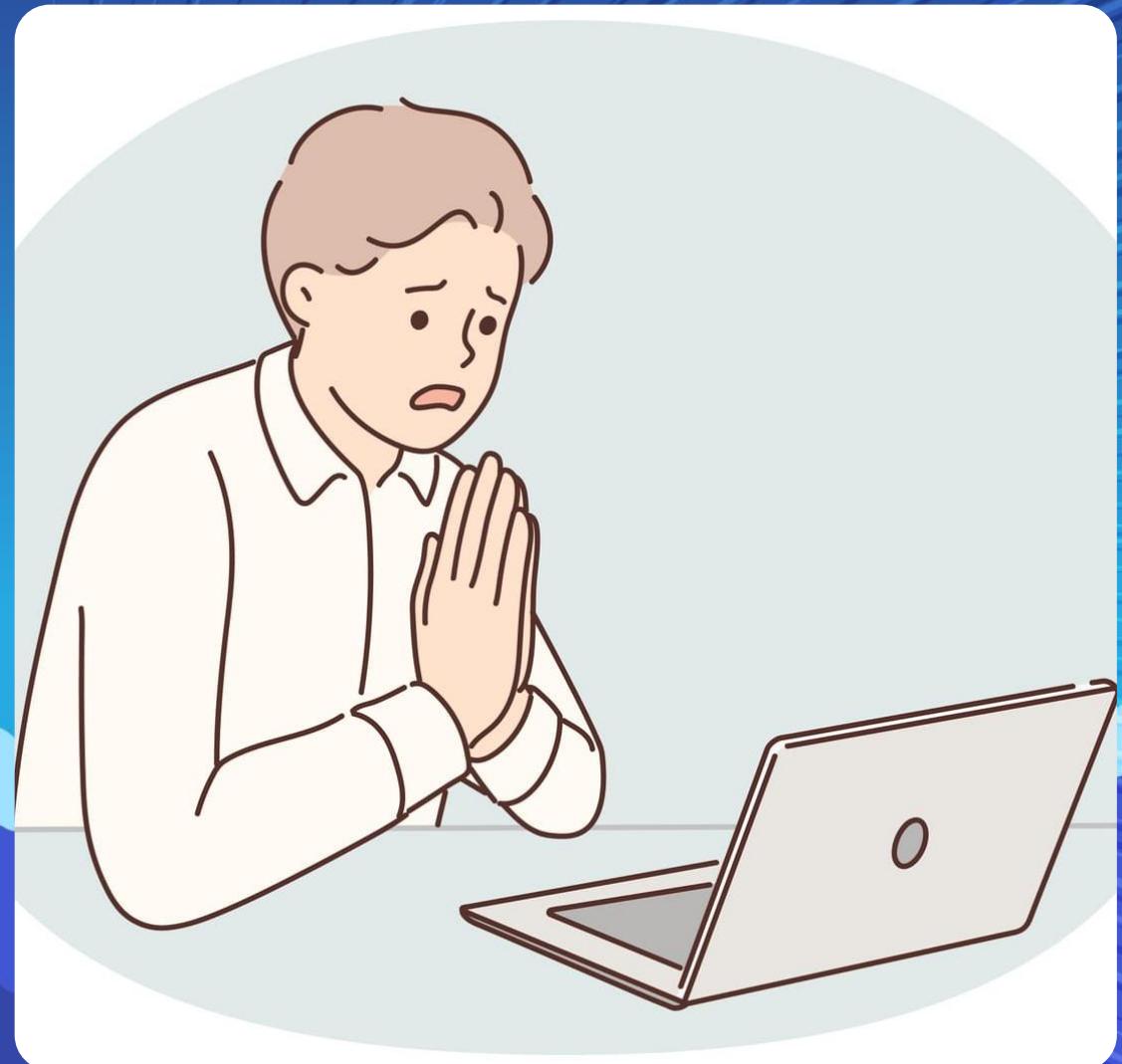




[live.dynamicscon.com](http://live.dynamicscon.com)

# Give the User a Chance

Just because it works, doesn't mean it works ...



# Henrik Helgesen - Aka TheDoubleH

- Originally from Denmark.
- Currently live in Los Angeles, California
- Started with Navigator 3.04 in 1995
- Have worked in all aspects from before life, to death – all in NAV / BC
- Stickler for rules – Previously known as the GUI Police
- Long Time Listener, First time Caller
- Hockey Fan (Los Angeles Kings)
- Magic Fan (Magic Castle Member)





**Yes – I am a Dinosaur**

# **Objective**

A silhouette illustration of two people, a man and a woman, standing on a dark cliff edge. They are looking out over a landscape with rolling hills and mountains under a warm, orange and yellow sunset sky. The sun is partially visible behind the clouds.

Share some tips  
on what options  
you as a developer  
have to help guide  
the user in their  
day-to-day work



**As Developers we tend to “make it Work”.**

**... but only if the user does EXACTLY  
what we expect them to do ...**





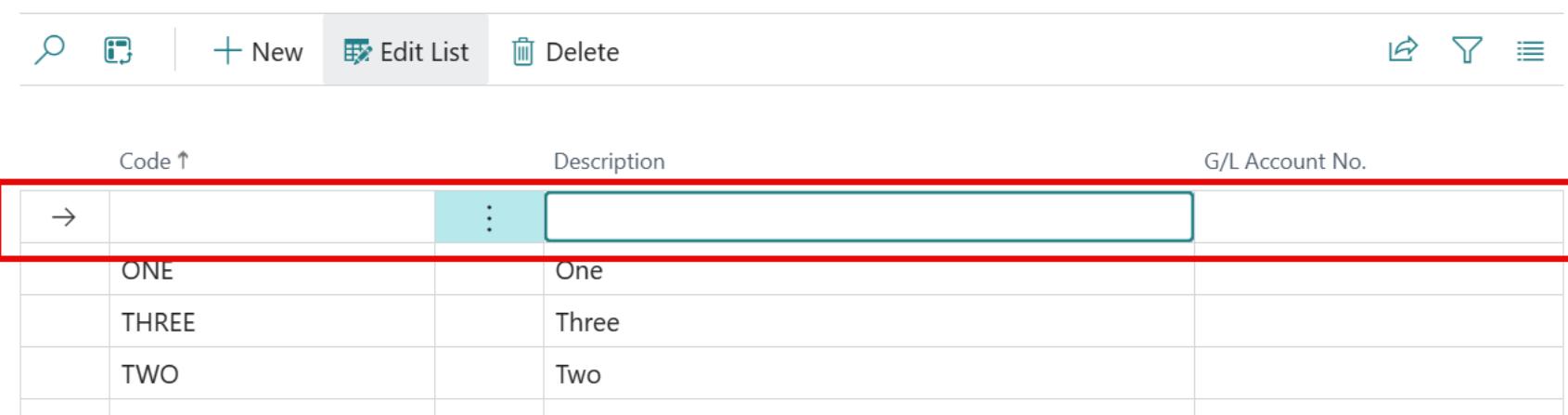
# What can we do?





# Prevent Bad Data

# Prevent <Blank> Records



A screenshot of a Microsoft Dynamics 365 list view. The top navigation bar includes icons for search, filter, new record (+ New), edit list (Edit List), and delete. Below the table, there are three rows of data:

Code ↑	Description	G/L Account No.
→	One	
ONE	Three	
THREE	Two	
TWO		



# Prevent <Blank> Records

- As a Developer, You can ensure that the Primary Key fields is populated.
- Base App: Table 251 – Gen. Product Posting Group
- The `Code` field has NotBlank = true

```
1  table 251 "Gen. Product Posting Group"
2  {
3      Caption = 'Gen. Product Posting Group';
4      DataCaptionFields = "Code", Description;
5      LookupPageID = "Gen. Product Posting Groups";
6
7      fields
8      {
9          field(1; "Code"; Code[20])
10         {
11             Caption = 'Code';
12             NotBlank = true;
13         }
14         field(2; Description; Text[100])
15         {
16             Caption = 'Description';
17         }
18         field(3; "Def. VAT Prod. Posting Group"; Code[20])
19         {
20             Caption = 'Def. VAT Prod. Posting Group';
21             TableRelation = "VAT Product Posting Group";
22         }
23     }
24 }
```

General Product Posting Groups

Not saved

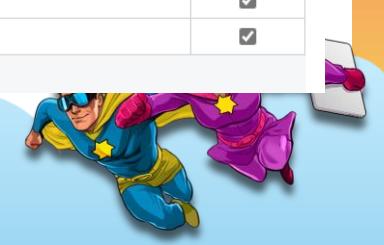
Search + New Edit List Delete Setup More options

The page has an error. Refresh (F5) to undo the change, or correct the error.

