Variables and Data Access

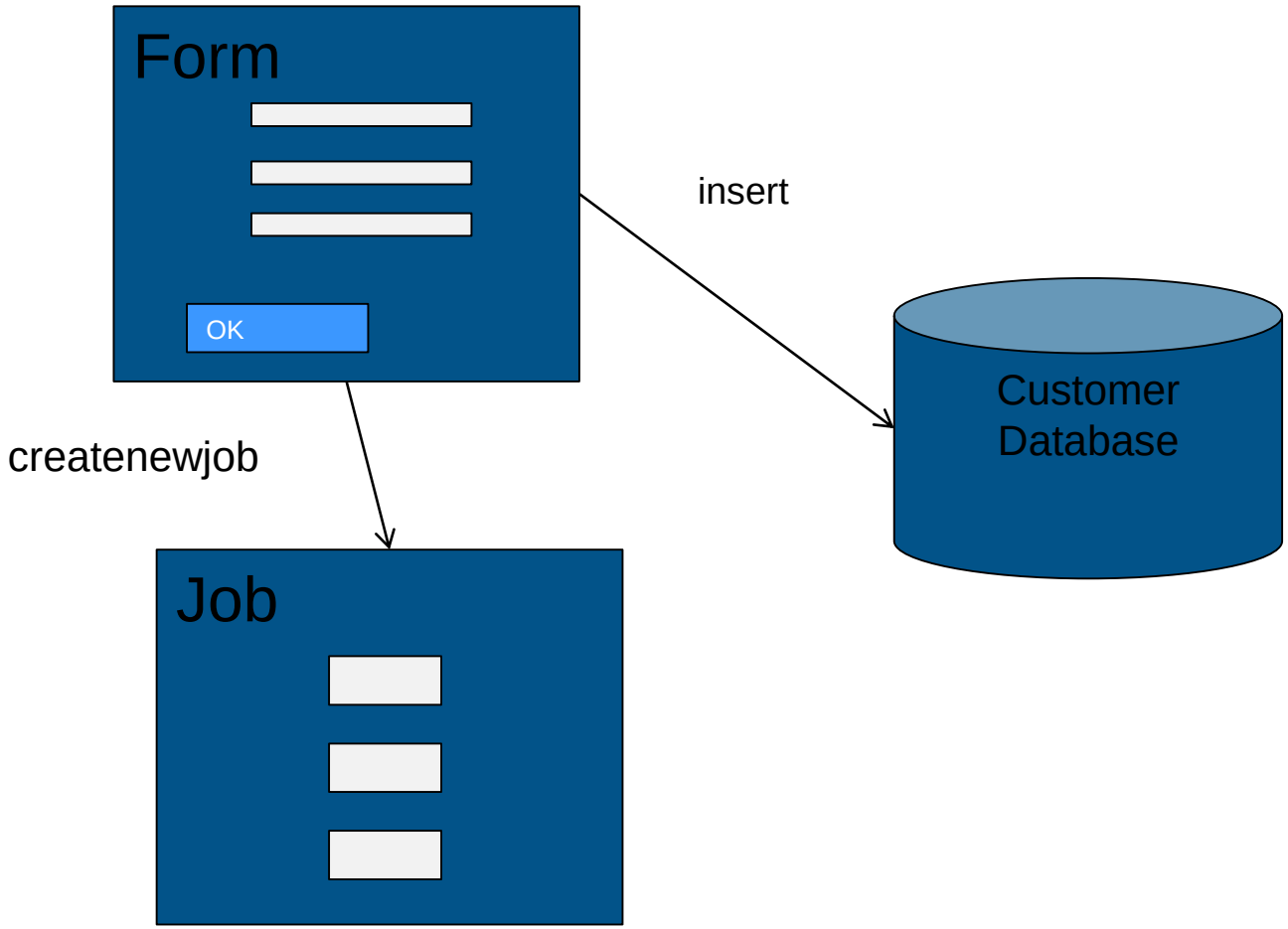
Variables - Data

- Data is stored in variables (process/server)
- Variables have a type e.g. String, date, complex (array) etc
- Must decide how much data is required in the process and how much should be held outside the process
- Guidelines
  - Primary keys/Lookup fields
  - Decision points
  - Work queue definition fields
  - Document Creation activity
  - Email activity
  - Document/Folder

Loan Application Data

- Customer Id
- Customer Name
- Address
- Postcode
- Email
- Tel
- Occupation

- Loan Amount
- Application Date
- Creditscore
- Approved (true/false)



KOFAX

Variables

- Process Initialisation Variables
  - Initialise job with data
- Input/Outputs
  - Assign variables to activities in the process
  - Inputs are read only data
  - Outputs are editable data
- Data Activity
  - Get, Update, Add, Delete data from SQL/Oracle database
  - Can also run views and stored procedures (including procedures with parameters)
  - Can return a single row (multiple fields) or multiple records (array – complex variable)

What is a Variable?

- A variable is used to store data in Kofax TotalAgility
- A variable display name can have upper and lower case letters and spaces, e.g. Loan Amount
- The variable ID however must start with a letter and cannot contain spaces, e.g. LOAN_AMOUNT
- The variable type describes the type of data that the variable will store, e.g. String, Date.

Name	**Type**	**Value**	**ID**
Customer Name	String	Robert De Nero	Name
Customer Address	String	Hollywood	Address
Loan Amount	Currency	1000.00	Loan_Amount

How are Variables Used?

