

成为Mendix快速开发者

欢迎

Start	09:00
Break	10:30 – 10:45
Lunch	12:00 – 13:00
Break	14:30 – 14:45
End	16:00

- Agenda
- Questions
- Knowledge checks (Kahoot)
- Certification

Create a Mendix account
<https://signup.mendix.com/>

Install the version 9.5 of
Mendix Studio Pro
<https://marketplace.mendix.com/>

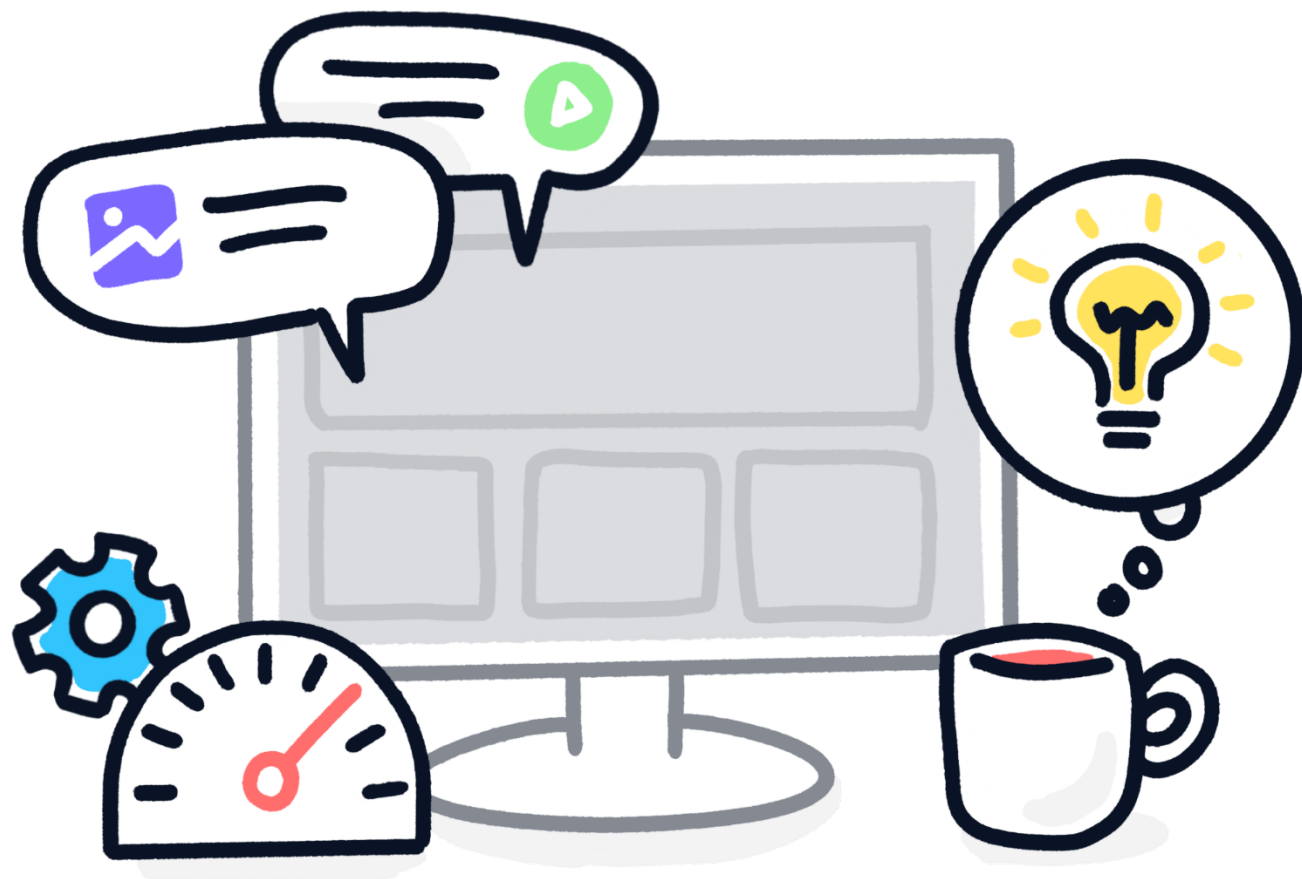
目录

- | | | | |
|---|------------------------------|----|----------------------------|
| 1 | Make it w/ Mendix | 7 | Make it smart |
| 2 | Make it together | 8 | Make it valid & consistent |
| 3 | Make it w/ Mendix Studio | 9 | Make it secure |
| 4 | Make it dynamic | 10 | Make it mobile |
| 5 | Make it automated | 11 | Go make it! |
| 6 | Make it w/ Mendix Studio Pro | | |

Make it w/ Mendix

学习目标

- 了解Mendix生态
- 了解如何获取Mendix相关信息
- 创建、完善、分享你的Profile




Academy

Home Classrooms Learning Paths Certifications Webinars

Get started with Mendix Academy


Check out our online Learning Paths to get started building your skills!

Choose an Online Learning Path




Collaborate with over 189K Mendix makers

Join the maker community and be a part of the conversation



Highlights from Forum

Upcoming Meetups



What can we help you with?

Submit a Request

Release Notes

Platform Status


Mendix Forum

data to create something amazing

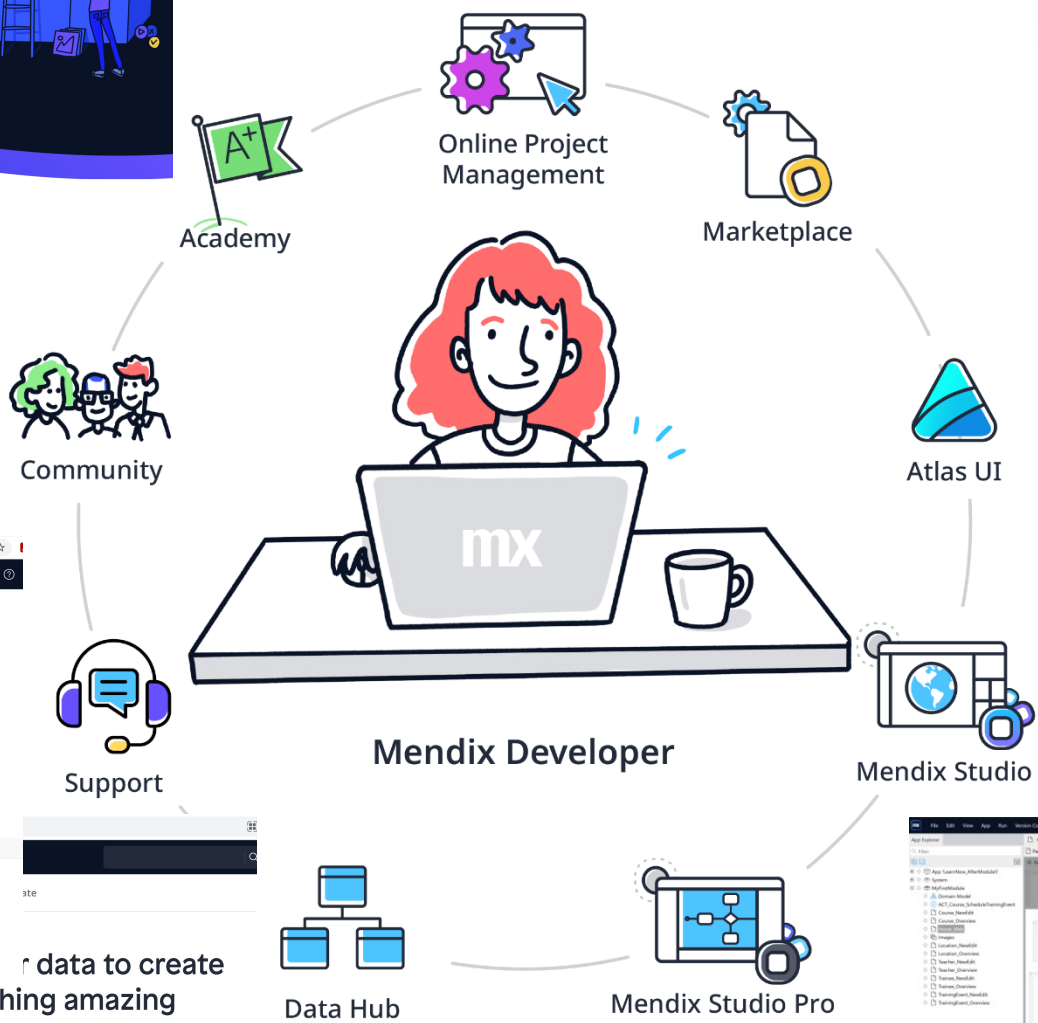
With Mendix Data Hub you find all data that is available across your Company's software landscape and use it in your Mendix projects.

Search for data...

Popular tags: No items found



Mendix Ecosystem



Developer Portal Company Buzz Company Apps

SIA Task App

View App Edit in Studio Edit in Studio Pro

Marketplace

Search Discover My Marketplace Mendix

Get Studio Pro

Widgets Connectors Modules App Design

Sell your solutions on the Marketplace

Apply to the ISV Program to showcase your low-code development skills and tap into a wider customer base for your solution.

atlasdesignsystem.mendixcloud.com/p/dashboard

Welcome to the Atlas Design System

Speed up your app design process by using our custom templates, building blocks, and widgets, and making them your own. Use this app to brand your Atlas UI app to your own brand or customer brand. This app contains all page templates, building blocks and widgets with configurations that you can reuse. You don't need to create all the pages by yourself.

Download this app in the Mendix app store.

Layout Templates

Layouts Templates Building blocks Widgets

LearnFlow Training Management

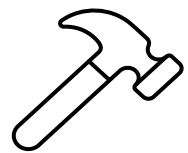
Courses Locations Teachers Trainers Training Events Add a Training Event