Code ↑	Description	Def. VAT Prod. Posting Group	Auto Insert Default
MANUFACT	Capacities		<input checked="" type="checkbox"/>
NO TAX	Miscellaneous without tax		<input checked="" type="checkbox"/>
RAW MAT	Raw materials		<input checked="" type="checkbox"/>
RETAIL	Retail		<input checked="" type="checkbox"/>
SERVICES	Resources, etc.		<input checked="" type="checkbox"/>

Validation Results

Code must be filled in. Enter a value.



# Prevent <Blank> Records

Property: **NotBlank**

Sets a value that specifies whether users must enter a value in the selected field or text box.

Only “valid” for Primary Key Fields.

Only Primary Key Fields are enforced on OnInsert, but other fields are enforced – if you happen to enter / clear a value.



# Indicate Mandatory fields for processing

On pages, You can set ShowMandatory to true. This will place a red asterisk in the text box, giving the user a visual indicator that a value is required.

```
54     field("No."); "No.")
55     {
56         ApplicationArea = Basic, Suite;
57         ShowMandatory = Type <> Type::" ";
58         ToolTip = 'Specifies the number of a general ledger account, item, resource, additional dimension, or other value used for tracking data across the system.';
59
60         trigger OnValidate()
61         begin
62             NoOnAfterValidate();
63             UpdateEditableOnRow();
64             ShowShortcutDimCode(ShortcutDimCode);
65         end
66     }
67 
```

Dynamics 365 Business Central

S-ORD101001 · Adatum Corporation

General

Customer Name	Adatum Corporation	Due Date	5/2/2023
Contact	Robert Townes	Requested Delivery Date	4/3/2023
Posting Date	4/2/2022	External Document No.	
Order Date	4/2/2022	Status	Open

Lines | Manage | More options

Type	No.	Item Reference No.	Description	Location Code	Quantity
Item	1350-5	ATLANTA Whiteboard, base			12

Subtotal: 16,767.60 Total: 16,767.60 (USD)



# Indicate Mandatory fields for processing

Property: **ShowMandatory**

Sets a value that specifies whether users must enter a value in the selected field or text box. The field is marked on the page with a red asterisk and does not enforce any validation. Once the field is filled, the red asterisk disappears. The ShowMandatory property only controls the UI and overrides any asterisk marking of the NotBlank Property.

Also, be aware that while it is possible to use an expression for the ShowMandatory property, the property cannot validate an AL function.

For an example, see the Purchase Invoice page where the Vendor Invoice No field is controlled by the VendorInvoiceNoMandatory expression.

VendorInvoiceNoMandatory is a variable that takes the value from the Ext. Doc. Mandatory field on the Purchase page and the Payables page.



# Indicate Mandatory fields for processing

Property: **ShowMandatory**

Sets a value that specifies whether users must enter a value in the selected field or text box. The field is marked on the page with a red asterisk and does not enforce any validation. Once the field is filled, the red asterisk disappears. The ShowMandatory property only controls the UI and overrides any asterisk marking of the NotBlank Property.

Also, be aware that while it is possible to use an expression for the ShowMandatory property, the property cannot validate an AL function.

For an example, see the Purchase Invoice page where the Vendor Invoice No field is controlled by the VendorInvoiceNoMandatory expression.

VendorInvoiceNoMandatory is a variable that takes the value from the Ext. Doc. No. Mandatory field on the Purchase page and the Payables page.





**Steve Endow**  
@steveendow

Why is the Vendor Invoice No field marked as required for a brand new Purchase Order? 😱 #MSDyn365BC

A screenshot of the Microsoft Dynamics 365 Purchase Order screen. The purchase order number is 106009 · Fabrikam, Inc. In the 'General' section, the 'Vendor Invoice No.' field is highlighted with a red border and a red asterisk (\*). A tooltip message 'The value for this field is required.' is displayed next to the field. Other fields shown include Vendor No. (10000), Vendor Name (Fabrikam, Inc.), Address (10 North Lake Avenue), City (Atlanta), Posting Date (12/31/2023), Due Date (12/31/2023), and Purchaser Code.

12:09 PM · Apr 14, 2024

**NotBlank**

**=**

**ShowMandatory**



**ShowMandatory  
Is not  
Enforced**

# Enabled (true/false)

```
field("Reorder Quantity"; "Reorder Quantity")
{
    ApplicationArea = Planning;
    Enabled = ReorderQtyEnable;
    ToolTip = 'Specifies a standard lot size quantity to be used for all order proposals';
}
```

Planning

Reordering Policy ..... Order

Order Tracking Policy ..... None

Stockkeeping Unit Exists ..... No

Critical .....

Safety Lead Time .....

Safety Stock Quantity ..... 0

Lot-for-Lot Parameters

Include Inventory .....

Lot Accumulation Period .....

Rescheduling Period .....

Show more

Reorder-Point Parameters

Reorder Point .....	25
Reorder Quantity .....	0
Maximum Inventory .....	0

Order Modifiers

Minimum Order Quantity .....	0
Maximum Order Quantity .....	0
Order Multiple .....	0

Manipulating the Enabled Property keeps the field on the page but enables control whether field can be edited or not.

This can be good when another field controls what information is needed.

The Item Card is a good example of it's use.



# Enabled (true/false)

```
field("Reorder Quantity"; "Reorder Quantity")
{
    ApplicationArea = Planning;
    Enabled = ReorderQtyEnable;
    ToolTip = 'Specifies a standard lot size quantity to be used for all order proposals';
}
```

Planning

Reordering Policy .....	Maximum Qty.
Order Tracking Policy .....	None
Stockkeeping Unit Exists .....	No
Critical .....	<input checked="" type="checkbox"/>
Safety Lead Time .....	
Safety Stock Quantity .....	0
Lot-for-Lot Parameters	
Include Inventory .....	<input checked="" type="checkbox"/>
Lot Accumulation Period .....	
Rescheduling Period .....	
Reorder-Point Parameters	
Reorder Point .....	25
Reorder Quantity .....	0
Maximum Inventory .....	0
Order Modifiers	
Minimum Order Quantity .....	0
Maximum Order Quantity .....	0
Order Multiple .....	0

Manipulating the Enabled Property keeps the field on the page but enables control whether field can be edited or not.

This can be good when another field controls what information is needed.

The Item Card is a good example of it's use.



# Visible (true/false)

Visible should only be set OnOpen.  
Otherwise, the page can be jumbled  
and confusing.