- Data may be collected at the beginning of the process or during the process:
  - Process Initialization Variables
    - Data collected at the beginning of the process
    - For example, to process a loan application, customer details and the loan amount are required
  - Process Initialization Variables will also be displayed on a Create new job form if one is generated for a process. The form control type is determined by the Data Type

How are Variables Used?

Process Initialization Variables

Variables

New | Initialization order

Name	ID	Type	Value	Initialization
Approval Body	APPROVAL_BODY	String	Use the following link to appro...	
Approval Email Subject	APPROVAL_EMAIL_SUBJECT	String	A Loan Requires Approval	
Approval URL	APPROVAL_URL	String	http://localhost/TotalAgility/for...	
Approved	APPROVED	Bool	false	
CASE_REFERENCE	SPP_CASE_REFERENCE	System	SPP_CASE_REFERENCE	
Creditscore	CREDITSCORE	Short	0	
Customer Id	CUSTOMER_ID	Long	1	✓
Email Body	EMAIL_BODY	String	Your loan application has been ...	
Email From	EMAIL_FROM	String	admin@kofax.com	
Email Subject	EMAIL_SUBJECT	String	XYZ Bank Personal Loan Confir...	
Email To	EMAIL_TO	String	ssmyth@kofax.com	
First Name	FIRST_NAME	String	Robert	✓
ID	SPP_ID	System	SPP_ID	
Last Name	LAST_NAME	String	De Niro	✓
Loan Amount	LOAN_AMOUNT	Currency	5000	✓
Loan Application Document Id	LOAN_APPLICATION_DOCUMENT	String		✓

Loan Application Create New Job Form

Loan ApplicationBuildCNJForm v1 Released

LoanApplication

Customer Id

First Name

Last Name

Loan Amount

Loan Application Document Id

Case Reference

Create Case | Cancel

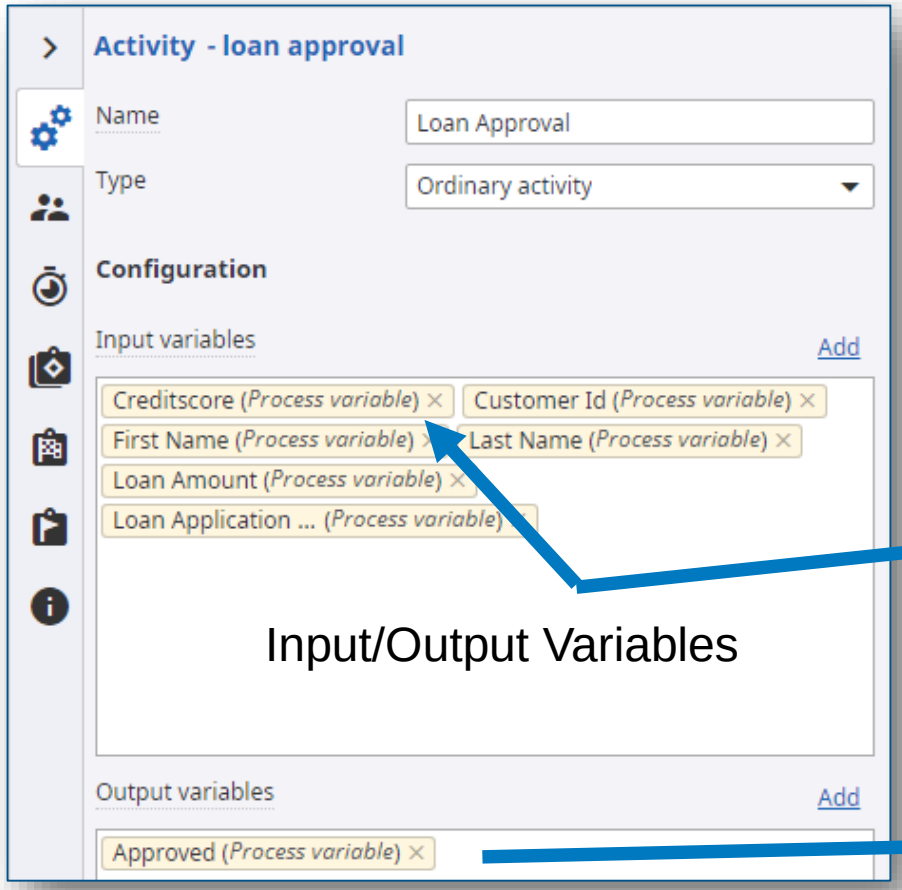
KOFAX

How are Variables Used? (cont.)

- Input Variables
  - Data that needs to be visible to an activity for it to be performed, e.g. to complete the ‘Loan Approval’ activity we could add Customer Name, Loan Amount and Credit Score variables as inputs to the activity
- Output Variables
  - Data that is output from a specific activity within the process, e.g. an Approved variable is set to TRUE
- Input/Output Variables will also be displayed on Activity forms if they are generated for a process
  - Inputs will appear as **read only** controls on an Activity form
  - Outputs will appear as **editable** controls on an Activity form