Atlas (Default) Home Web

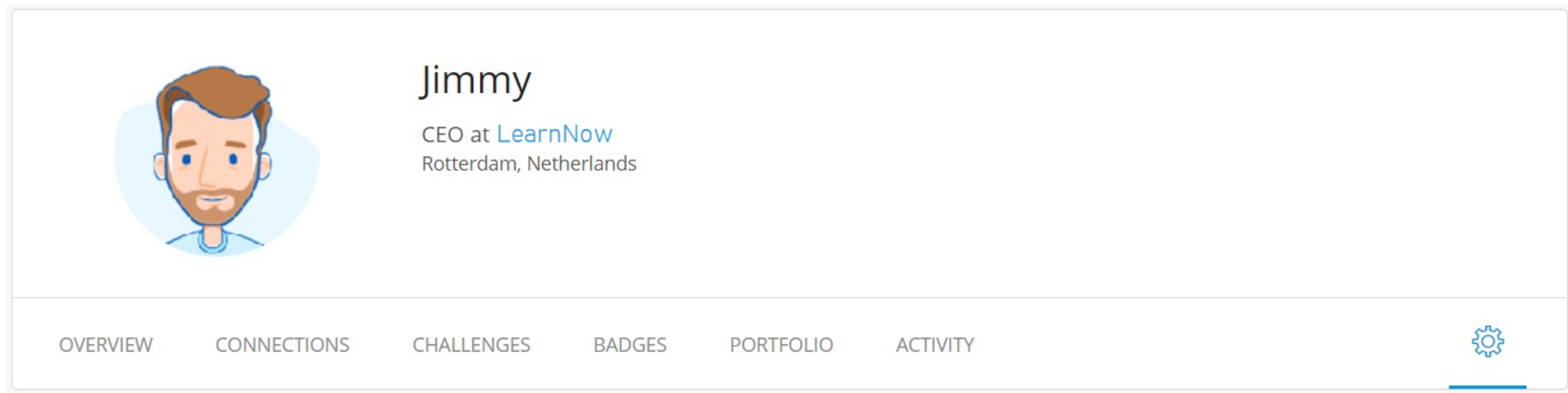
Navigation User

Build on Mendix





创建并完善你的账号



... 并上传头像

Summary

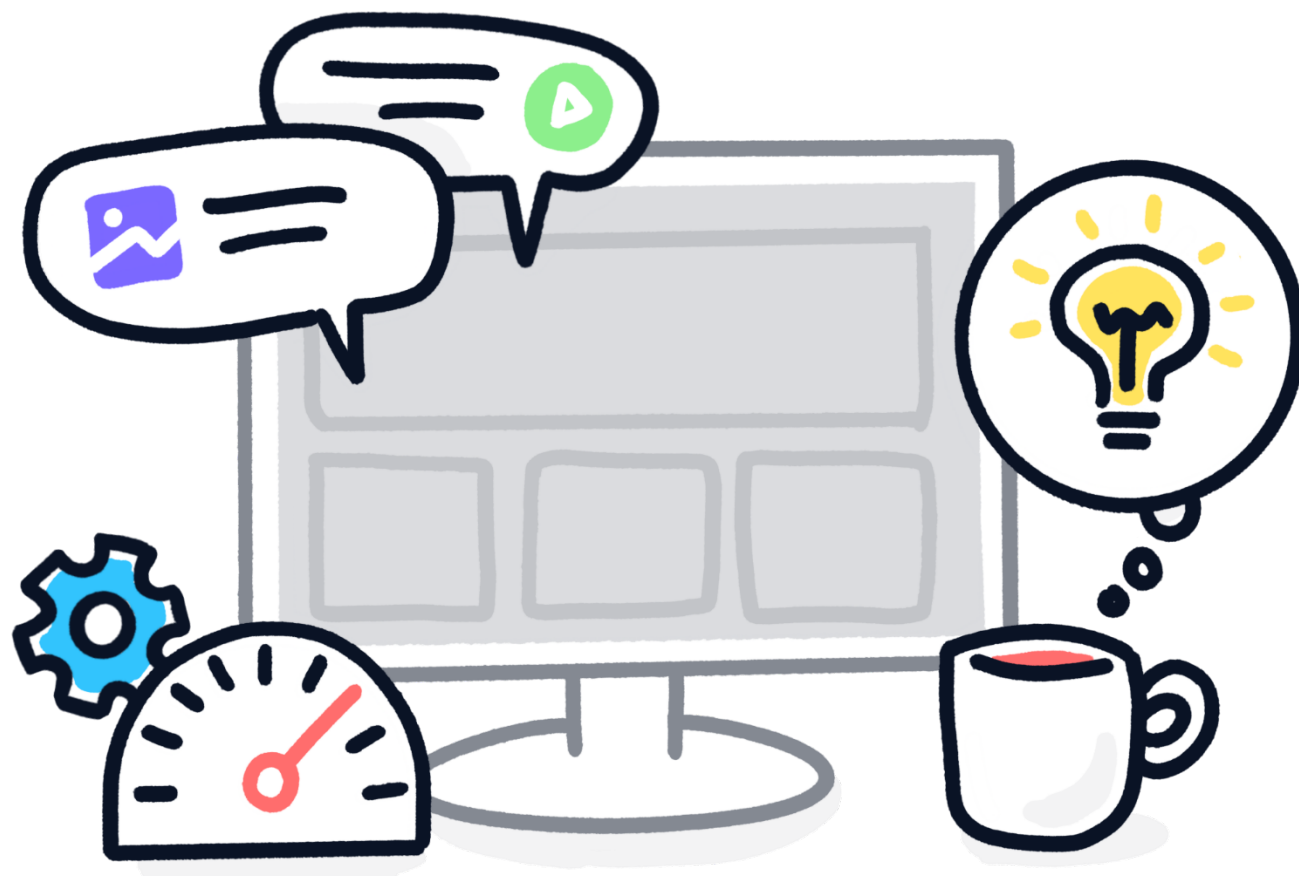
Knowledge checks

Go to kahoot.it

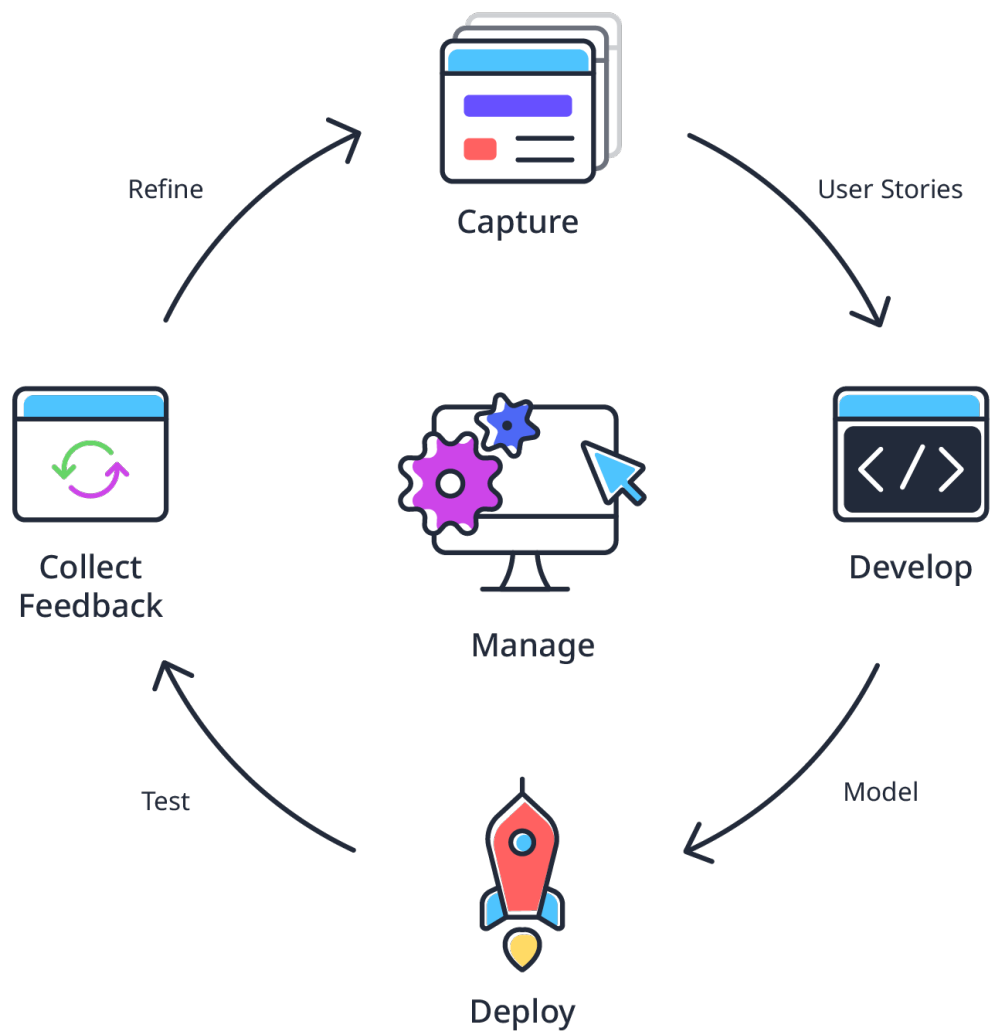
Make it together

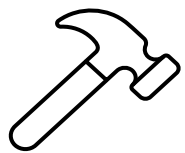
学习目标

- 了解应用生命周期
- 在示例场景中运用应用生命周期管理
- 从Mendix Developer Portal创建新工程
- 理解Mendix使用的敏捷开发方法
- 向你的Mendix工程添加成员
- 创建User Stories
- 创建线框设计稿



应用生命周期





创建新应用



Developer Portal

Company Buzz

Company Apps

My Apps

Create App

All

Pinned

Search...



Most Recent



Blank Web App

← Go Back

Start your new progressive web app based on the Mendix Atlas 3 design system. Included are a selection of widgets, building blocks and page templates to get you going quickly.

See more details in the [Marketplace](#)

v 9.6.0 Starter Apps

^ Advanced settings

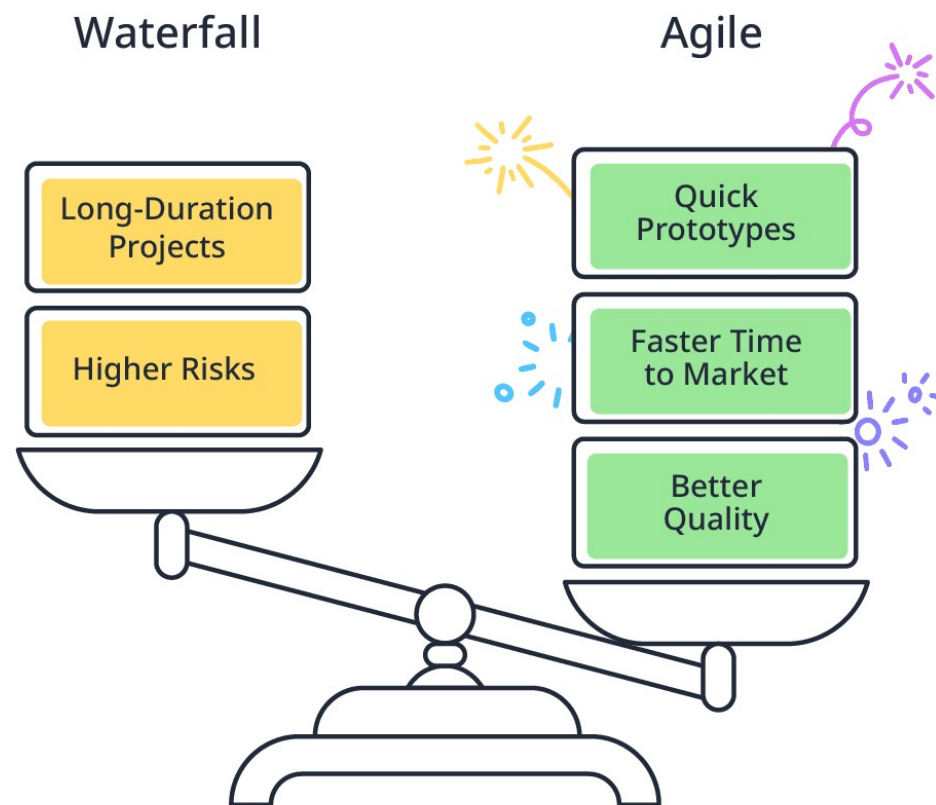
Template version

Studio Pro 9.5.0 (Template v5.0.10)