Works well for Card pages for tables  
that require different fields populated  
based on an already known value. i.e.:

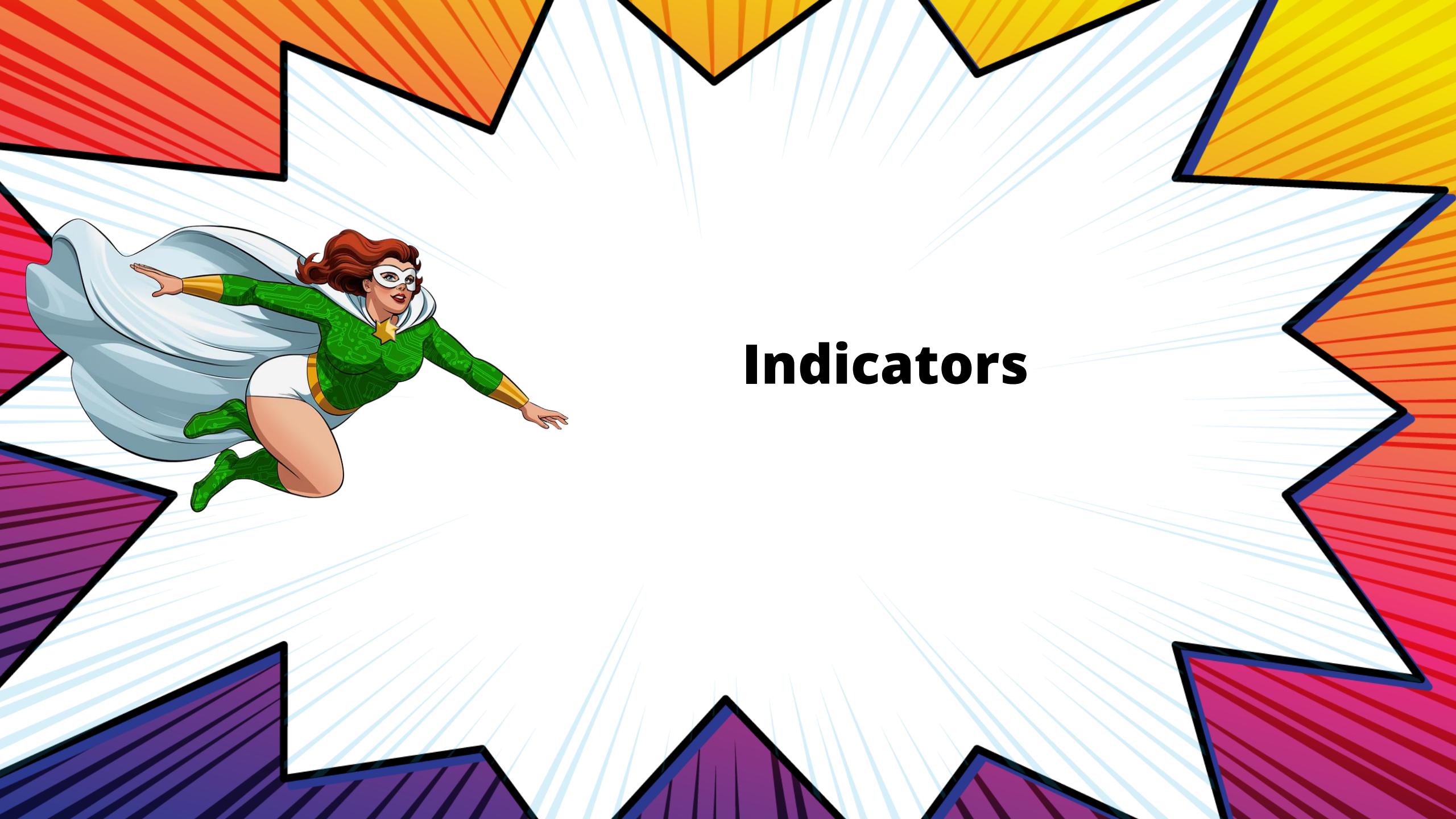
- Credit Card Apps
- Transaction Type
- Card Issuer
- Gateway
- Shipping Solutions
- Carrier

Domestic vs International

```
131 trigger OnOpenPage()
132 begin
133     IsCountyVisible := FormatAddress.UseCountry("Country/Region Code");
134 end;
135
```

```
36         group(Control15)
37     {
38         ShowCaption = false;
39         Visible = IsCountyVisible;
40         field(County; County)
41     {
42         ApplicationArea = Basic, Suite;
43     }
```





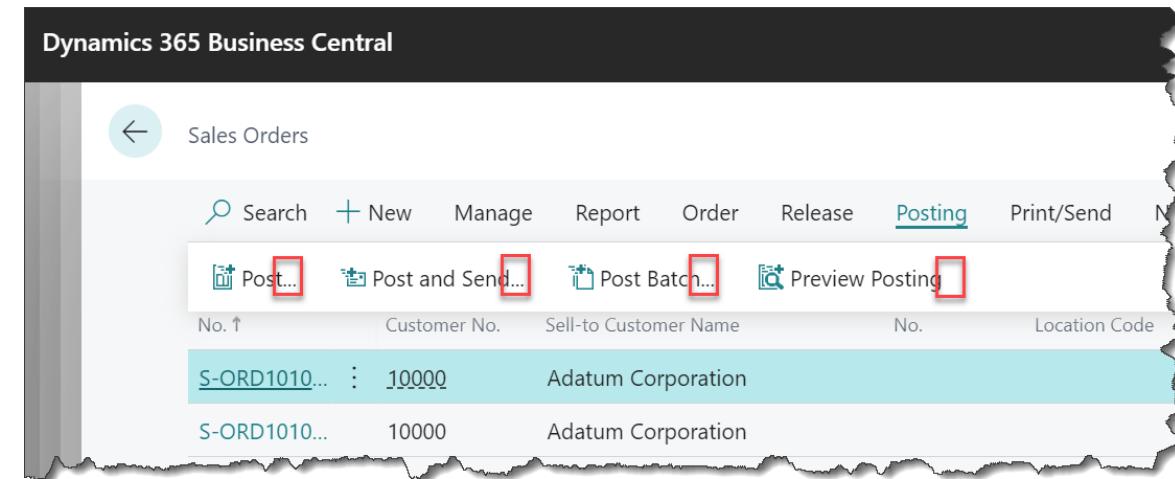
# Indicators

# Ellipsis (Three dots)

Official Documentation says: "Sets a value that specifies whether an ellipsis (...) is appended to the caption on a command button or menu item."

An ellipsis tells the user that other choices will appear if the command button or menu item are selected."

To me – It's an indicator that 'nothing bad' will happen if You press this action.



# Show something is happening

Unless You, as a developer, do anything, Users are kept in the dark about what is happening.

All they are shown is this:



Working on it ...



# Show something is happening

When processing data, that could take longer than one second, I always show the user, that something is happening.

Using the Dialog variable type, allows for 'communication' to the user – and more importantly – gives the user a 'Cancel' button.

Window.Update takes a lot of resources, so You will want to be cautious, and not update too rapidly.

You really shouldn't need to update more often than ever second.

```
if TempSalesLineGlobal.FindSet() then
    repeat
        ErrorMessage!gt.PushContext(ErrorContextElementPostLine, TempSalesLineGlobal.RecordId, 0, PostDocumentLinesMsg);
        ItemJnlRollRngd := false;
        LineCount := LineCount + 1;
        if not HideProgressWindow then
            Window.Update(2, LineCount);

        PostSalesLine(
            SalesHeader, TempSalesLineGlobal, EverythingInvoiced, TempVATAmountLine, TempVATAmountLineRemainder,
            TempItemLedEntryNotInvoiced, HasATOShippedNotInvoiced, TempDropShptPostBuffer, ICGenJnlLineNo,
            TempServiceItem2, TempServiceItemComp2);

        if RoundingLineInserted then
            LastLineRetrieved := true
        else begin
            BiggestLineNo := MAX(BiggestLineNo, TempSalesLineGlobal."Line No.");
            LastLineRetrieved := TempSalesLineGlobal.Next() = 0;
            if LastLineRetrieved and SalesSetup."Invoice Rounding" then
                InvoiceRounding(SalesHeader, TempSalesLineGlobal, false, BiggestLineNo);
        end;
    OnRunOnBeforePostSalesLineEndLoop(SalesHeader, TempSalesLineGlobal, LastLineRetrieved, SalesInvHeader, SalesCrMemoHeader, Rec, xSalesLine);
    ErrorMessage!gt.PopContext(ErrorContextElementPostLine);
```

Working on it...

Order S-ORD101005 -> Invoice PS-INV103215  
Posting lines 23  
Posting sales and tax  
Posting to customers  
Posting to bal. account

Cancel



# Show something is happening

... and show something when you are done.



Processing Complete.

OK



Processing Complete.