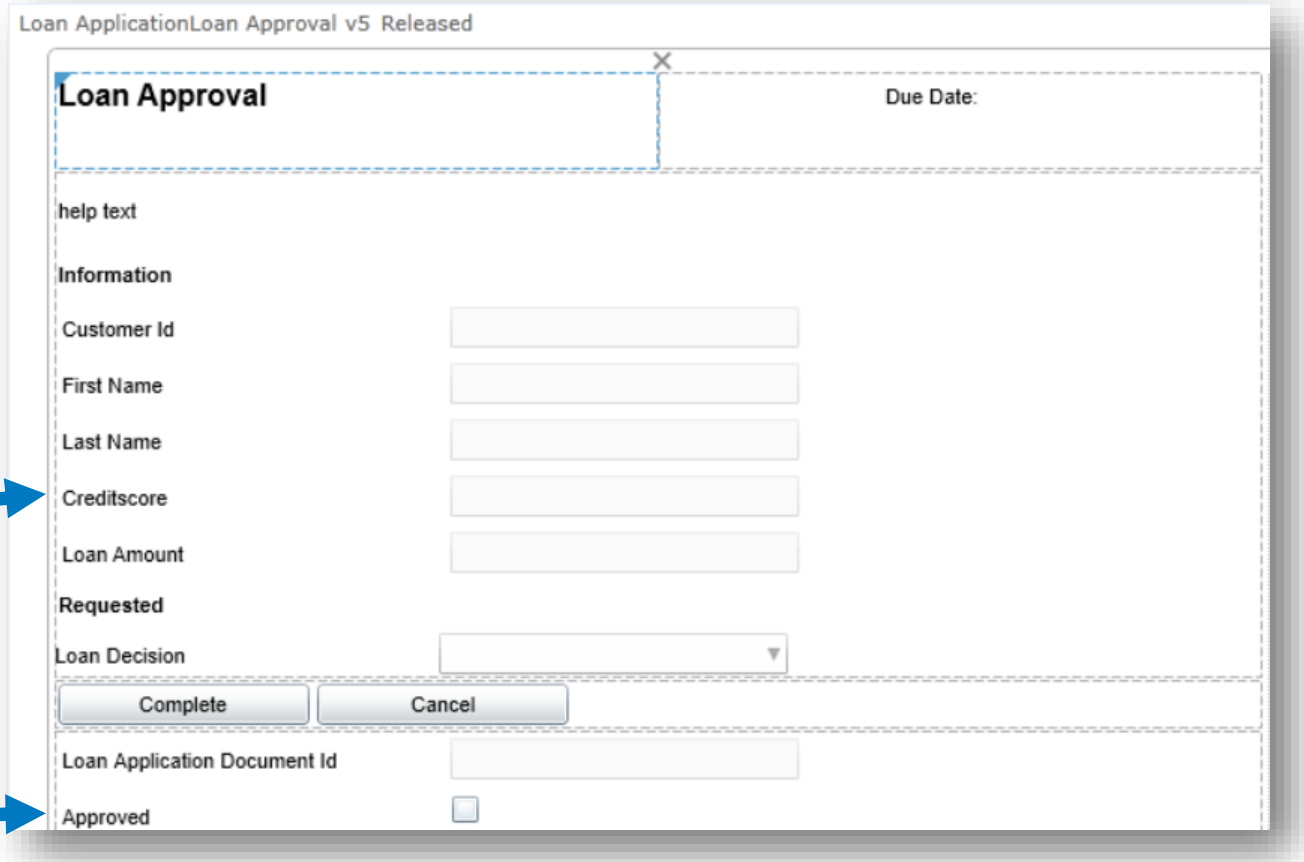
How are Variables Used? (cont.)

Loan Approval Activity in Process



Input/Output Variables

Loan Approval Activity Form



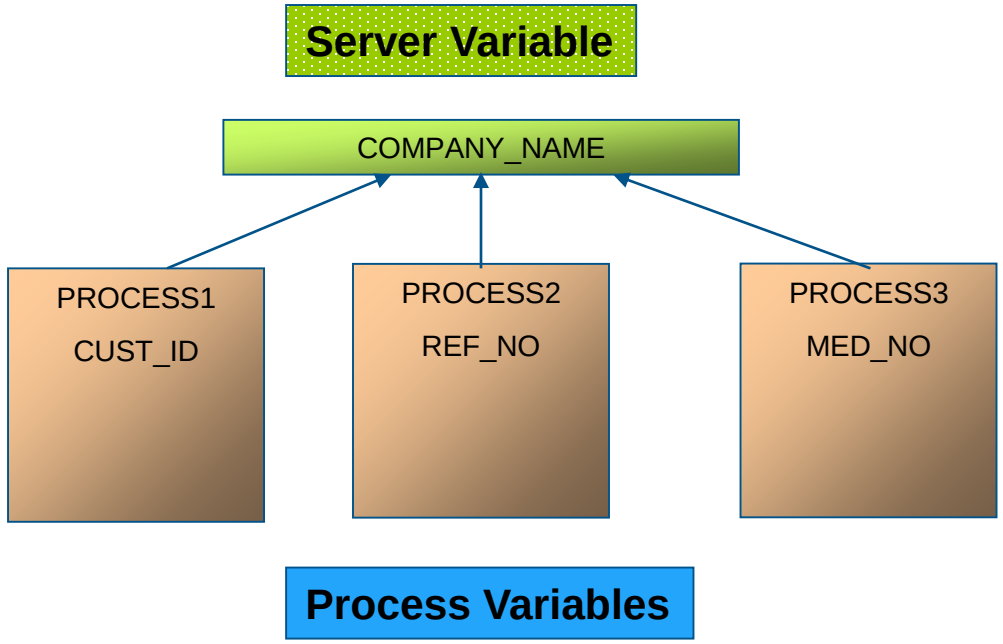
KOFAX

What is a Variable?