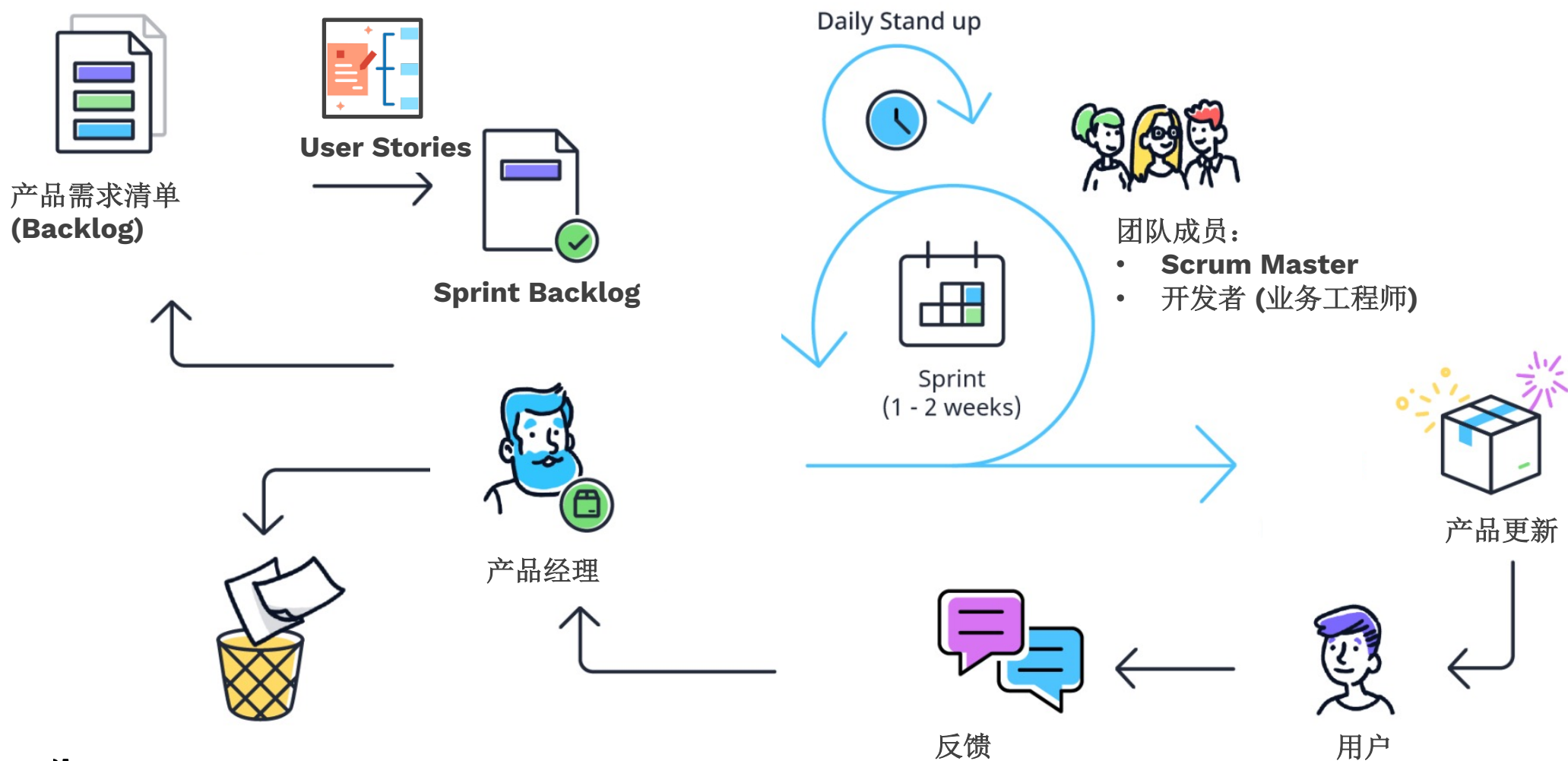


Select This Template

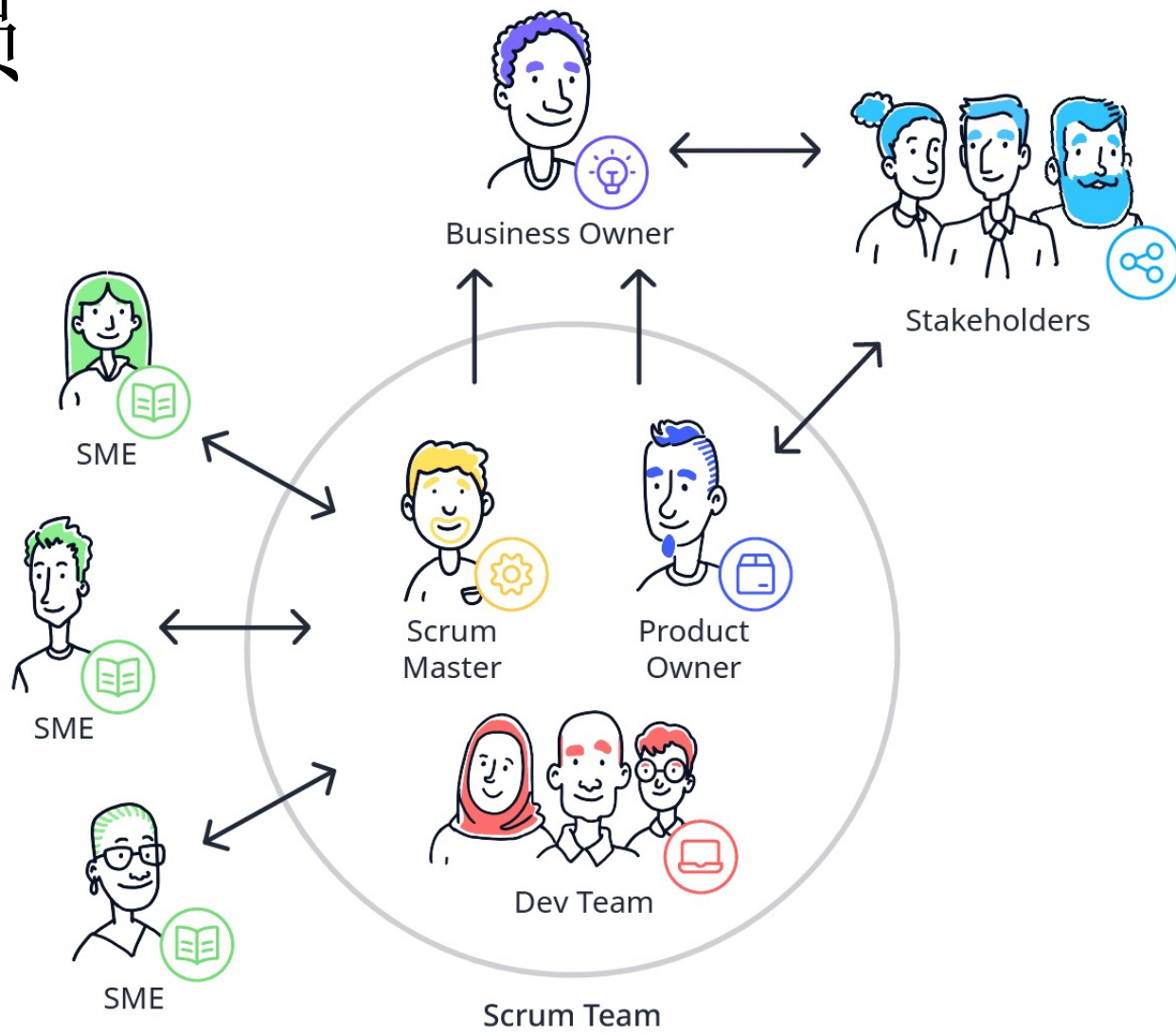
软件工程方法

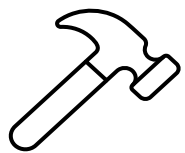


敏捷流程与角色




项目组成员





邀请团队成员

- COLLABORATE
- Project Buzz

Stories

Team

Feedback

Documents

Team Server

General Settings
- DEPLOY
- Environments

Metrics



Logs

Backups

Alerts

Mobile App

Team

<input type="text" value="Search..."/>		<div>Role settings</div>	<div>Change log</div>	<div>Invite member</div>
User ^		Role		
	<div>Nataliya van der Hoeven</div> <div>Mendix</div>	<div>SCRUM Master</div> <div>▼</div>		<div>Remove Member</div>
	<div>Jimmy</div>	<div>Business Engineer</div> <div>▼</div>		<div>Remove Member</div>

User Stories

- 拆解的产品需求
- 描述需求对于产品用户的价值
- 以Story point衡量复杂度

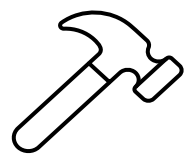
作为 管理员, 我希望 能新增培训事件, 以便于 我及时维护培训计划.

As a <user type>, I want <what>, so that <business value>.

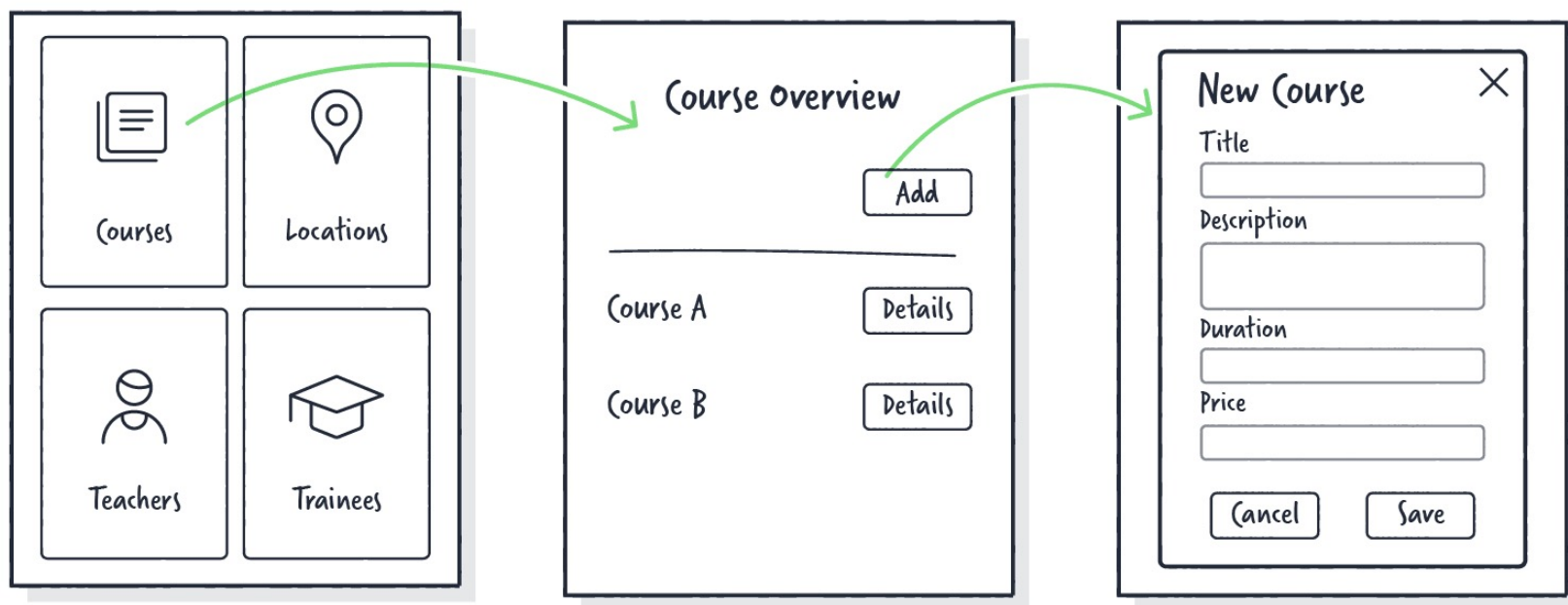
我们的虚拟场景: LearnNow 培训机构

Jimmy 是培训机构 LearnNow 公司的总监。他一直使用Excel来管理公司提供的培训课程。

随着公司规模扩大，他发觉使用现有工具管理内容逐渐变得吃力。



创建线框图



添加用户故事

The screenshot displays the 'Developer Portal' interface. A modal window is open for adding a user story. The story title is 'As an administrator, I want to be able to easily access and manage my data, so I can run my company more efficiently'. It is assigned to sprint '5270228' and belongs to 'Jimmy's ideas' for the 'LearnNow Training Management' project. The form includes sections for Description, Tasks, and Comments. The Description section contains two paragraphs: 'I need to be able to view and manage all my:' followed by a list of items (- Courses, - Locations, - Teachers, - Trainees), and 'When I am at the office, I use my desktop, but when I am travelling for work, I mostly use my tablet and mobile phone. Therefore, it's really important for me to be able to manage all of the above data from desktop, tablet, or mobile.' The right sidebar of the modal offers actions: 'Done', 'Unassigned', '5 points', 'Move Story', 'Duplicate', 'History', 'Delete', and 'Create Another Story'. The background shows a sidebar with navigation links like 'Project Buzz', 'Stories', 'Team', 'Feedback', 'Documents', 'Team Server', 'General Settings', 'Environments', 'Metrics', 'Logs', 'Backups', 'Alerts', and 'Mobile App'.

Developer Portal

LearnNow Training Management

COLLABORATE

- Project Buzz
- Stories
- Team
- Feedback
- Documents
- Team Server
- General Settings

DEPLOY

- Environments
- Metrics
- Logs
- Backups
- Alerts
- Mobile App

User Story Form:

Title: As an administrator, I want to be able to easily access and manage my data, so I can run my company more efficiently

Star: ☆ **ID:** 5270228 **Sprint:** in sprint **Project:** Jimmy's ideas **Category:** of LearnNow Training Management

Add a label

Description

I need to be able to view and manage all my:

- Courses
- Locations
- Teachers
- Trainees

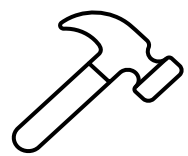
When I am at the office, I use my desktop, but when I am travelling for work, I mostly use my tablet and mobile phone. Therefore, it's really important for me to be able to manage all of the above data from desktop, tablet, or mobile.

Tasks [4/4]

Comments

Actions:

- Done
- Unassigned
- 5 points
- Move Story
- Duplicate
- History
- Delete
- Create Another Story



添加用户故事

- 导入 user stories
- 完成 ‘Get Started’ sprint

LearnNow Training Management

[View App](#) [Edit in Studio](#) [Edit in Studio Pro](#)

COLLABORATE

[Project Buzz](#)
[Stories](#)
[Team](#)
[Feedback](#)
[Documents](#)
[Team Server](#)
[General Settings](#)

DEPLOY

[Environments](#)
[Metrics](#)
[Logs](#)
[Backups](#)
[Alerts](#)
[Mobile App](#)

Stories

[Overview](#) [Sprint status](#)

[New Sprint](#) [New Story](#) [New Label](#) [More](#)

Get started
Active sprint

No stories yet! [Add a new story](#) to get started.

Backlog
1 story

...