147 Lines inserted.

OK



# My gift to you ...



Working on it...

Updating entries ...

Entry Description: Direct Cost 20000 on 09/23/21



Elapsed time :..... 1 Minutes, 14 Seconds

Estimated time left :.... 3 Minutes, 4 Seconds

Estimated end time :.... 22:45:52

Cancel

```
procedure UpdateWindow(Counter: Integer; NoOfRecords: Integer);
var
    ProgressBar: Codeunit "Progress Bar TBHLG";
    EndTime: DateTime;
    CurrDuration: Duration;
    EstimatedDuration: Duration;

begin
    if CurrentDateTime < LastUpdate + 1000 then
        exit;

    if Counter = 0 then
        exit;

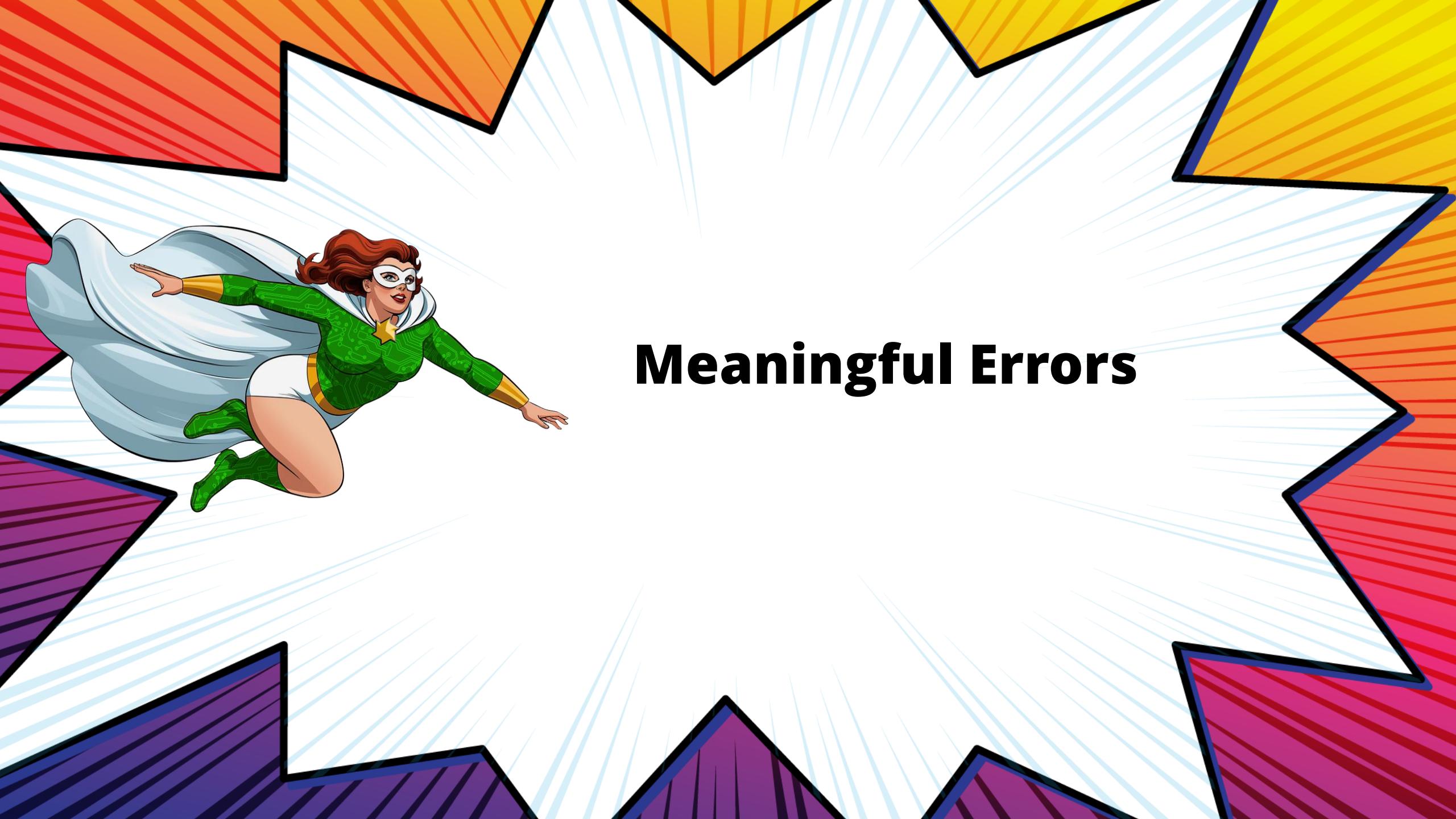
    Window.Update(20, ProgressBar.ProgressBar(Counter, NoOfRecords));
    LastUpdate := CurrentDateTime;
```

```
var
    GLEntry: Record "G/L Entry";
    DialogHelperTBHLG: Codeunit "Dialog Helper TBHLG";
    NoOfRecords: Integer;
    OnRecordNo: Integer;
begin
    DialogHelperTBHLG.OpenWindow('Updating entries ...\\Entry Description: #1#####', true);
    NoOfRecords := GLEntry.Count();
    GLEntry.FindSet();
repeat
    OnRecordNo += 1;
    DialogHelperTBHLG.UpdateWindow(1, GLEntry.Description, OnRecordNo, NoOfRecords);
    sleep(50)
until GLEntry.next() = 0;
end;
```

In my BCALToolbox (Open Source <https://go.thedoubleh.dev/toolbox>) I have created function, that make it easy.

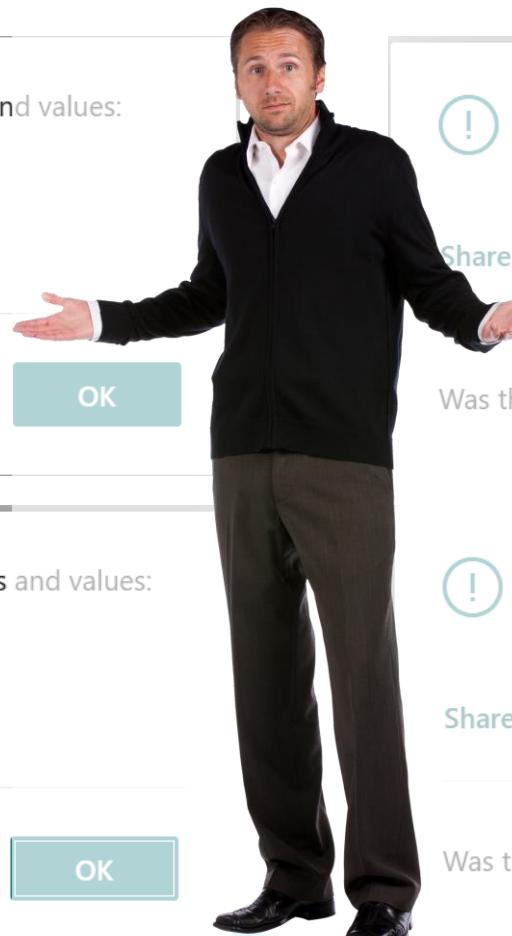
These functions makes sure I only update once every second.





# Meaningful Errors

# Give the user a reference



! The Customer does not exist. Identification fields and values:  
No.=""

Share details ▾

Was this information helpful? Yes No

OK

! The Payment Terms does not exist. Identification fields and  
values: Code=""

Share details ▾

Was this information helpful? Yes No

OK

! The G/L Account does not exist. Identification fields and values:  
No.=""

Share details ▾

Was this information helpful? Yes No

OK

! The Customer Posting Group does not exist. Identification fields  
and values: Code=""

Share details ▾

Was this information helpful? Yes No

OK



# Give the user a reference

If you do not give the user a refence, how will they know what is wrong?

Using a testfield will make sure a value is there (or will make sure that the value is a specific value)

As a child, I was always taught:

*“Always use a testfield, if you are dependent of the value”*



# Give the user a reference

Method: **testfield**

Tests that the content of the field is not zero or blank (empty string). If it is, an error message is displayed.