- There are multiple types of variables:
  1. Process Variables
  2. Server Variables
  3. Case Variables
  4. SYSTEM Variables
  5. Document Variables
  6. Folder Variables
- Process and Server variables can be further broken down into:
  - Simple variables (1 value)
  - Complex variables (multiple values / types, e.g. an array)

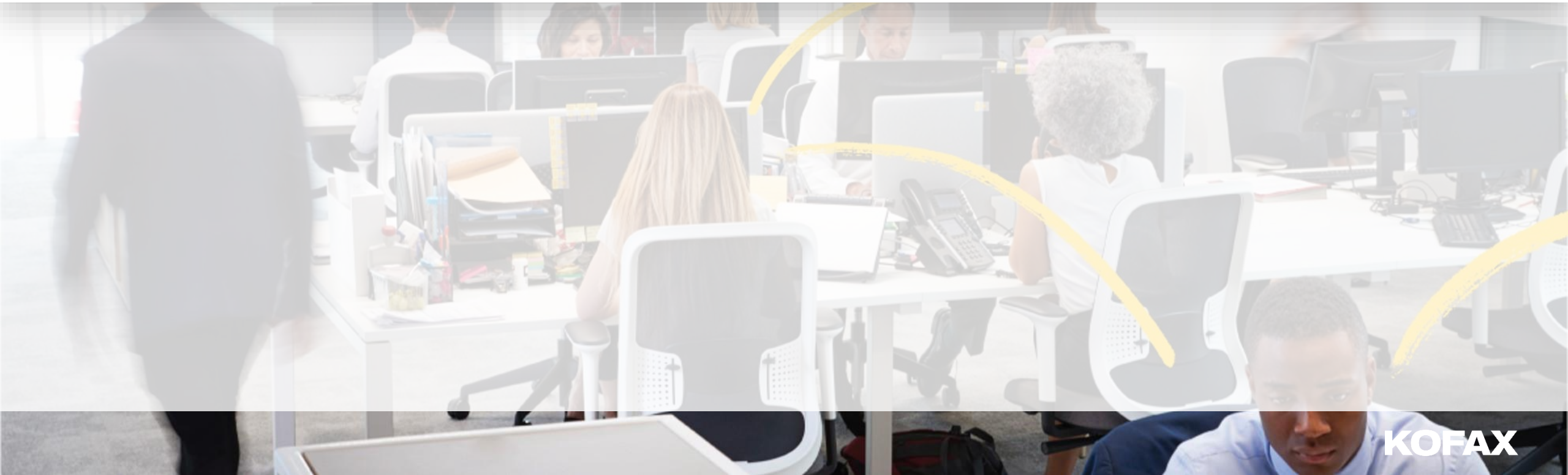
Process, Case, and Server Variables

- **Process Variables**
  - Process variables are local (private) to the process they are created for
- **Case Variables**
  - Case variables are specific to ‘Case definition’ processes
  - Case fragments can read and update case definition variable
- **Server Variables**
  - Are global variables, i.e. visible to all business processes



Embedded processes can read and update the main process variables. Process and Server variables can be of *complex* or *dynamic* type.

Create a Process Variable

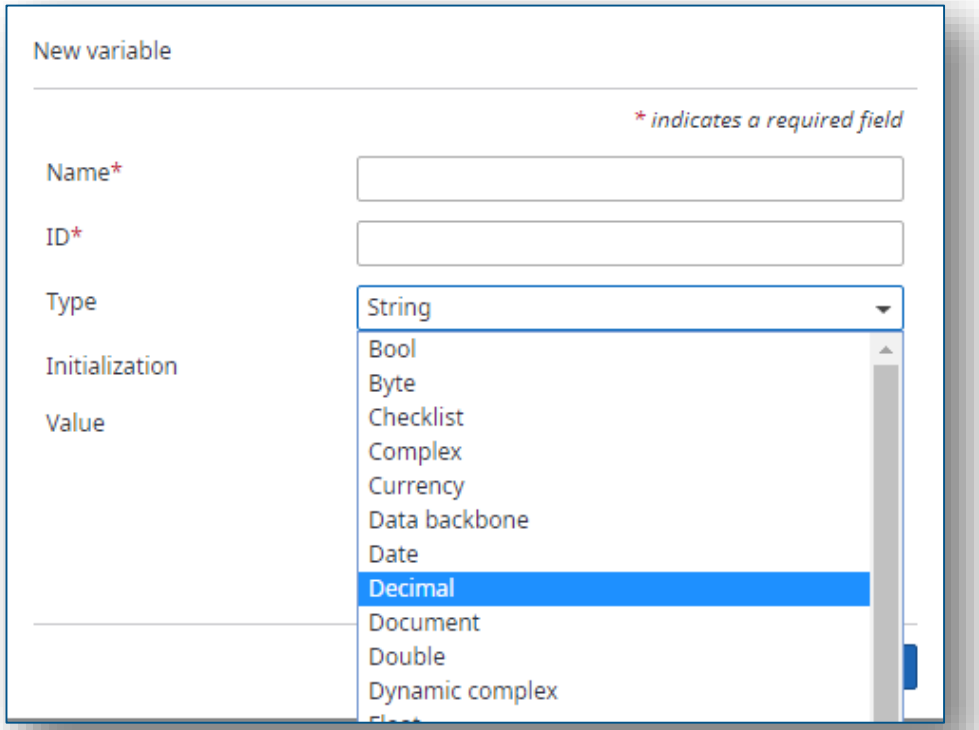


Process Variables

- A variable is a storage location for values that are retrieved at runtime
- Use Process Variables to store data for a specific process
- Process Variables hold values for items that change during the execution of a process