[Import / Export](#)
[Manage Labels](#)
[Completed Sprints](#)
[History](#)
[Switch To Old UI](#)

Summary

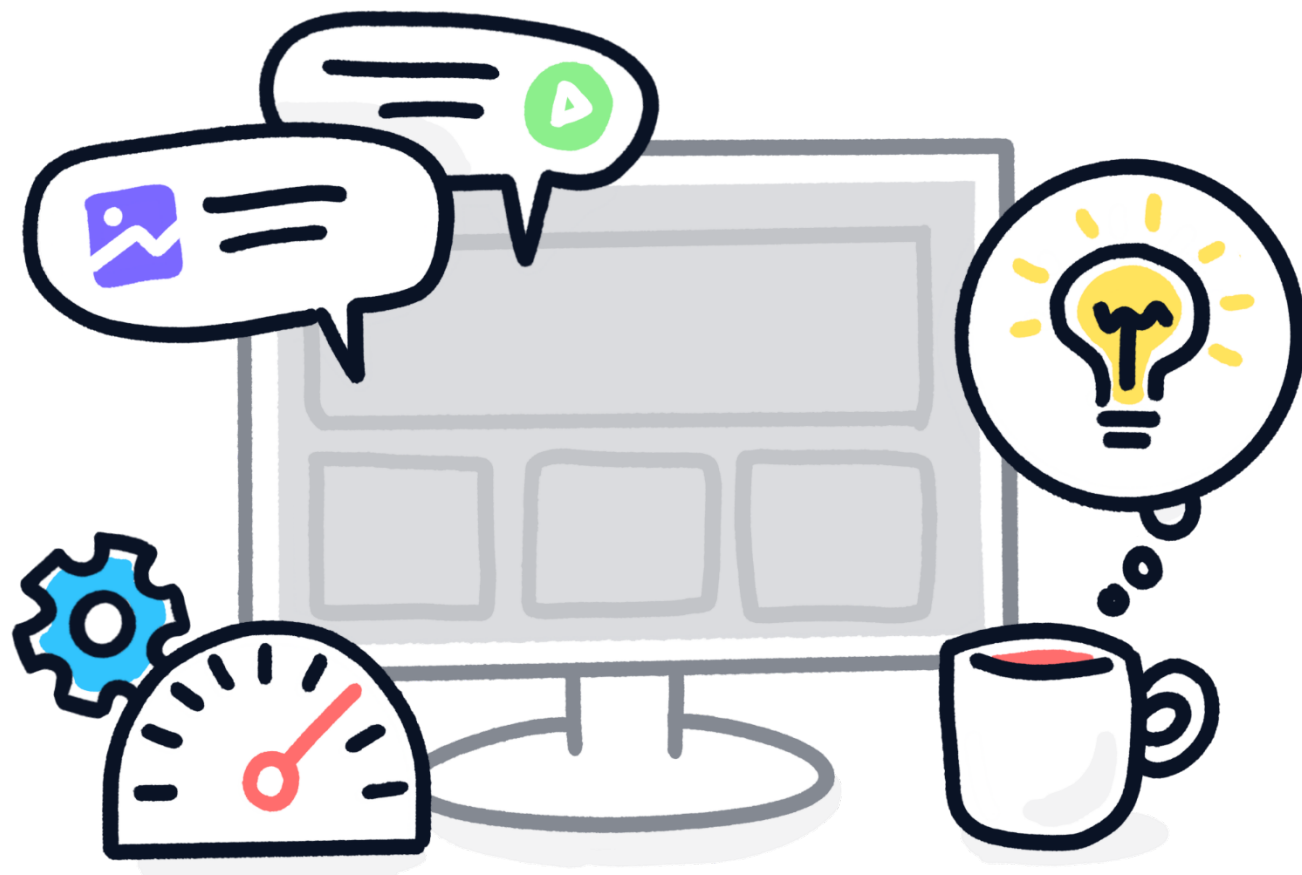
Knowledge checks

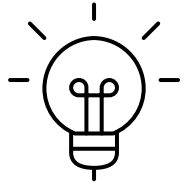
Go to kahoot.it

Make it w/ Mendix Studio

学习目标

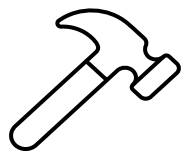
- 了解 Mx Studio
- 为 LearnNow app 创建首页
- 设置页面布局
- 了解页面创建的规则
- 使用 building blocks 并设置控件属
- 理解首页与overview页面的区别与联系
- 设置导航菜单



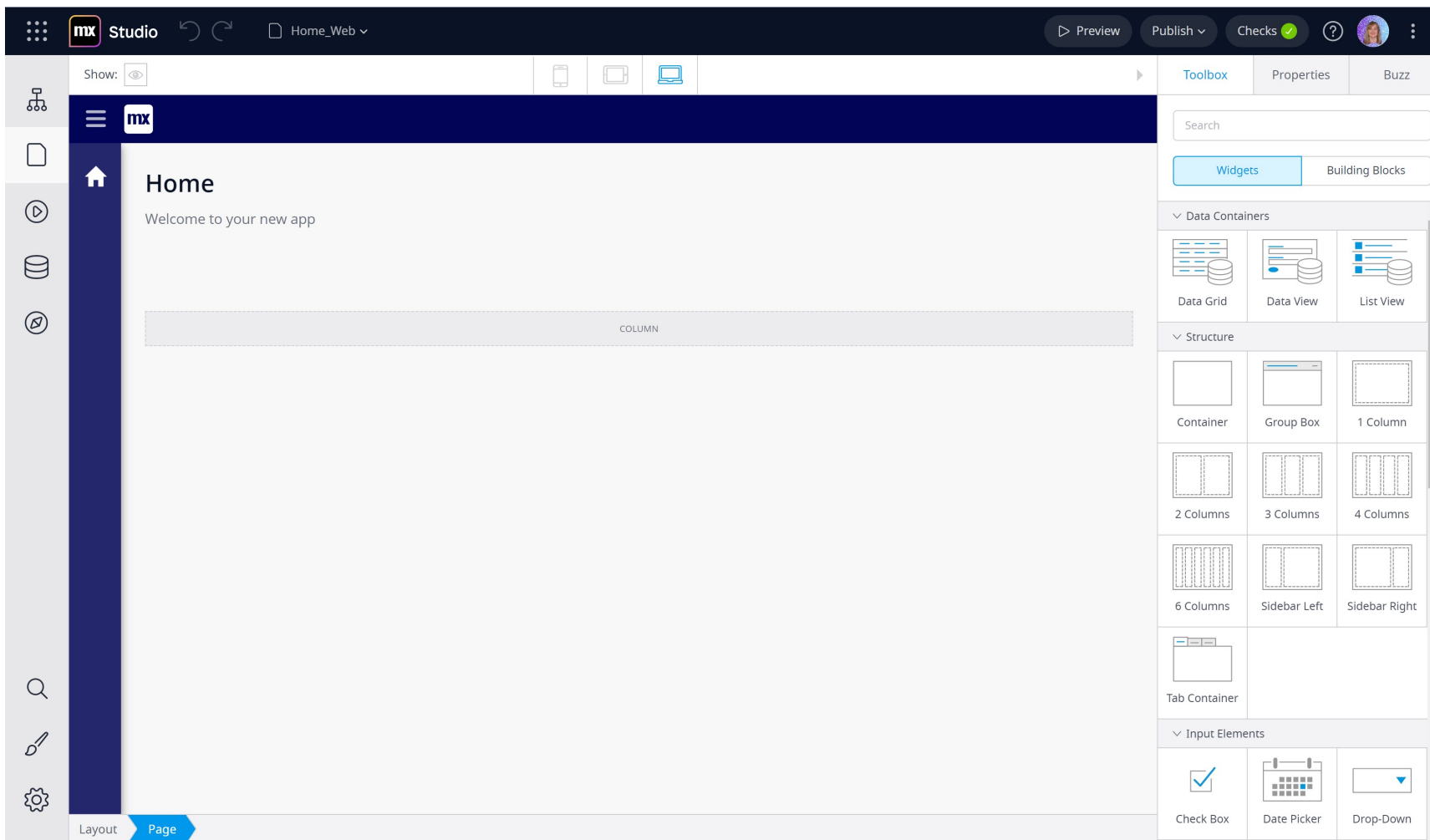


User Story 1

As an administrator, I want to be able to easily access and manage my data, so I can run my company more efficiently.



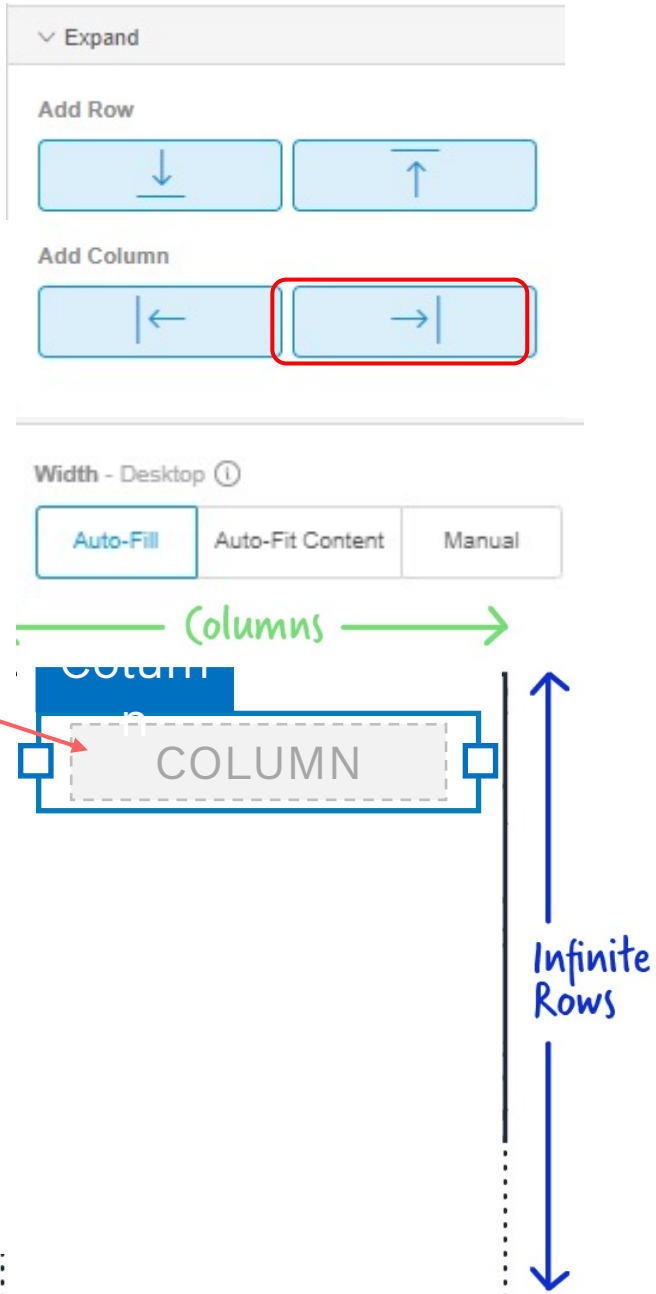
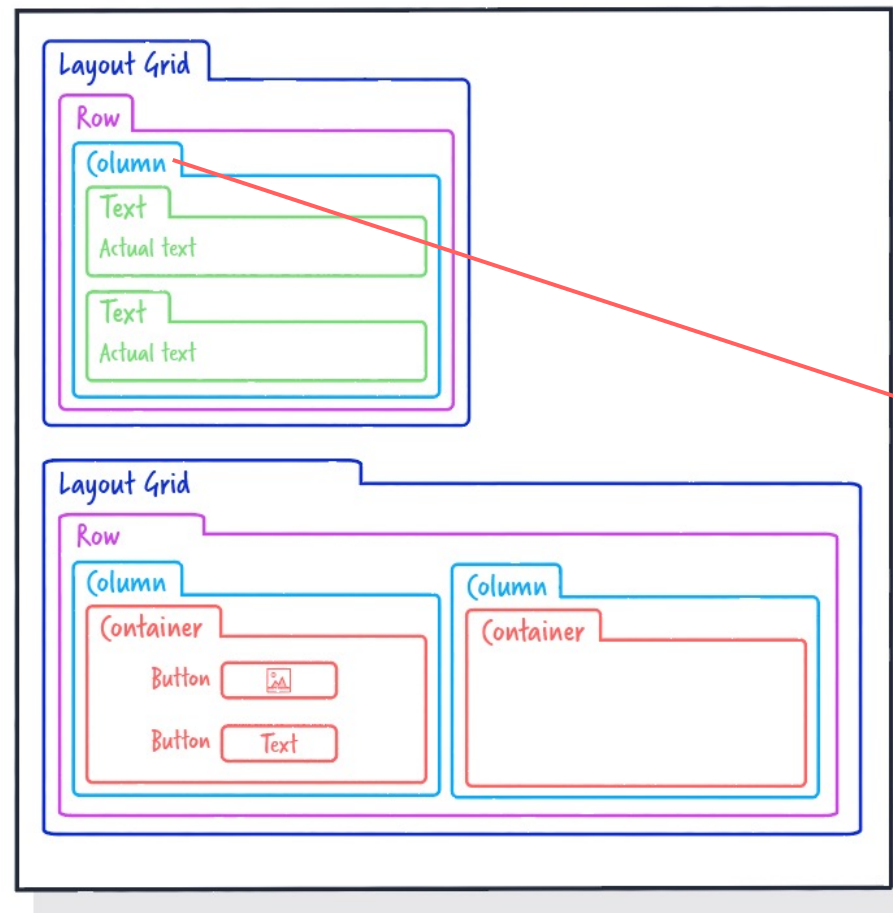
在Mendix Studio中打开应用