**BUT ...**

I use the testfield as a backup

# Show multiple errors

Error Messages

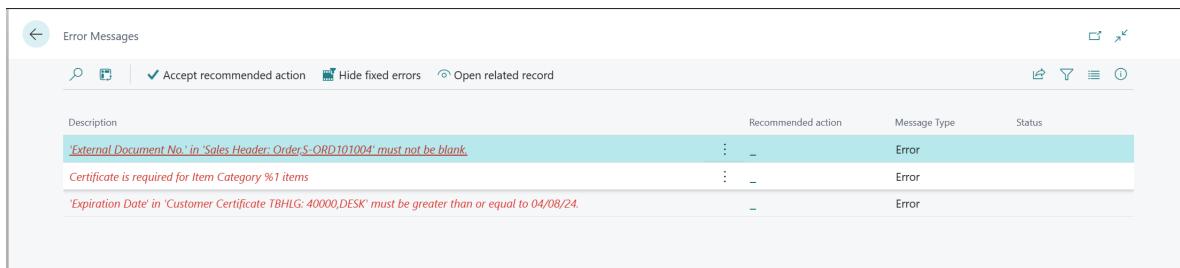
Accept recommended action Hide fixed errors Open related record

Description	Recommended action	Message Type	Status
<i>'External Document No.' in 'Sales Header: Order:S-ORD101004' must not be blank.</i>	-	Error	
<i>Certificate is required for Item Category %1 items</i>	-	Error	
<i>'Expiration Date' in 'Customer Certificate TBHLG: 40000,DESK' must be greater than or equal to 04/08/24.</i>	-	Error	



# Show multiple errors

Use the Error Message Table to collect errors, and present at the end.



Description	Recommended action	Message Type	Status
'External Document No.' in 'Sales Header, Order S-ORD101004' must not be blank.	-	Error	
Certificate is required for Item Category %1 items	-	Error	
'Expiration Date' in 'Customer Certificate TBHLG: 40000,DESK' must be greater than or equal to 04/08/24.	-	Error	



# Show multiple errors

The Error Message table has several procedures (methods) you can call:

LogIfEmpty(RecRelatedVariant: Variant, FieldNumber: Integer,  
MessageType: Option): Integer

LogIfLessThan(RecRelatedVariant: Variant, FieldNumber: Integer,  
MessageType: Option, UpperBound: Variant): Integer

LogDetailedMessage(RecRelatedVariant: Variant, FieldNumber:  
Integer, MessageType: Option, NewDescription: Text,  
AdditionalInformation: Text[250], SupportUrl: Text[250]): Integer



# Actionable Error Message

While there, sadly, isn't any example of this in the Base app, I wholeheartedly believe in the use of the Error Message Table (Error Management).

When I release a 'Document', I will run through the header and lines, and test for 'mandatory' fields (Those have been flagged as ShowMandatory).

I will also test if the affected record is 'blocked' or otherwise invalid.



# Actionable Error Message

Use the Actionable Error Message

The screenshot shows a Dynamics 365 application interface. At the top, there are navigation links: Post..., Release, Create Warehouse Shipment, Create Inventory Put-away/Pick..., and Archive Document. Below this, a message bar indicates an error: "The page has an error. Refresh (F5) to undo the change, or correct the error." The main area contains fields for Posting Date (4/2/2024), Order Date (4/2/2024), and Status (Open). A "Lines" section is visible, showing a table with columns: Type, Line Discount %, Line Amount Excl. Tax, Amount Including Tax, Qty. to Ship, Quantity Shipped, Qty. to Invoice, and Quantity. An error message box is overlaid on the "Qty. to Ship" column, stating: "Qty. to Ship isn't valid. You cannot ship more than 12 units. Set value to 12". The bottom of the screen shows Subtotal Excl. Tax (USD) and Total Excl. Tax (USD), both listed as 16.767.60.

Using the Error Message Management Codeunit, you can call a codeunit to “fix it” for the user.

SalesLine.”Qty. to Ship” validation is a great example



# Actionable Error Message

The screenshot shows a Dynamics 365 Sales interface for creating a warehouse shipment. At the top, there are navigation links: Post..., Release..., Create Warehouse Shipment, Create Inventory Put-away/Pick..., and Archive Document. A status bar message indicates: "The page has an error. Refresh (F5) to undo the change, or correct the error." Below this, the posting date is set to 4/2/2024 and the status is Open. The order date is also 4/2/2024. The main area is titled "Lines" and contains a table with columns: Type, Line Discount %, Line Amount Excl. Tax, Amount Including Tax, Qty. to Ship, Quantity Shipped, Qty. to Invoice, and Quantity. An item row is selected, showing a value of 15 in the Qty. to Ship field. A tooltip error message appears over this field: "Qty. to Ship isn't valid. You cannot ship more than 12 units. Set value to 12". At the bottom, the subtotal excl. tax is 16,767.60 and the total excl. tax is 16,767.60.

```
local procedure CannotShipErrorInfo(): ErrorInfo
var
    ErrorMesageManagement: Codeunit "Error Message Management";
begin
    exit(ErrorMesageManagement.BuildActionableErrorInfo(
        QtyShipNotValidTitleLbl,
        StrSubstNo(Text007, "Outstanding Quantity"),
        Rec.RecordId,
        StrSubstNo(QtyShipActionLbl, "Outstanding Quantity"),
        Codeunit::"Sales Line-Reserve",
        'SetSaleShipQty',
        StrSubstNo(QtyShipActionDescriptionLbl,
        Rec.FieldCaption("Qty. to Ship"), Rec.Quantity)));
end;
```



# Actionable Error Message

The screenshot shows a Sales Order Line grid. The first row has a Type of 'Item' and a Quantity of 15. A tooltip appears over the Quantity field with the message: 'Qty. to Ship isn't valid. You cannot ship more than 12 units.' Below the grid, the Subtotal Excl. Tax (USD) is 16,767.60 and the Total Excl. Tax (USD) is also 16,767.60.

Type	Line Discount %	Line Amount Excl. Tax	Amount Including Tax	Qty. to Ship	Quantity Shipped	Qty. to Invoice	Quantity
Item		16,767.60	17,773.66	15		5	

```
local procedure CannotShipErrorInfo(): ErrorInfo
var
    ErrorMesageManagement: Codeunit "Error Message Management";
begin
    exit(ErrorMesageManagement.BuildActionableErrorInfo(
        QtyShipNotValidTitleLbl,
        StrSubstNo(Text007, "Outstanding Quantity"),
        Rec.RecordId,
        StrSubstNo(QtyShipActionLbl, "Outstanding Quantity"),
        Codeunit::"Sales Line-Reserve",
        'SetSaleShipQty',
        StrSubstNo(QtyShipActionDescriptionLbl,
        Rec.FieldCaption("Qty. to Ship"), Rec.Quantity)));
end;
```



# Actionable Error Message

The screenshot shows a Sales Order screen in Dynamics 365. At the top, there are navigation links: Post..., Release..., Create Warehouse Shipment, Create Inventory Put-away/Pick..., and Archive Document. A status bar message indicates: "The page has an error. Refresh (F5) to undo the change, or correct the error." Below this, the Posting Date is set to 4/2/2024 and the Status is Open. The Order Date is also 4/2/2024. The main area displays a table of sales lines. One line item has a Type of Item, Line Discount % of :, Line Amount Excl. Tax of 16,767.60, and Amount Including Tax of 17,773.66. The Qty. to Ship field contains the value 15, which is highlighted with a red border and a tooltip: "Qty. to Ship isn't valid. You cannot ship more than 12 units. Set value to 12". The Quantity Shipped field contains the value 5. The Qty. to Invoice field contains the value 5. The Quantity field contains the value 15. At the bottom, Subtotal Excl. Tax (USD) is 16.767.60 and Total Excl. Tax (USD) is 16.767.60.

```
local procedure CannotShipErrorInfo(): ErrorInfo
var
    ErrorMesageManagement: Codeunit "Error Message Management";
begin
    exit(ErrorMesageManagement.BuildActionableErrorInfo(
        QtyShipNotValidTitleLbl,
        StrSubstNo(Text007, "Outstanding Quantity"),
        Rec.RecordId,
        StrSubstNo(QtyShipActionLbl, "Outstanding Quantity"),
        Codeunit::"Sales Line-Reserve",
        'SetSaleShipQty',
        StrSubstNo(QtyShipActionDescriptionLbl,
        Rec.FieldCaption("Qty. to Ship"), Rec.Quantity)));
end;
```