Creating a Process Variable

- Open the process
- Click the **Variables** tab and click **New**



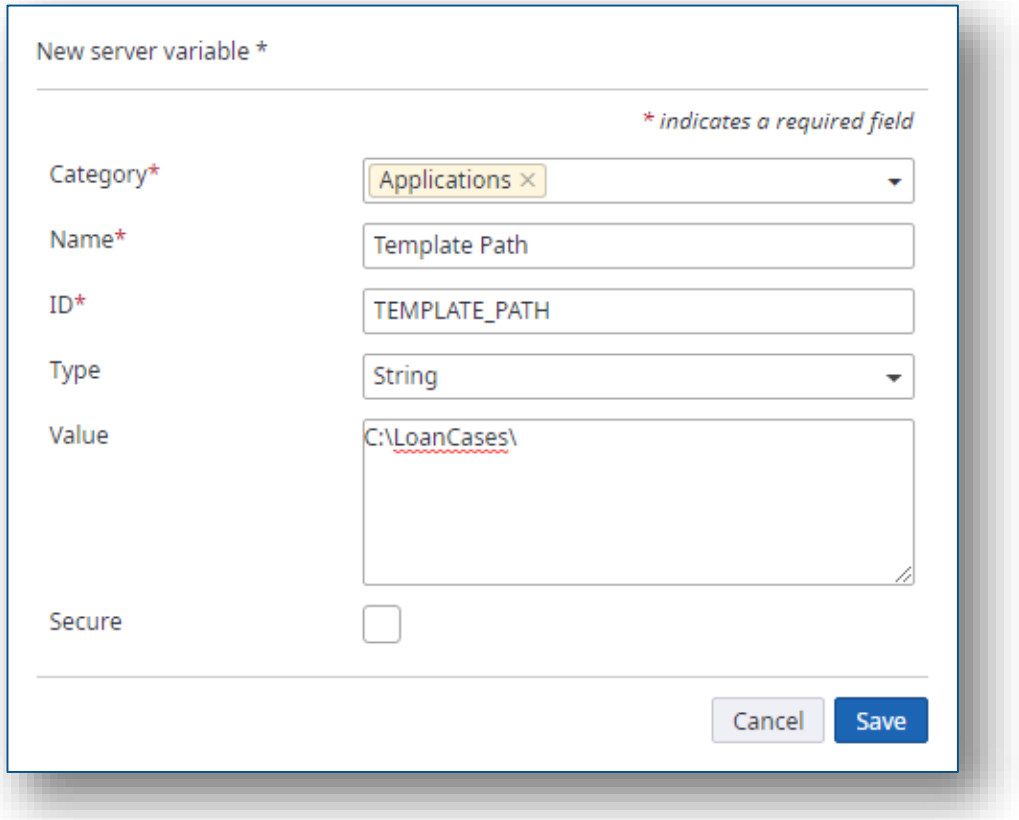
Case variables are created in the same way as process variables, except you create them within a case definition process

Server Variables

- Server variables are global variables that can be accessed and modified by any process
- Once the value of a server variable is changed, this becomes the value of that variable in all jobs that utilize it (so it only has to be modified once)
- **Example**
  - Database connection string
  - Template path
  - Company name
  - VAT rate

Creating a Server Variable

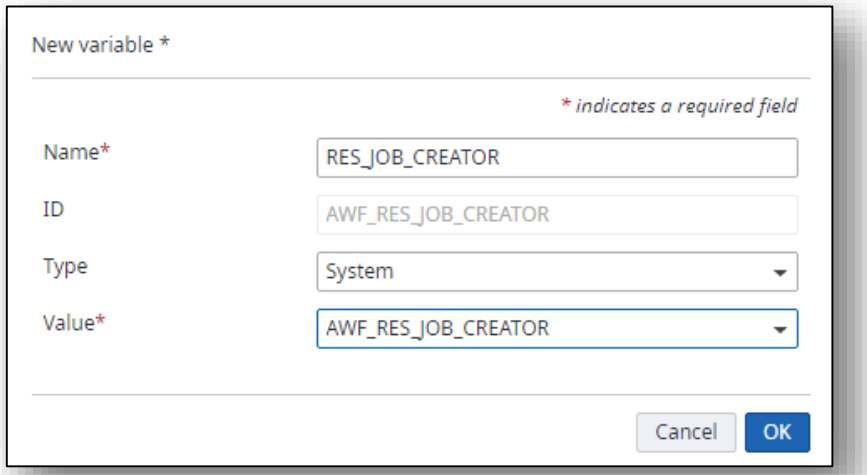
- From the **Main** menu navigate to **System data > Server variables** and click **New**



Server variables are created in the same way as process/case variables, except you don't need to open a process.

System Variables

- **SYSTEM** variables are inherent to TotalAgility and give you access to system data which you typically do not know at design time
  - For example, who created the job, the job ID, the job state, etc.
- **Examples**
  - AWF_RES_JOB_CREATOR holds the User ID of the creator of a job
  - AWF_JOBID holds the ID of the job



System variables are simple non-editable process variables that can be reused whenever required. The Help for Kofax TotalAgility contains a list of the System variables.