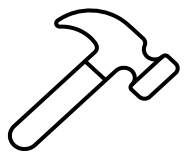


多列视图

- Layout grid
- Containers
- Widgets

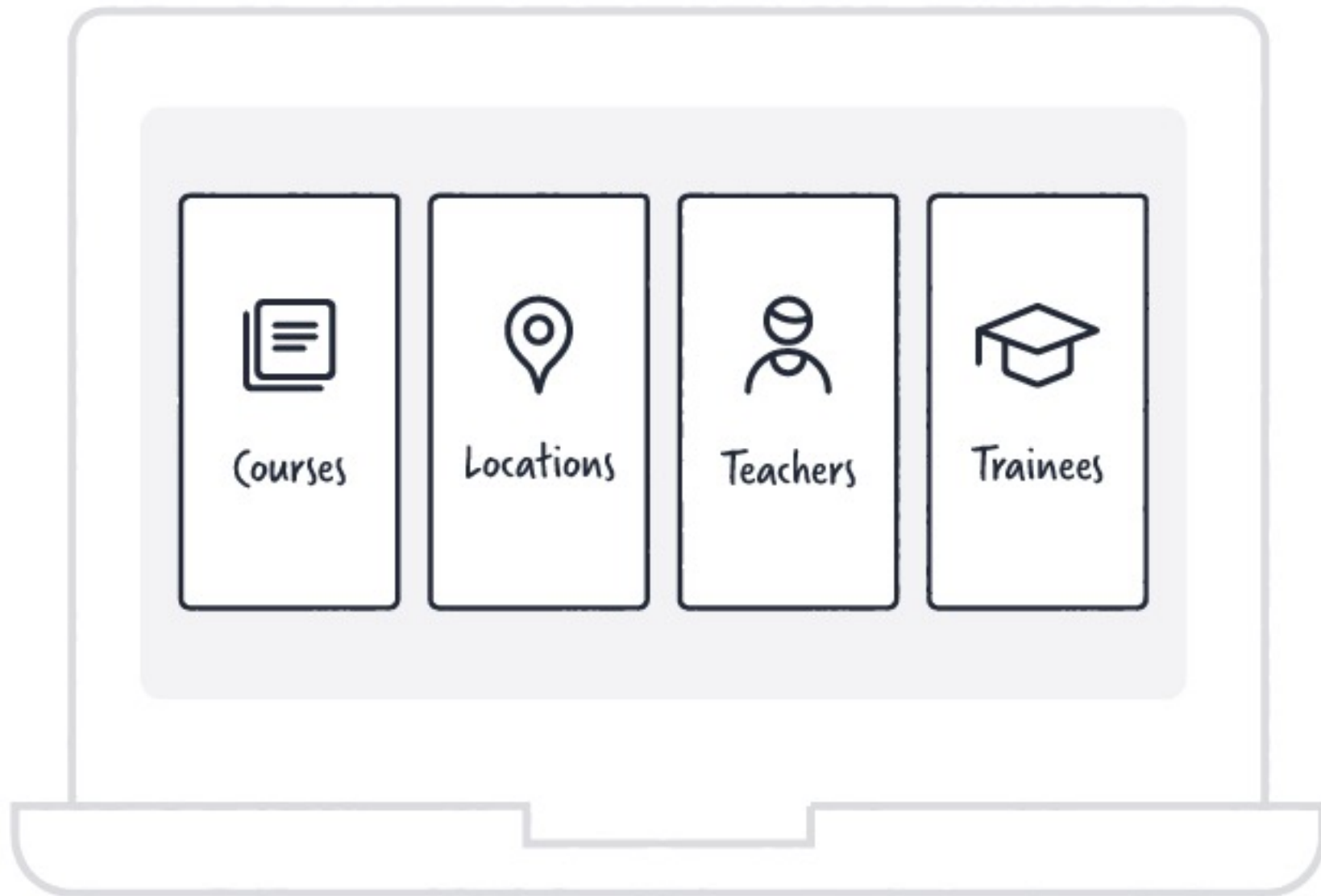
Navigation Layout





创建首页

1. 打开 Home page
2. 创建页面布局
3. 添加按钮
4. 添加页面
 - Layout: Atlas_Default
 - Template: List
 - 命名规则:
 - Course_Overview
 - Location_Overview
 - Teacher_Overview
 - Trainee_Overview
5. 链接按钮至页面



Summary

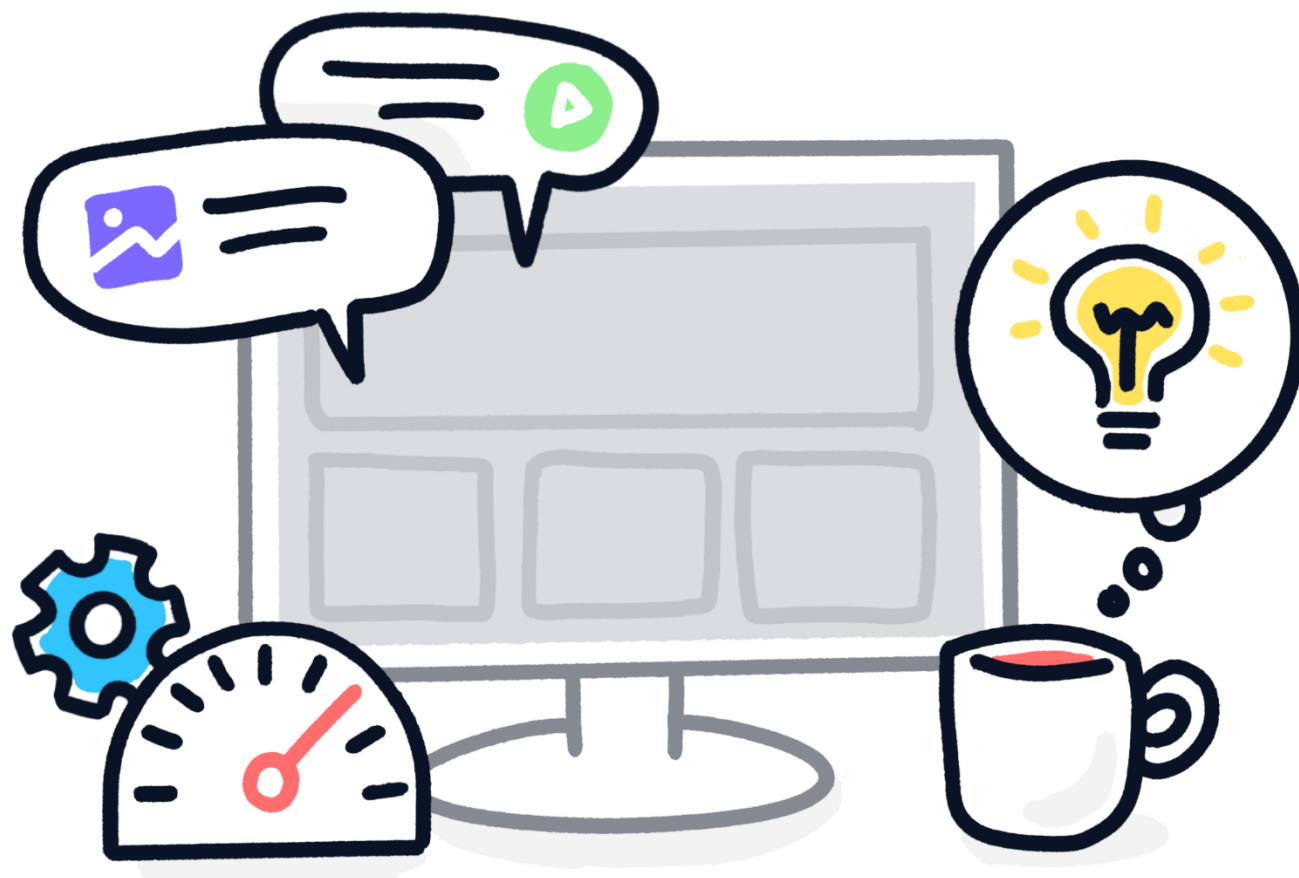
Knowledge checks

Go to kahoot.it

Make it dynamic

学习目标

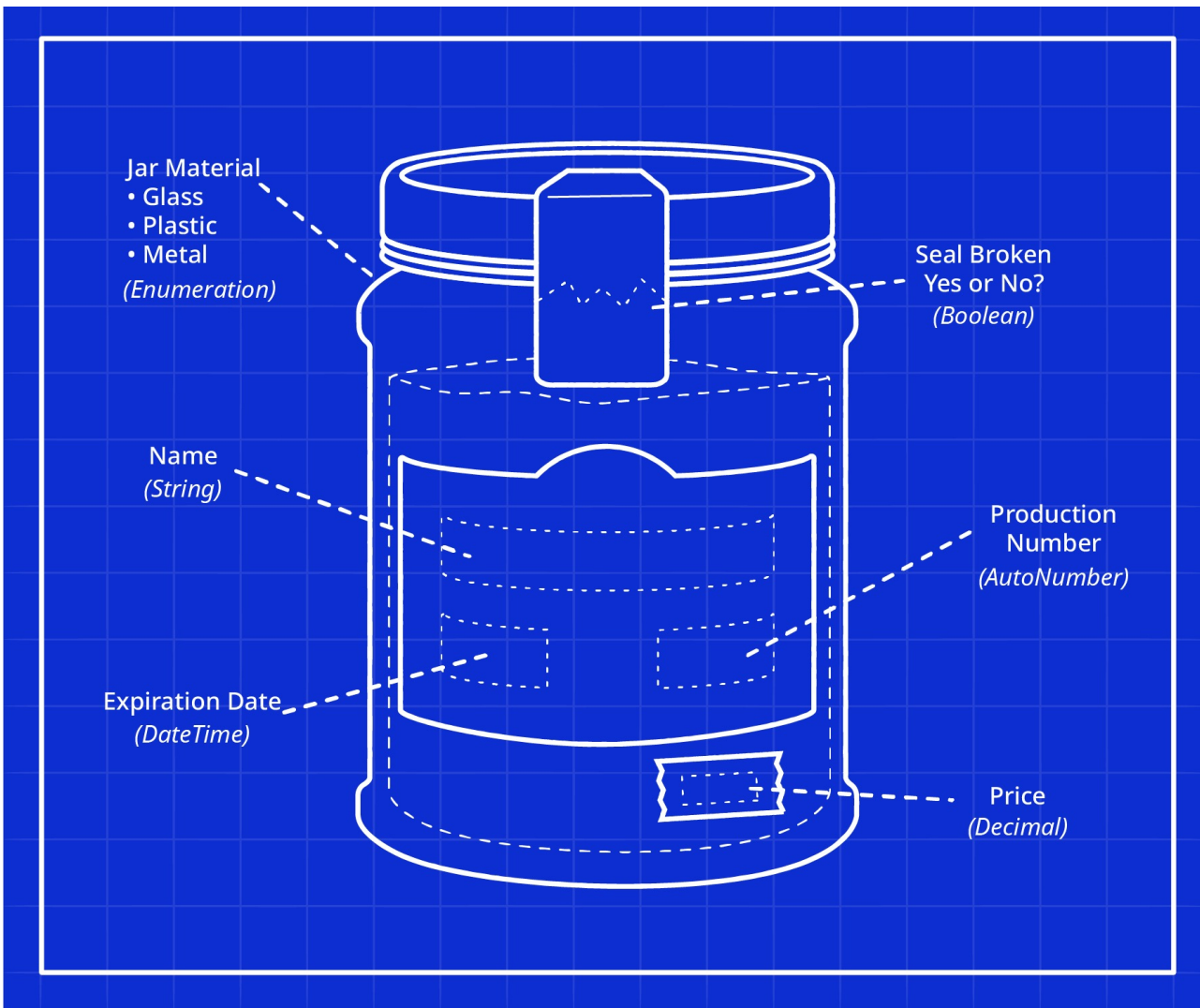
- 理解动态数据
- 使用实体与属性
- 显示动态数据
- 理解并使用对象（Object）
- 理解域模型（Domain Model）
- 理解概览页与详情页的不同

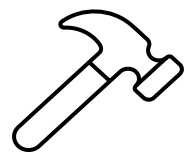


实体与属性

命名规则:

- 以单数形式的名词命名
- 驼峰式大小写命名 (CamelCase)





定义属性类型

Course Entity

Attributes	Example	Attribute type
Title		
Description		
Duration (in days)		
Price		