# Actionable Error Message

The screenshot shows the 'Sales Line Reserve' page in Dynamics 365. At the top, there are navigation links: Post..., Release..., Create Warehouse Shipment, Create Inventory Put-away/Pick..., and Archive Document. A message bar indicates an error: 'The page has an error. Refresh (F5) to undo the change, or correct the error.' Below this, the 'Posting Date' is set to 4/2/2024 and the 'Status' is 'Open'. The 'Order Date' is also 4/2/2024. The main area displays a table of sales lines. One line item has a quantity of 15 entered in the 'Qty. to Ship' field. A tooltip error message appears over this field: 'Qty. to Ship isn't valid. You cannot ship more than 12 units.' A blue arrow points from the text 'You cannot ship more than 12 units.' to the corresponding line in the error message code below.

```
local procedure CannotShipErrorInfo(): ErrorInfo
var
    ErrorMesageManagement: Codeunit "Error Message Management";
begin
    exit(ErrorMesageManagement.BuildActionableErrorInfo(
        QtyShipNotValidTitleLbl,
        StrSubstNo(Text007, "Outstanding Quantity"),
        Rec.RecordId,
        StrSubstNo(QtyShipActionLbl, "Outstanding Quantity"),
        Codeunit::"Sales Line-Reserve",
        'SetSaleShipQty',
        StrSubstNo(QtyShipActionDescriptionLbl,
                    Rec.FieldCaption("Qty. to Ship"), Rec.Quantity)));
end;
```



# Actionable Error Message

The screenshot shows a Dynamics 365 Sales page for a warehouse shipment. At the top, there are navigation links: Post..., Release..., Create Warehouse Shipment, Create Inventory Put-away/Pick..., and Archive Document. A message bar at the top indicates an error: "The page has an error. Refresh (F5) to undo the change, or correct the error." Below this, the posting date is set to 4/2/2024 and the status is Open. The order date is also 4/2/2024. The main area shows a table of sales lines. The first line is for an item with a quantity of 15. A tooltip appears over the quantity field, stating "Qty. to Ship isn't valid" and "You cannot ship more than 12 units." An arrow points from the text "Set value to 12" to the quantity input field, which currently contains the value 5. The table columns include Type, Line Discount %, Line Amount Excl. Tax, Amount Including Tax, Qty. to Ship, Quantity Shipped, Qty. to Invoice, and Quantity.

```
local procedure CannotShipErrorInfo(): ErrorInfo
var
    ErrorMesageManagement: Codeunit "Error Message Management";
begin
    exit(ErrorMesageManagement.BuildActionableErrorInfo(
        QtyShipNotValidTitleLbl,
        StrSubstNo(Text007, "Outstanding Quantity"),
        Rec.RecordId,
        StrSubstNo(QtyShipActionLbl, "Outstanding Quantity"),
        Codeunit::"Sales Line-Reserve",
        'SetSaleShipQty',
        StrSubstNo(QtyShipActionDescriptionLbl,
        Rec.FieldCaption("Qty. to Ship"), Rec.Quantity)));
end;
```



# Actionable Error Message

The screenshot shows a Dynamics 365 Business Central page for a warehouse shipment. At the top, there are navigation links: Post..., Release..., Create Warehouse Shipment, Create Inventory Put-away/Pick..., and Archive Document. A status bar message indicates: "The page has an error. Refresh (F5) to undo the change, or correct the error." Below this, the posting date is set to 4/2/2024 and the status is Open. The order date is also 4/2/2024. The main area is titled "Lines" and contains a table with columns: Type, Line Discount %, Line Amount Excl. Tax, Amount Including Tax, Qty. to Ship, Quantity Shipped, Qty. to Invoice, and Quantity. An item row is selected, showing a value of 15 in the Qty. to Ship field. A tooltip error message appears over this field: "Qty. to Ship isn't valid. You cannot ship more than 12 units. Set value to 12".

```
local procedure CannotShipErrorInfo(): ErrorInfo
var
    ErrorMesageManagement: Codeunit "Error Message Management";
begin
    exit(ErrorMesageManagement.BuildActionableErrorInfo(
        QtyShipNotValidTitleLbl,
        StrSubstNo(Text007, "Outstanding Quantity"),
        Rec.RecordId,
        StrSubstNo(QtyShipActionLbl, "Outstanding Quantity"),
        Codeunit::"Sales Line-Reserve",
        'SetSaleShipQty',
        StrSubstNo(QtyShipActionDescriptionLbl,
                    Rec.FieldCaption("Qty. to Ship"), Rec.Quantity)));
end;
```



# Actionable Error Message

Sales Order

S-ORD101001 · Adatum Corporation

Home Prepare Print/Send Request Approval Order Report Actions Related Automate Fewer options

Post... Release Create Warehouse Shipment Create Inventory Put-away/Pick... Archive Document

The page has an error. Refresh (F5) to undo the change, or correct the error.

**General**

Customer Name	Adatum Corporation	Due Date	5/2/2024
Contact	Robert Townes	Requested Delivery Date	4/3/2024
Document Date	4/2/2024	External Document No.	
Posting Date	4/2/2024	Status	Open
Order Date	4/2/2024		

**Lines** Manage Line Order

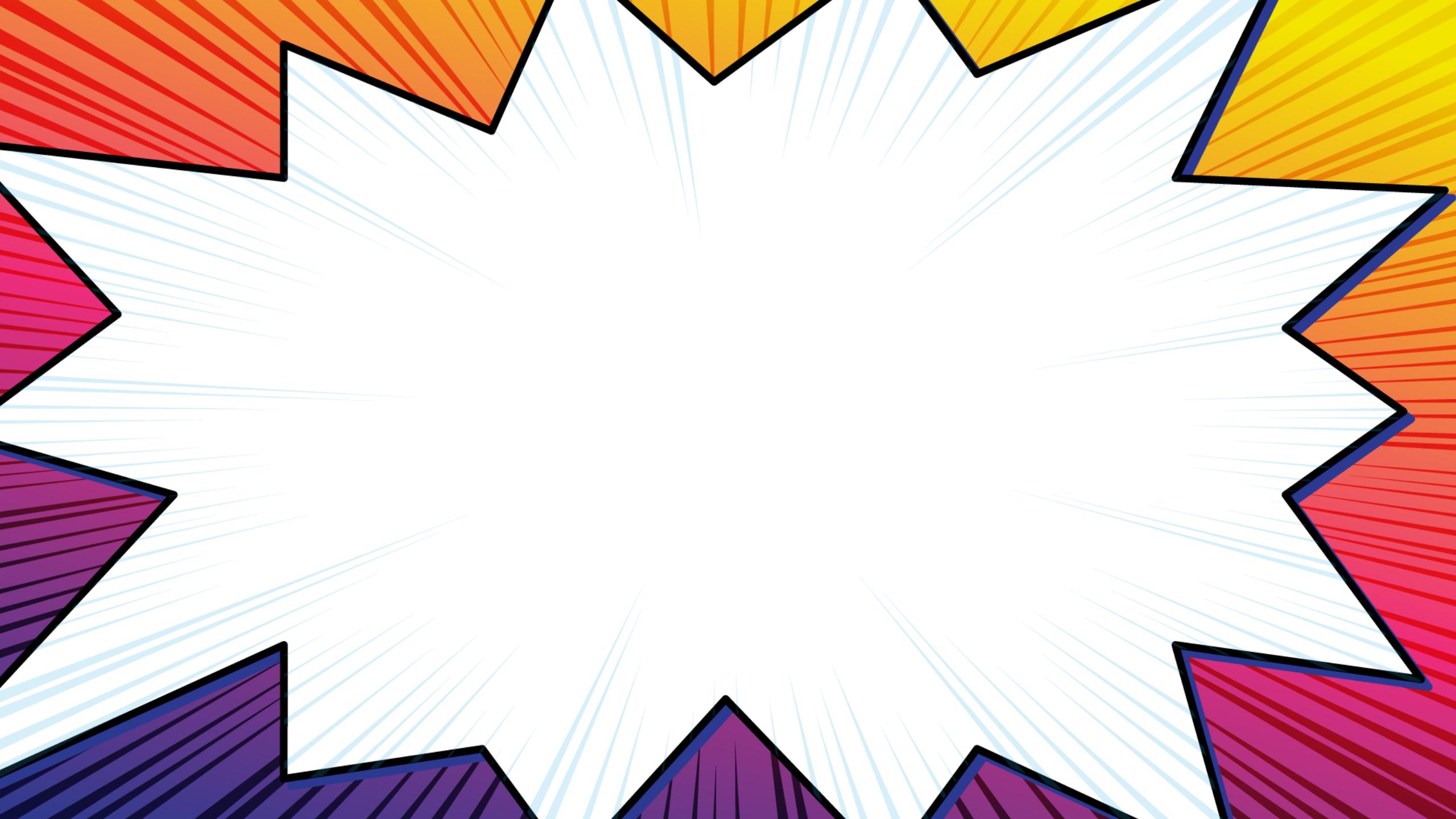
New Line Delete Line Select items... Suggest sales lines