Document Variables

- A document variable is used to store a reference to a document in the TotalAgility database
- Use a Document Variable as a process initialization variable or as an activity input or output variable
- You can also use document fields directly as input or output parameters to an activity
- When you create a job on a process that uses a document variable, the runtime instance ID of the document is stored in the document variable

Folder Variables

- A folder variable is used to store a reference to a folder in the TotalAgility database
- When you create a job on a process that uses a folder variable, the runtime instance ID of the folder is stored in the folder variable

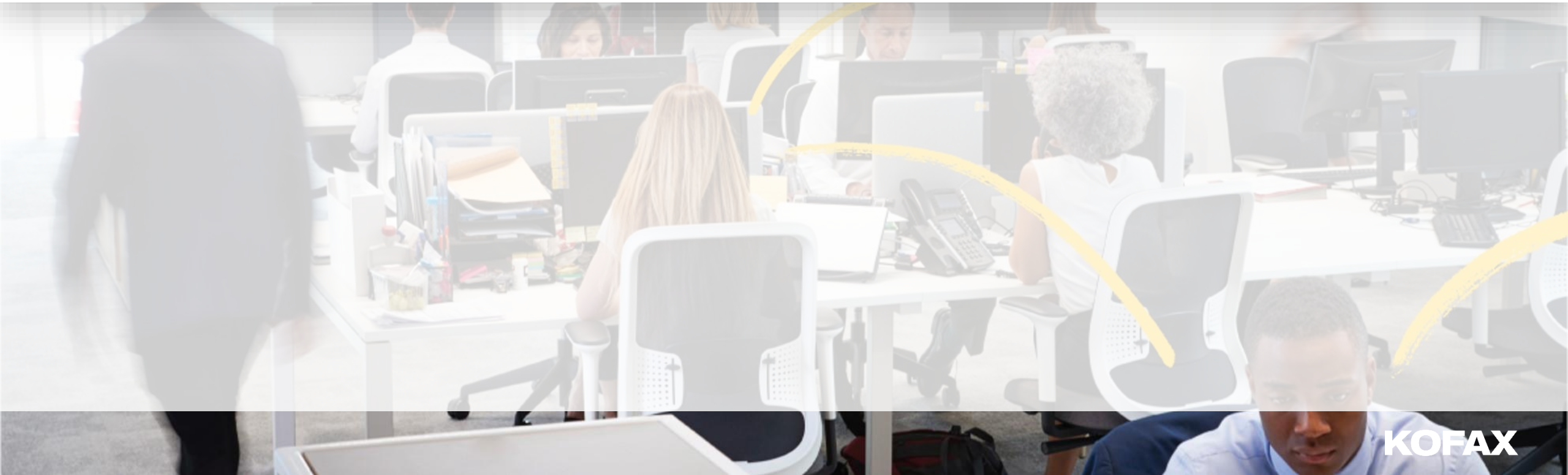
For a scan enabled process, you can set the variable for process initialization only when it has the root folder as its value. However, for a normal process, the variable value can be a root folder or sub-folder

Where to use Document or Folder Variables

- Use a document or folder variable in activities such as Ordinary, Email, Business Rule, .NET and in Decision activities
- Use fields or the System properties of a field from a document or folder variable:
  - Any place within a process or rule where a variable can be used
  - In an activity of any type in a process where a variable can be used

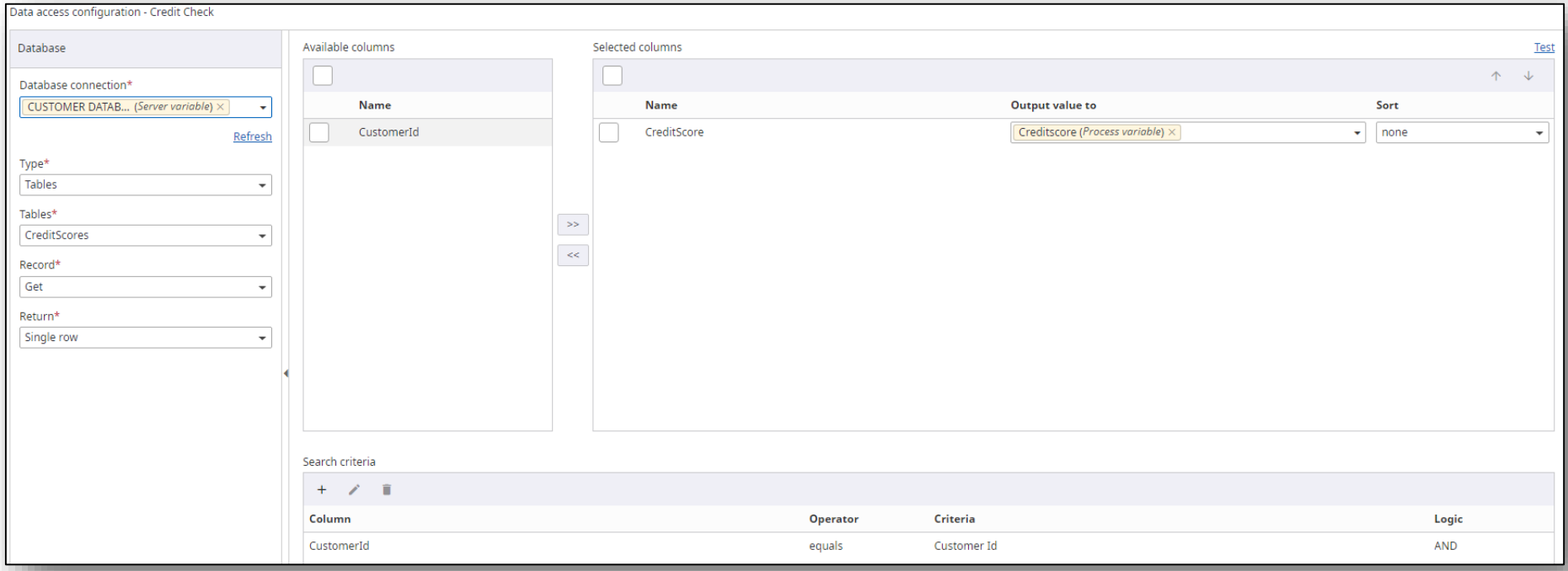
You must initialize a document or folder variable before using it in a process or activity; otherwise the job is suspended