Location Entity

Attributes	Example	Attribute type
Name		
Address		

Teacher Entity

Attributes	Example	Attribute type
Name		
Email Address		

Trainee Entity

Attributes	Example	Attribute type
Name		
Address		
Email Address		

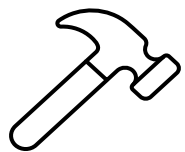




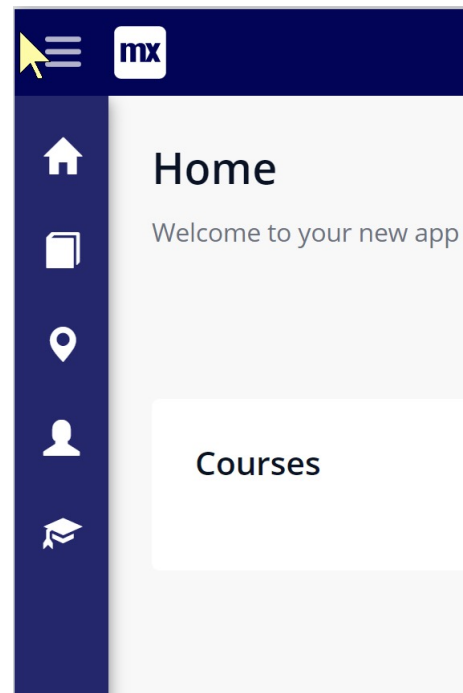
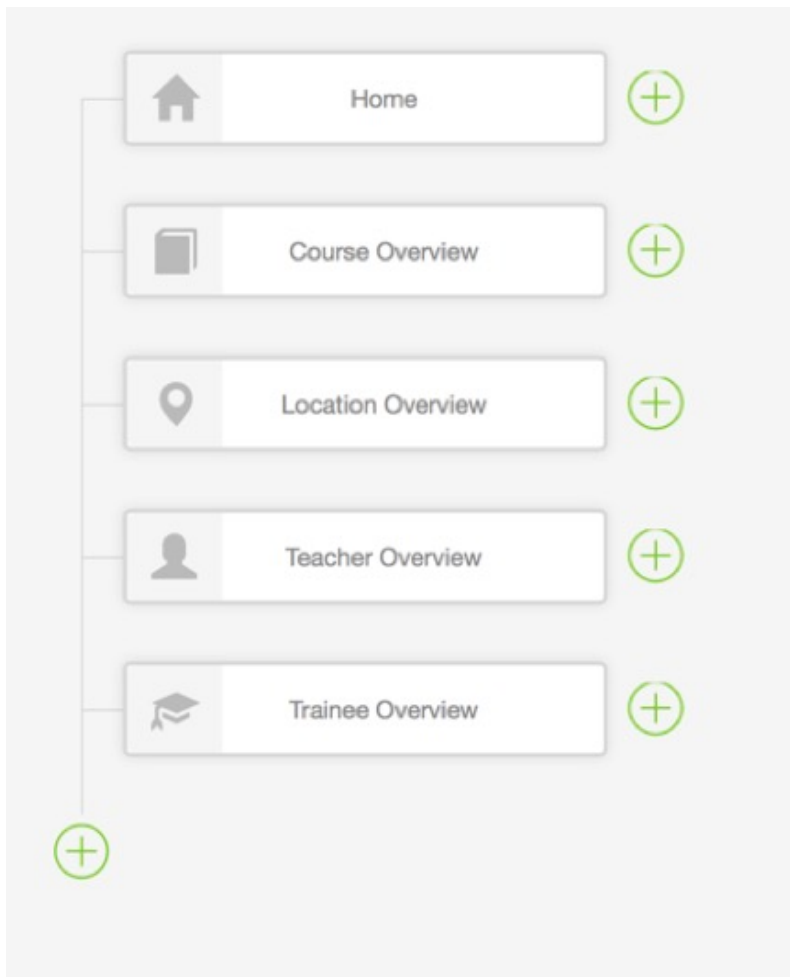
向页面添加动态数据

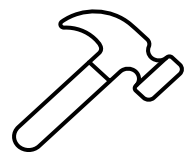
The screenshot shows the mx Studio interface for editing a 'Course Overview' page. The page is in 'List View' mode, displaying a list of course items. Each item has a title placeholder '{Title}', a duration placeholder 'Duration: {Duration} days', and a price placeholder 'Price: {Price}'. The right sidebar shows the 'LIST VIEW' configuration panel, which includes options for Data Source (Database, Microflow, More), Entity (Course (MyFirstModule)), Filter (0 Conditions), Sort Order (Add Sorting Rule), and Events (On Click Action: Nothing, Page, Microflow, More). The General section shows the Page Size set to 5.

The screenshot shows the 'Course Overview' page in a preview mode. The page has a dark blue header with the 'mx' logo. Below the header, the title 'Course Overview' is displayed, followed by 'Supporting text'. The main content area shows a list of course items, each with a title placeholder '{Title}', a duration placeholder 'Duration: {Duration} days', and a price placeholder 'Price: {Price}'. Each item has a blue arrow pointing to the right.

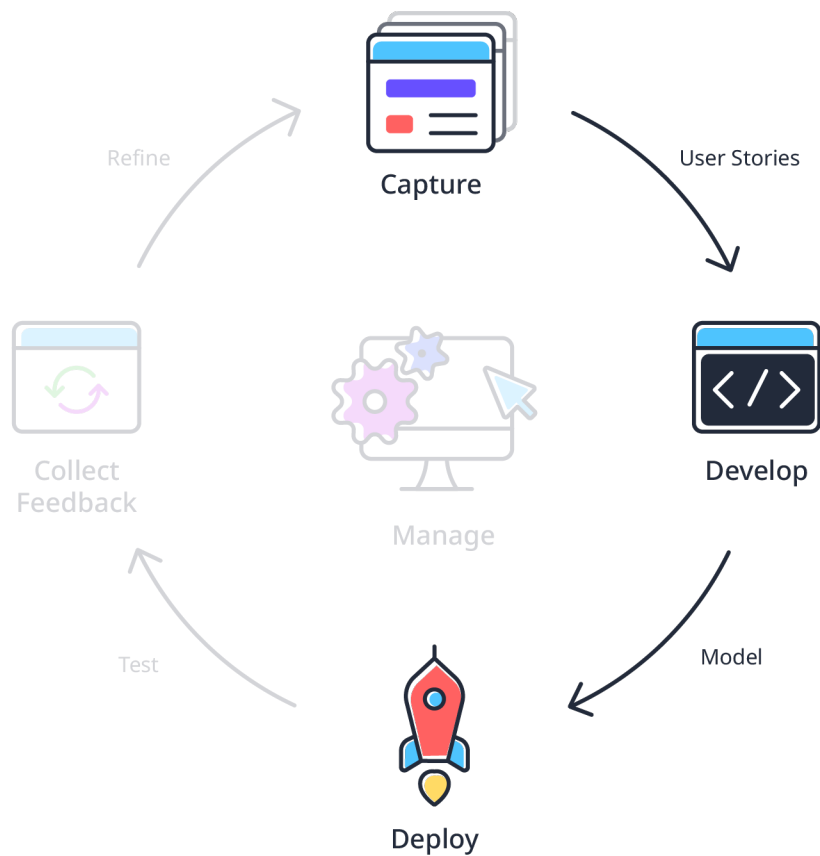


创建导航菜单



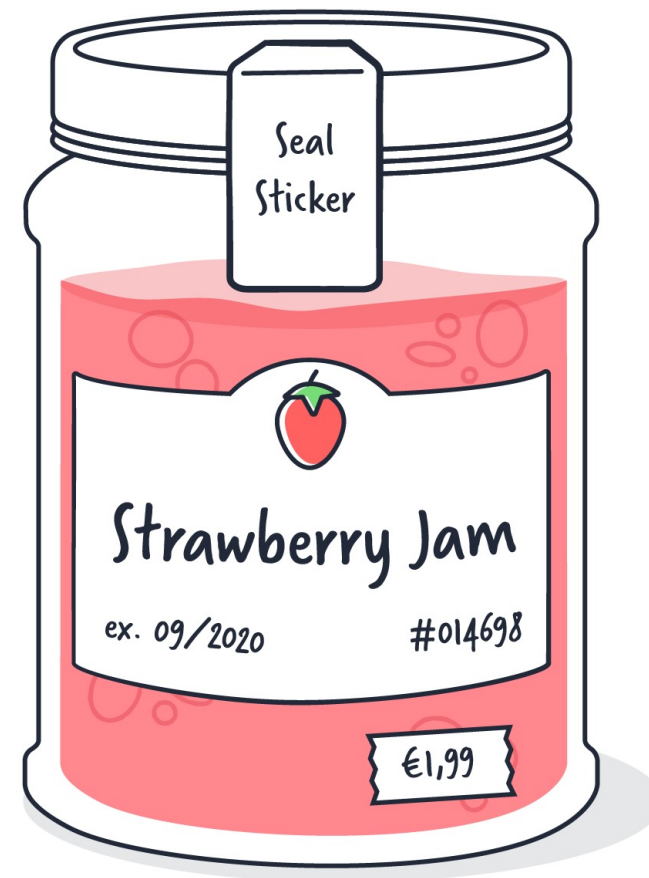


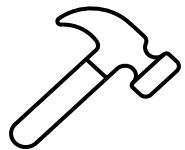
预览你的应用



对象

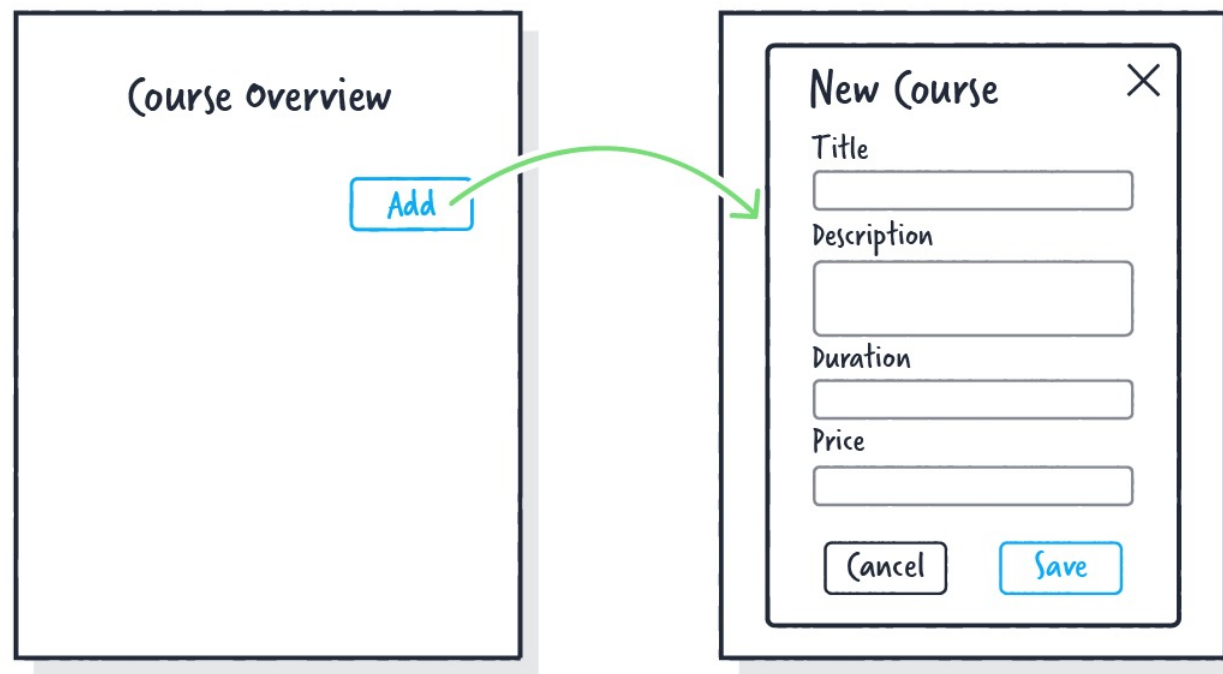
- 实体 + 属性 = 蓝图
- 对象是实体的实例

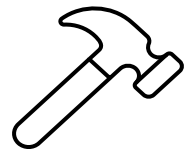




创建添加功能

- 步骤 1:
 - 在页面头部添加一行
 - 在页头中添加 **Create Object** 按钮
 - 设置标题 (Caption) 为 **Add**
 - 设置风格 (Style) 为 **Success**
 - 链接按钮至相应实体
- 步骤 2:
 - 创建详情页
 - Layout: PopupLayout
 - Template: Form Vertical
 - 命名规则: Entity_NewEdit