Type	Line Discount %	Line Amount Excl. Tax	Amount Including Tax	Qty. to Ship	Quantity Shipped	Qty. to Invoice
Item		16,767.60	17,773.66	15	1	

Qty. to Ship isn't valid  
You cannot ship more than 12 units.  
[Set value to 12](#) [Corrects Qty. to Ship to 12](#)

```
local procedure CannotShipErrorInfo(): ErrorInfo
var
    ErrorMesageManagement: Codeunit "Error Message Management";
begin
    exit(ErrorMesageManagement.BuildActionableErrorInfo(
        QtyShipNotValidTitleLbl,
        StrSubstNo(Text007, "Outstanding Quantity"),
        Rec.RecordId,
        StrSubstNo(QtyShipActionLbl, "Outstanding Quantity"),
        Codeunit::"Sales Line-Reserve",
        'SetSaleShipQty',
        StrSubstNo(QtyShipActionDescriptionLbl,
        Rec.FieldCaption("Qty. to Ship"), Rec.Quantity)));
end;
```

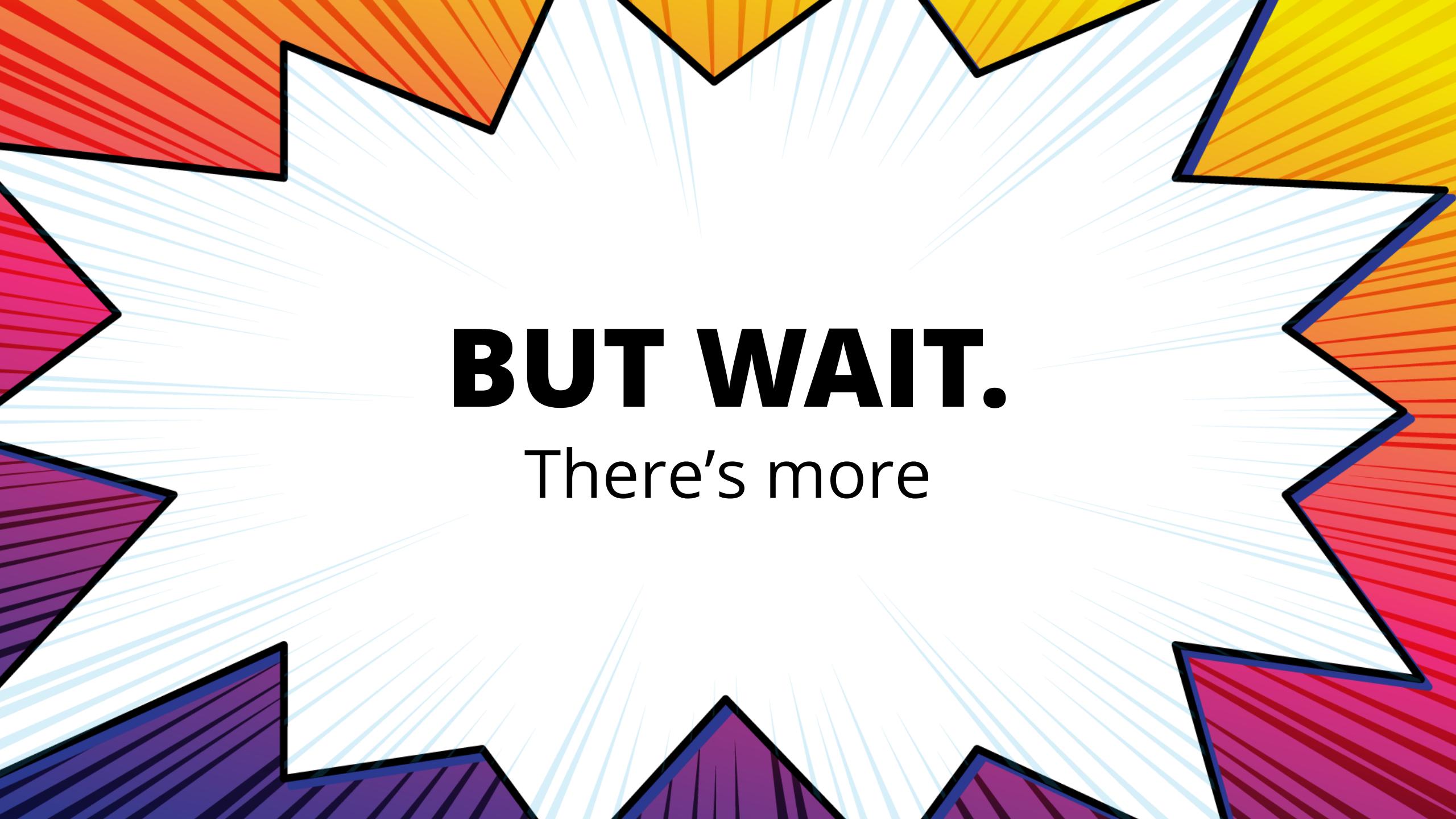




# BuildActionableErrorInfo

```
procedure BuildActionableErrorInfo(ErrorTitle: Text; ErrorMessage: Text; RecId: RecordId; ActionMessage: Text;  
ActionCodeunitId: Integer; ActionName: Text; ActionDescription: Text): ErrorInfo  
var  
    ReturnErrorInfo: ErrorInfo;  
begin  
    ReturnErrorInfo.Title := ErrorTitle;  
    ReturnErrorInfo.Message := ErrorMessage;  
    ReturnErrorInfo.RecordId := RecId;  
    if ActionDescription <> " then  
        ReturnErrorInfo.addAction(ActionMessage, ActionCodeunitId, ActionName, ActionDescription)  
    else  
        ReturnErrorInfo.addAction(ActionMessage, ActionCodeunitId, ActionName);  
    exit(ReturnErrorInfo);  
end;
```





**BUT WAIT.**

There's more

# BuildActionableErrorInfo

```
procedure BuildActionableErrorInfo(ErrorTitle: Text; ErrorMessage: Text; RecId: RecordId; ActionMessage: Text;  
ActionCodeunitId: Integer; ActionName: Text; ActionDescription: Text): ErrorInfo  
var  
    ReturnErrorInfo: ErrorInfo;  
begin  
    ReturnErrorInfo.Title := ErrorTitle;  
    ReturnErrorInfo.Message := ErrorMessage;  
    ReturnErrorInfo.RecordId := RecId;  
    if ActionDescription <> " then  
        ReturnErrorInfo.addAction(ActionMessage, ActionCodeunitId, ActionName, ActionDescription)  
    else  
        ReturnErrorInfo.addAction(ActionMessage, ActionCodeunitId, ActionName);  
    exit(ReturnErrorInfo);  
end;
```