Data Access Activity



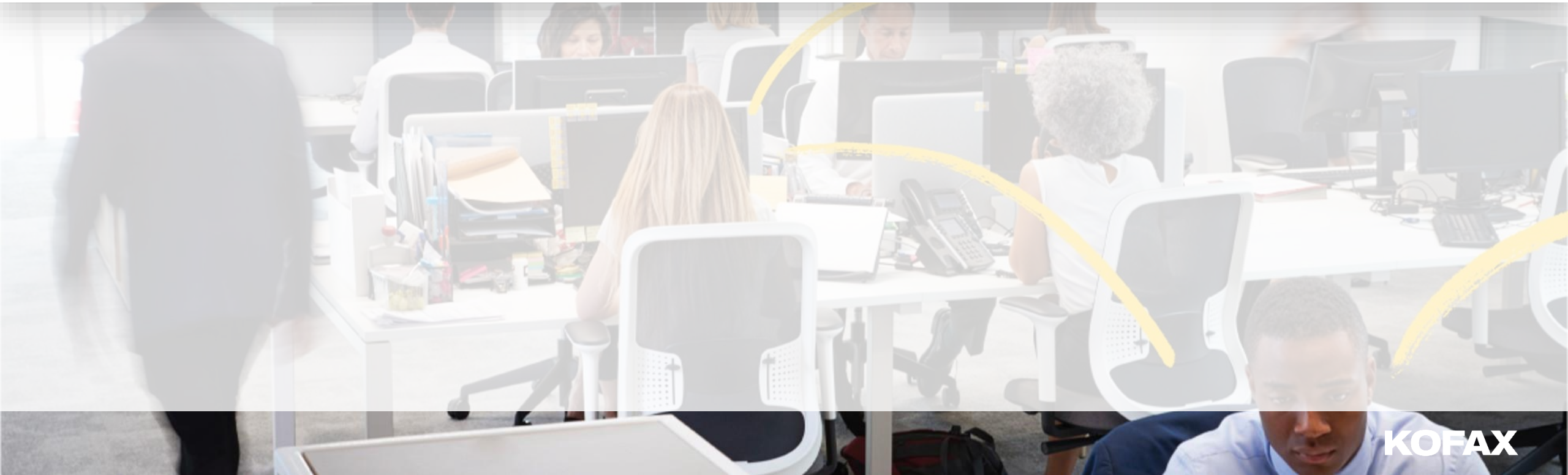
Data Access Activity

- Activity that can be used to **Get/Add/Update/Delete** record(s) in an SQL/Oracle database
- Can also run **Views** and **Stored Procedures**
- Require a **Connection String** to a database
- Requires that the **Service Account** has appropriate permissions on the SQL/Oracle database