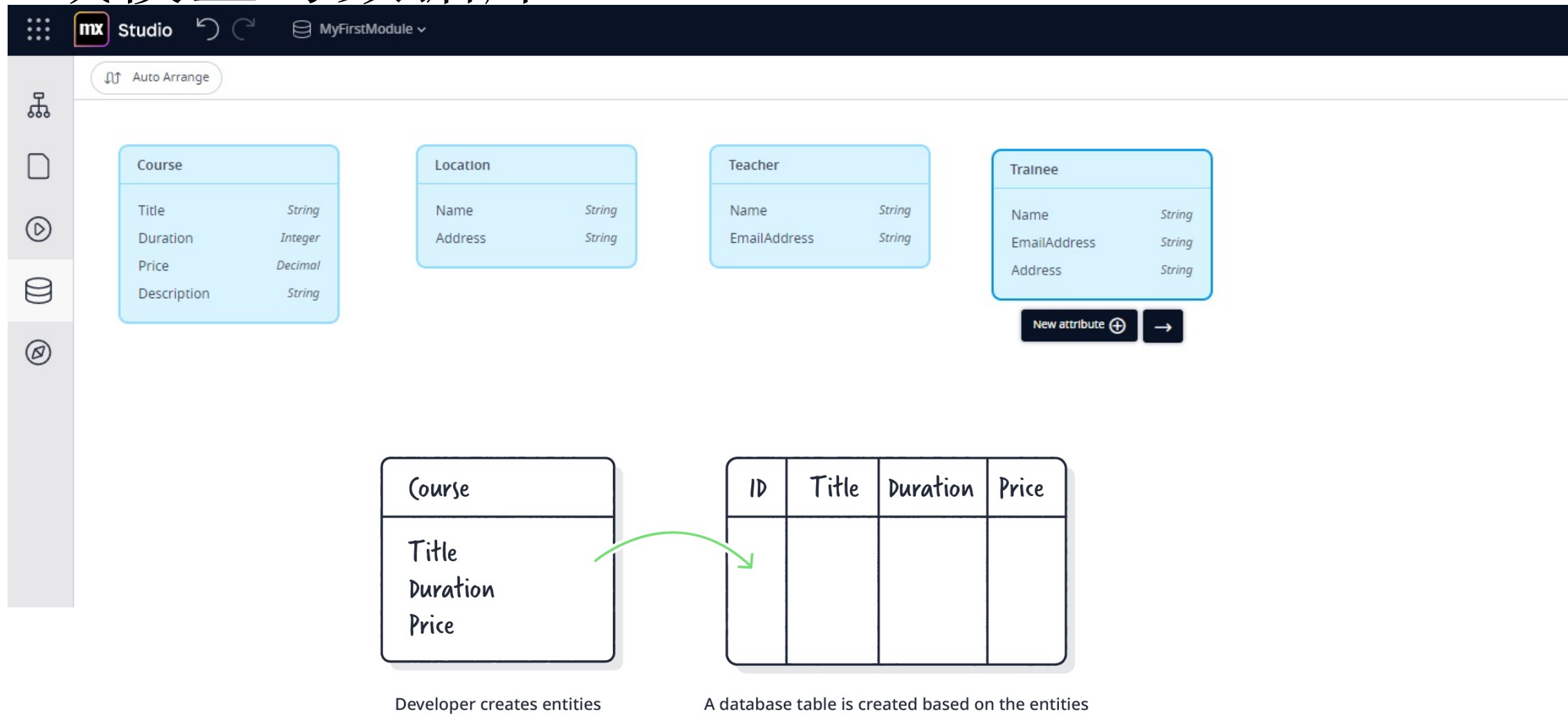


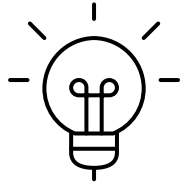


预览你的应用

- 点击预览按钮
- 在移动端预览你的应用
- 将相应的 user story 设置为完成状态

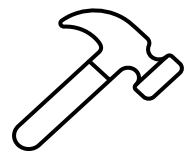
域模型与数据库





User Story 2

As an administrator, I want to be able to schedule a training event at any time, so that the teachers can see their schedule, even from their phone



拓展域模型

1. 在域模型中添加一个新实体：TrainingEvent
2. 添加 StartDate 与 EndDate 属性

TrainingEvent

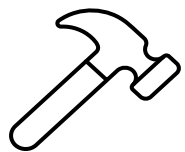
StartDate *Date and Time*

EndDate *Date and Time*

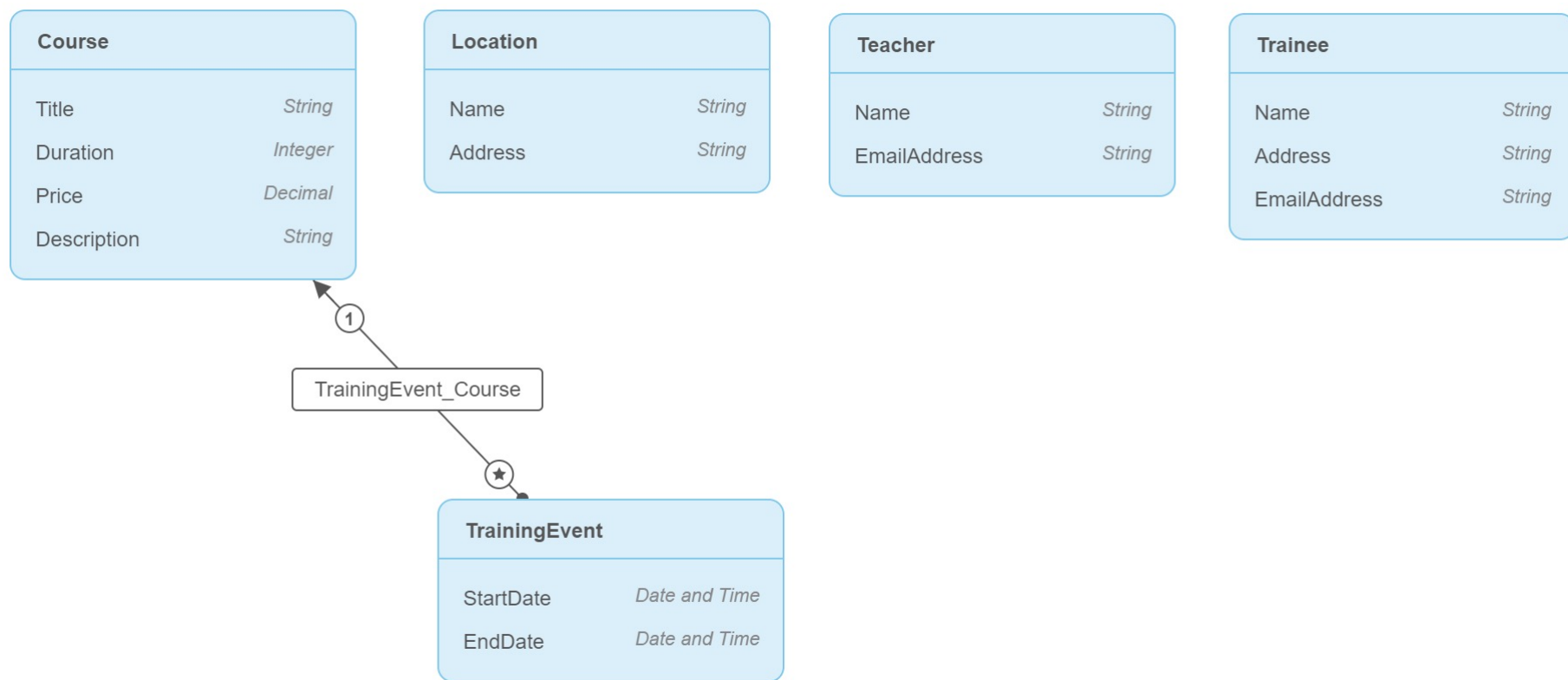
关联

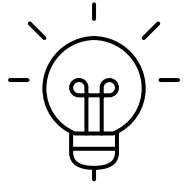
- 1对多, One-to-Many (1 - *)
- 1对1, One-to-One (1 - 1)
- 多对多, Reference Set (* - *)

命名规则: Entity1_Entity2



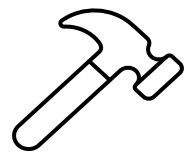
添加关联



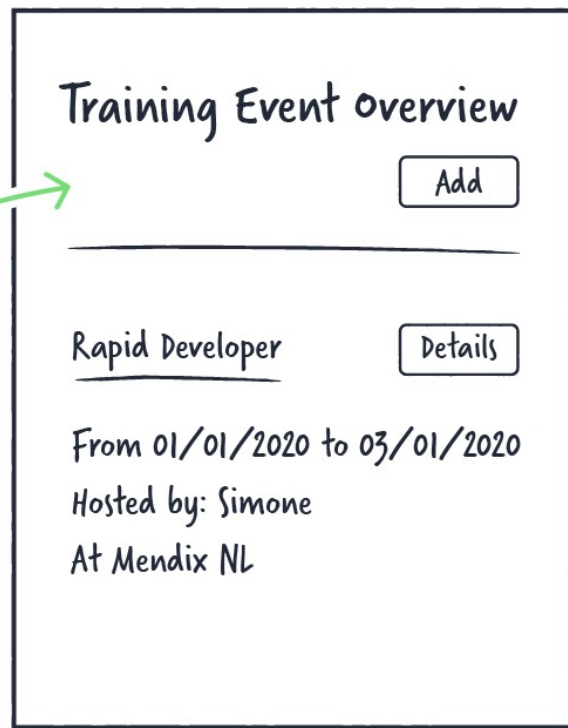
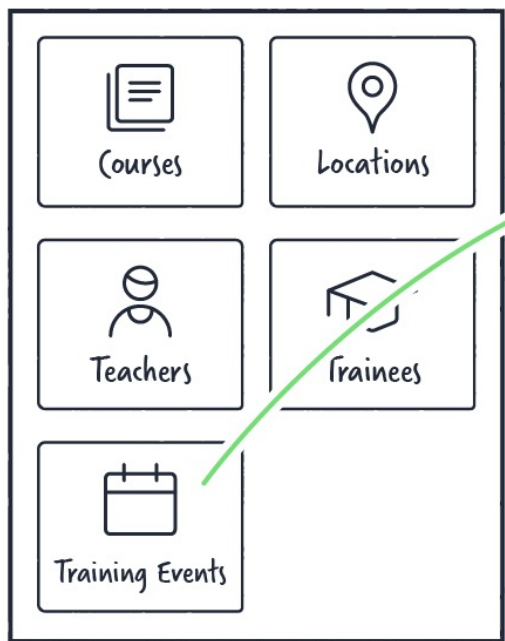


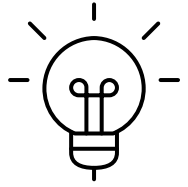
User Story 2

As an administrator, I want to be able to schedule a training event at any time, so that the teachers can see their schedule, even from their phone



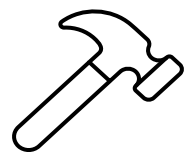
使用下拉菜单





User Story 3

As an administrator, I want to be able to schedule a training event directly from the homepage, so that I spend as little time as possible on this.