# Add a Second Action!

```
ErrorDialogWithTwoActions.Title := 'The line dimension value isn't valid';
  ErrorDialogWithTwoActions.Message := StrSubstNo('The dimension value must be blank for the dimension %1 for Vendor %2', DimensionCode,
VendorCode);
  ErrorDialogWithTwoActions.DetailedMessage('Add some text to help the person troubleshooting this error.');

ErrorDialogWithTwoActions.AddAction(
  'Set value to blank',
  Codeunit::FirstFixitCodeunit,
  "FirstFixitCodeunitMethodName"
);
ErrorDialogWithTwoActions.AddAction(
  'OK',
  Codeunit::SecondFixitCodeunit,
  "SecondFixitCodeunitMethodName"
);
ErrorDialogWithTwoActions;
```



# Actionable errors References

<https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/developer/devenv-error-handling-guidelines>

<https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/developer/devenv-actionable-errors>

<https://learn.microsoft.com/en-us/dynamics365/business-central/dev-itpro/developer/devenv-actionable-errors#error-messages-with-multiple-actions---how-to-use-them>



Customer Card



✓ Saved



H

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## 10000 · Adatum Corporation

[Home](#) [Request Approval](#) [New Document](#) [Prices & Discounts](#) [Customer](#) [Report](#)[Actions](#) [Related](#) [Reports](#) [Automate](#) [Fewer options](#)

Contact Apply Template Merge With... Send Email

## General

No.	10000	Salesperson Code	JO
Name	Adatum Corporation	Responsibility Center	
Name 2	Department or extended Business Name	Document Sending Profile	
IC Partner Code		Total Sales - Fiscal Year	60,672.80
Balance (\$)	0.00	Costs (\$)	40,255.70
Balance (\$ As Vendor	0.00	Profit (\$)	20,417.10
Balance Due (\$)	0.00	Profit %	33.7
Credit Limit (\$)	0.00	Last Date Modified	5/12/2024
Blocked		Disable Search by Name	<input checked="" type="checkbox"/>
Privacy Blocked	<input checked="" type="checkbox"/>		

[Show less](#)

Details Attachments (0)

## Customer Picture

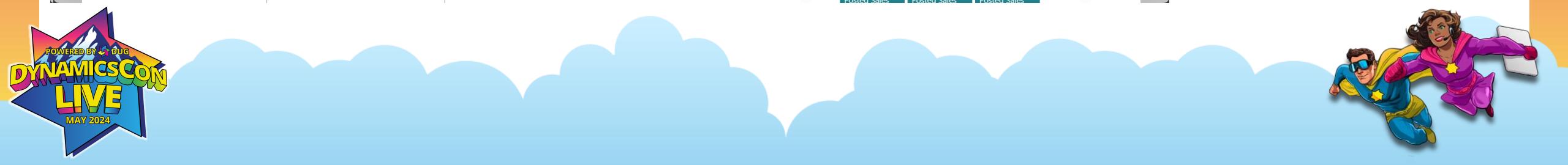


## Sell-to Customer Sales History

Customer No. 10000

0	0	7
Ongoing Sales Quotes	Ongoing Sales Blanket Orders	Ongoing Sales Orders
2	0	0
Ongoing Sales Invoices	Ongoing Sales Return Orders	Ongoing Sales Credit Memos
33	33	0
Posted Sales	Posted Sales	Posted Sales

many other  
w create a  
that is shown in



# Give users a hint for field values

Property: **InstructionalText**

Sets the string used for instructions in the UI.

The default is an empty string, which means there are no instructions. According to the user assistance model for Business Central, apps are expected to apply instructional text, also called placeholder text, to setup guides and similar pages.

## Note

The InstructionalText property can be applied to Text, BigText, Guid, and Code data type fields.



# Follow Standard Nomenclature



When naming fields, make sure to use nomenclature the user will know.

Avoid:

- ID – i.e. Customer ID
- Number
- Synonyms – i.e. Use Customer, not Client. Item, not Material.

# Follow Standard Nomenclature



The same rule pertains to Actions. Adding Groups for your app – especially if they contain actions that ‘fit’ in the existing groups, should be avoided.

Adding an arbitrary App Identifier to your actions, will ‘Scream’ “I am part of a separate app” – just like if You put a yellow driver side door onto your red car.

A user should NOT be able to tell ‘Standard’ and ‘App’ apart.



# Follow Standard Nomenclature

## Master Tables

- No. – Code[20]
- Has Number Series

## Support tables:

- Code - Code[10]
- Description Text[50]

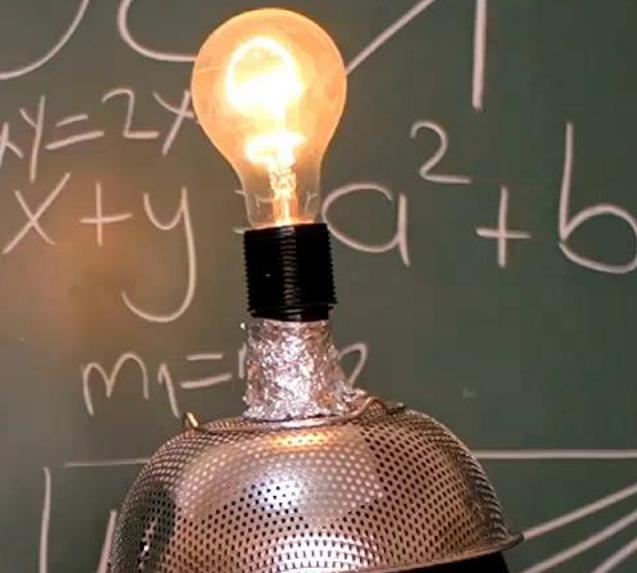


# Follow Standard Nomenclature

Visit

<https://alguidelines.dev>

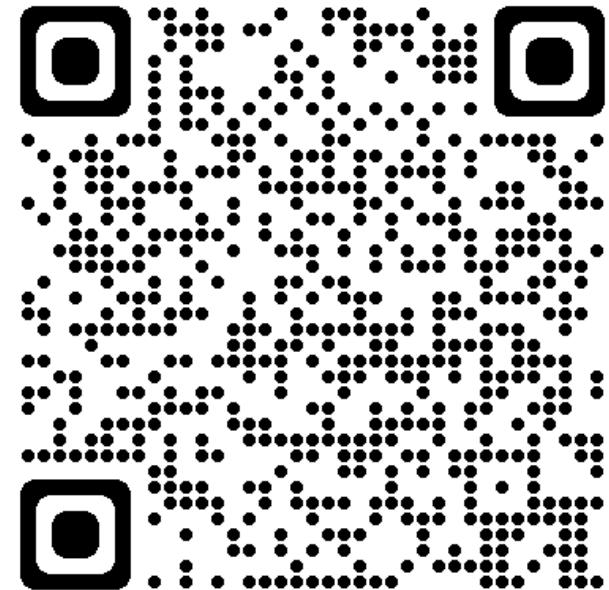




# Acknowledgments

Most code examples shown here, are retrieved, thanks to Stefan Maron and his MSDyn365BC.Code.History repository on GitHub

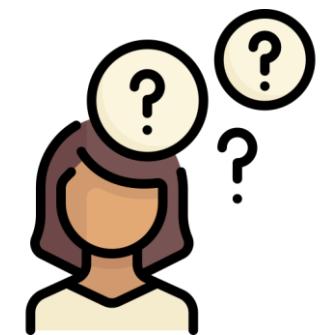
<https://github.com/StefanMaron/MSDyn365BC.Code.History>



<https://github.com/StefanMaron/MSDyn365BC.Code.History>

# Questions?

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# Thank You