KOFAX

Work Types

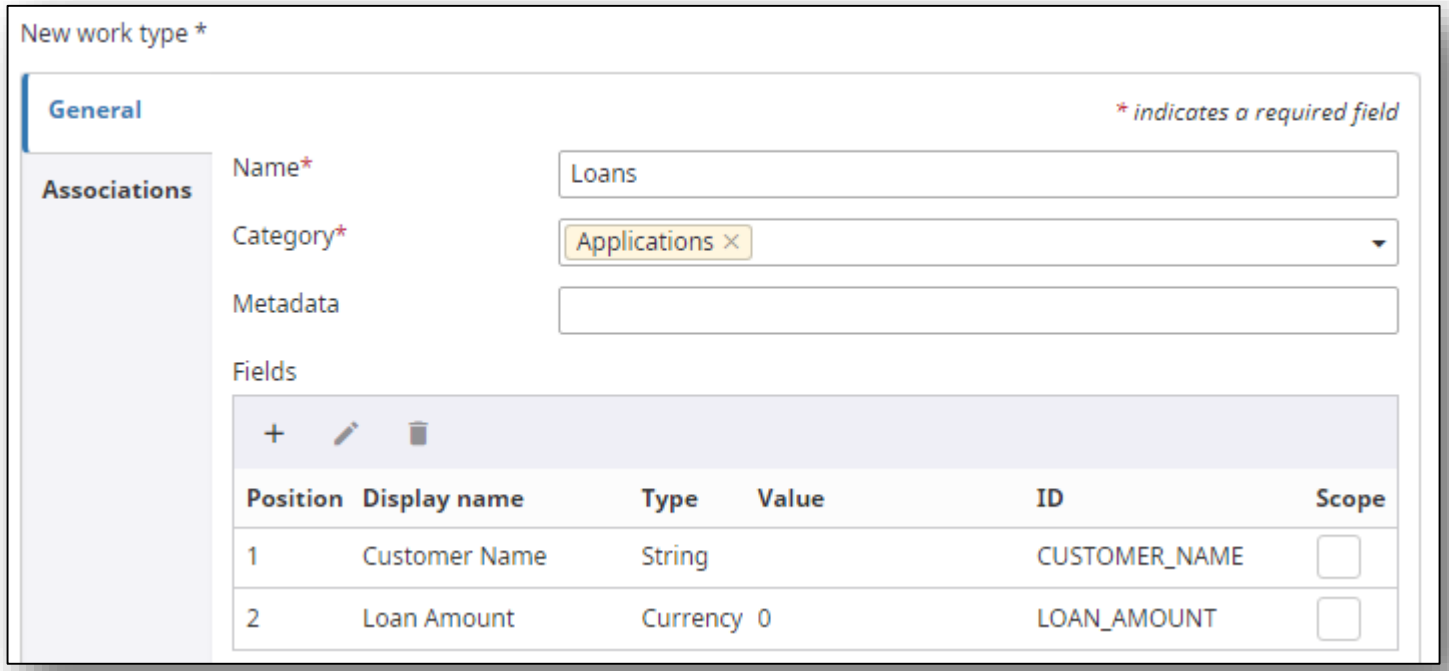


Work Types – Not covered in Essentials

- Work queues are a primary method of managing workflow in a business process
- They are personalised ‘To Do’ lists - used by operational staff to control, manage and execute their work tasks
- Work queues are usually rendered on a web page
- TotalAgility enables the Business Analyst/Developer to quickly and easily define ‘customised’ work queues known as Work Types

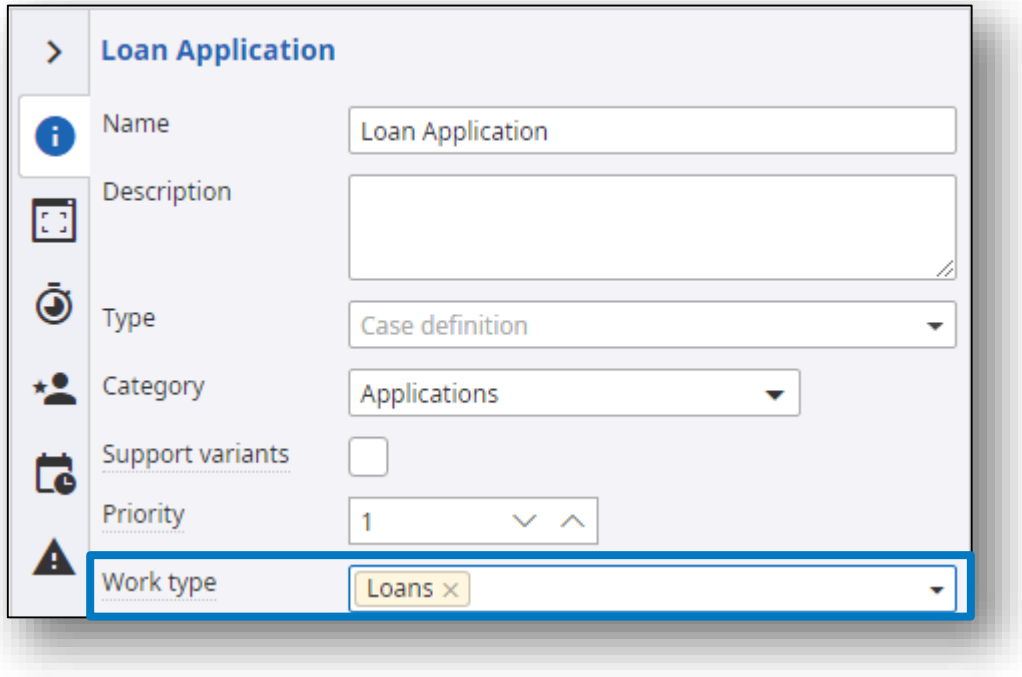
Creating a Work Type

- From the **Main** menu navigate to **System data > Work types** and click **New**
- Enter a work type name
- Enter any fields you wish to see in the queue
- Enter any metadata (optional)



Associating a Work Type with a Process

- Once you have created a Work Type you can then associate the Work Type with a specific process. This creates process variables for each field found in the Work Type
- Open the process
- In the **Properties** panel select the **Work type** from the dropdown list



What if I Change the Work Type?

- If you change a Work Type that has a process associated with it, the next time you open that process the Work Type definition variables are refreshed (close processes before altering the work queue definition)

- A message box is displayed to inform you of this (a similar message box is displayed when you modify the Work Type)

Why Use Work Types?

- Benefits and Considerations:
  - The ability to define the required fields within a work queue at design time reduces overall development time, as the designer can now more easily render the work queue on a web page or form
  - Allows you to define up to 30 user definable fields in addition to the 12 standard work queue fields
  - Process variables (existing or new) are used for these user defined fields
  - Field data may come from within Kofax TotalAgility or from calls to 3rd party / internal applications
  - Work Types are stored at the server level and can be associated with any process. Types can be copied, modified or deleted