从首页新建培训事件



Button



Training Event New Edit

Data View Training Event

Course

Start Date

End Date

Location

Teacher

Page

Summary

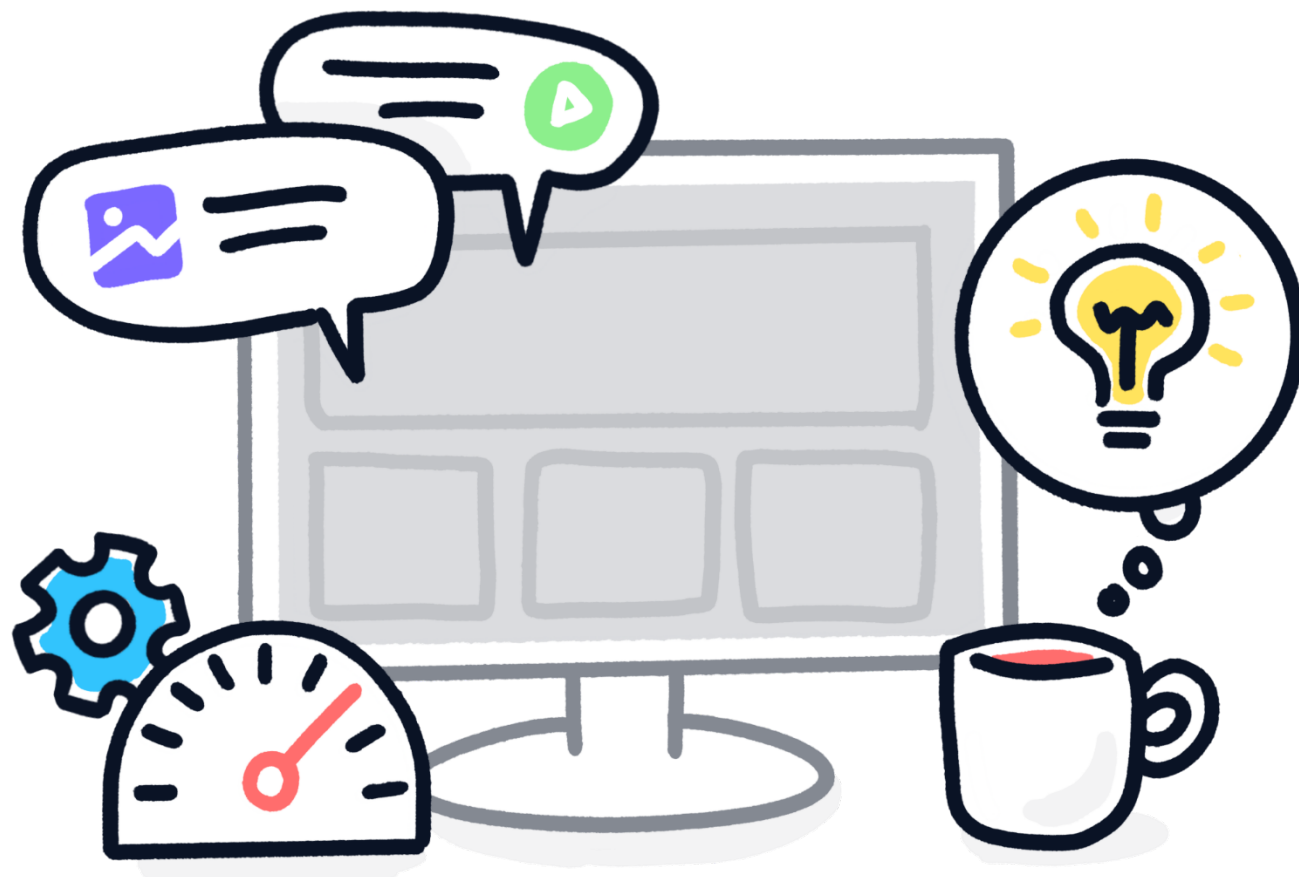
Knowledge checks

Go to kahoot.it

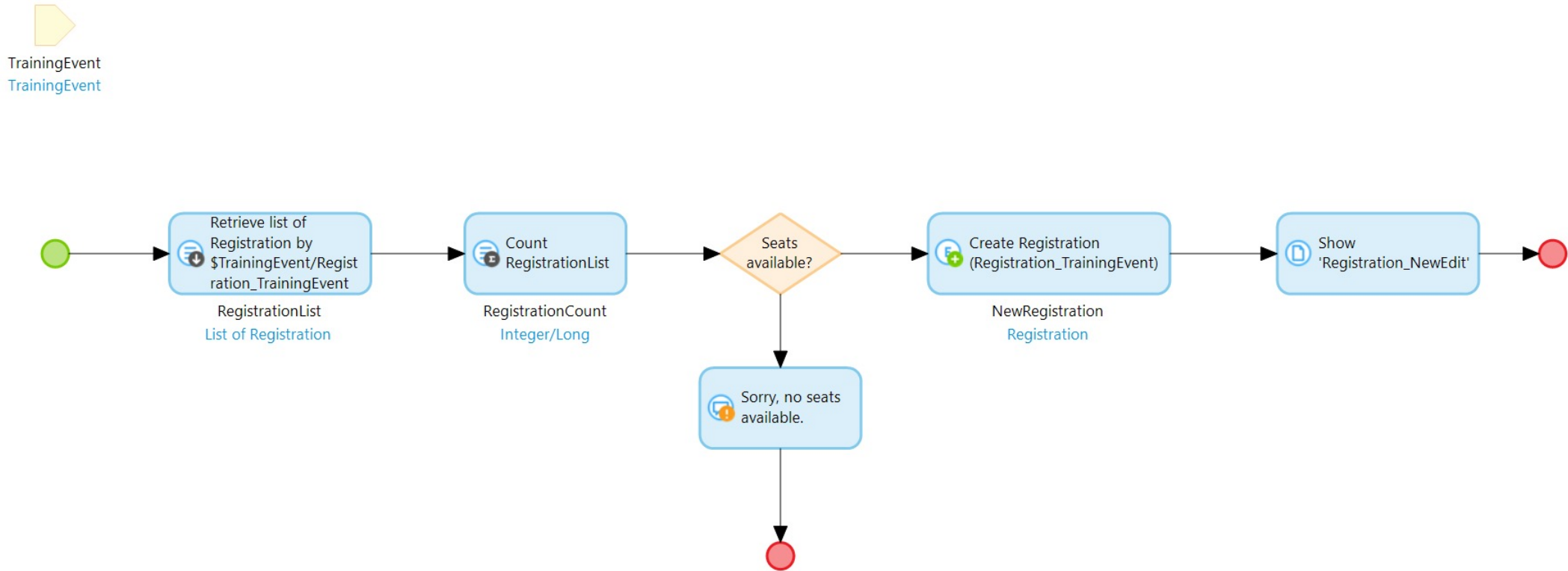
Make it automated

学习目标

- 了解自定义逻辑的价值
- 了解微流可包含的元素
- 学习创建微流



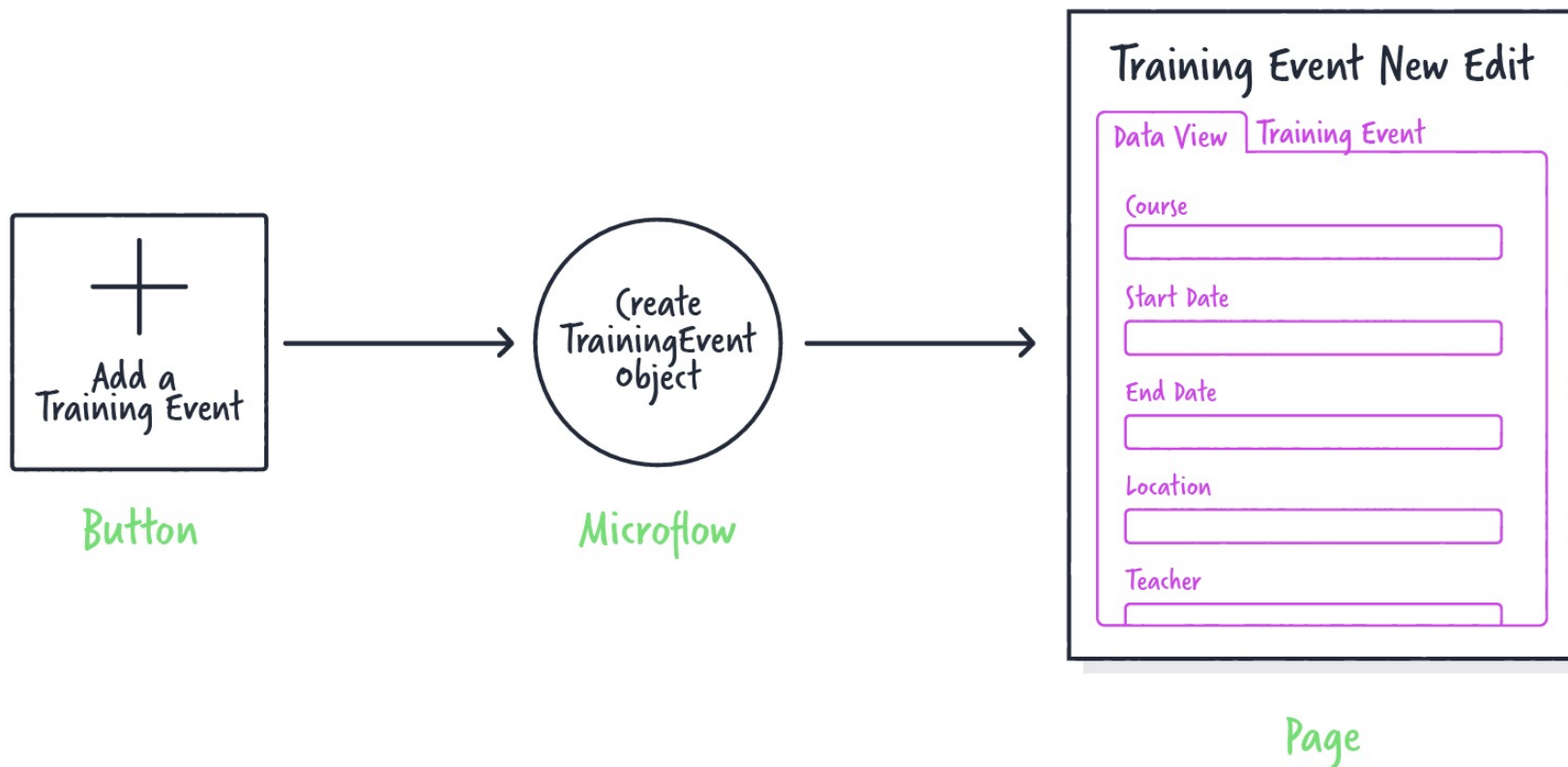
这是一个微流， 你能看明白它在做什么吗？



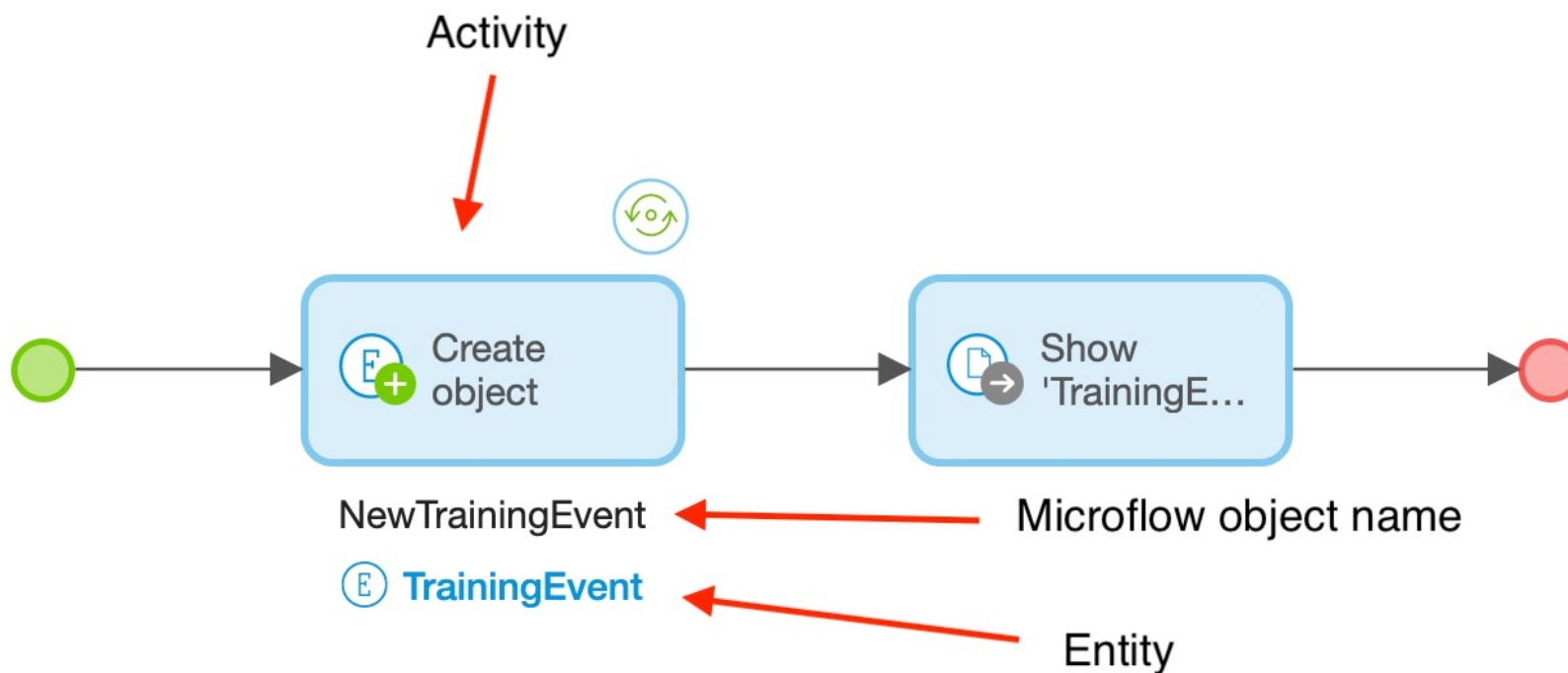
微流

- 微流为您的应用程序添加逻辑。 逻辑用于使您的应用程序更智能、自动化并使其可维护。
- 你可以用微流来：
 - 扩展或改变默认行为
 - 处理特殊的业务流程
 - 集成外部系统、数据库、web服务等




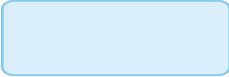
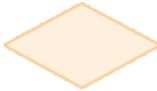
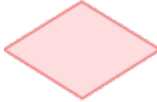


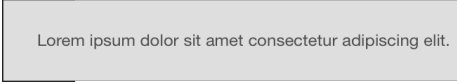

微流示例

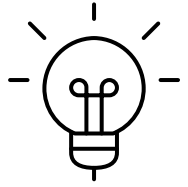


从首页安排培训



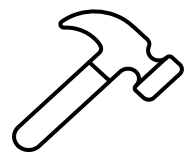
微流包含的元素

Element	Type	Graphic
Start Event	Event	
End Event	Event	
Sequence Flow	Flow	
Activity	Activity	
Decision	Decision	
Merge	Decision	
Parameter	Artifact	 NewTrainer  Trainer
Annotation	Artifact	 Lorem ipsum dolor sit amet consectetur adipiscing elit.
Annotation Flow	Flow	

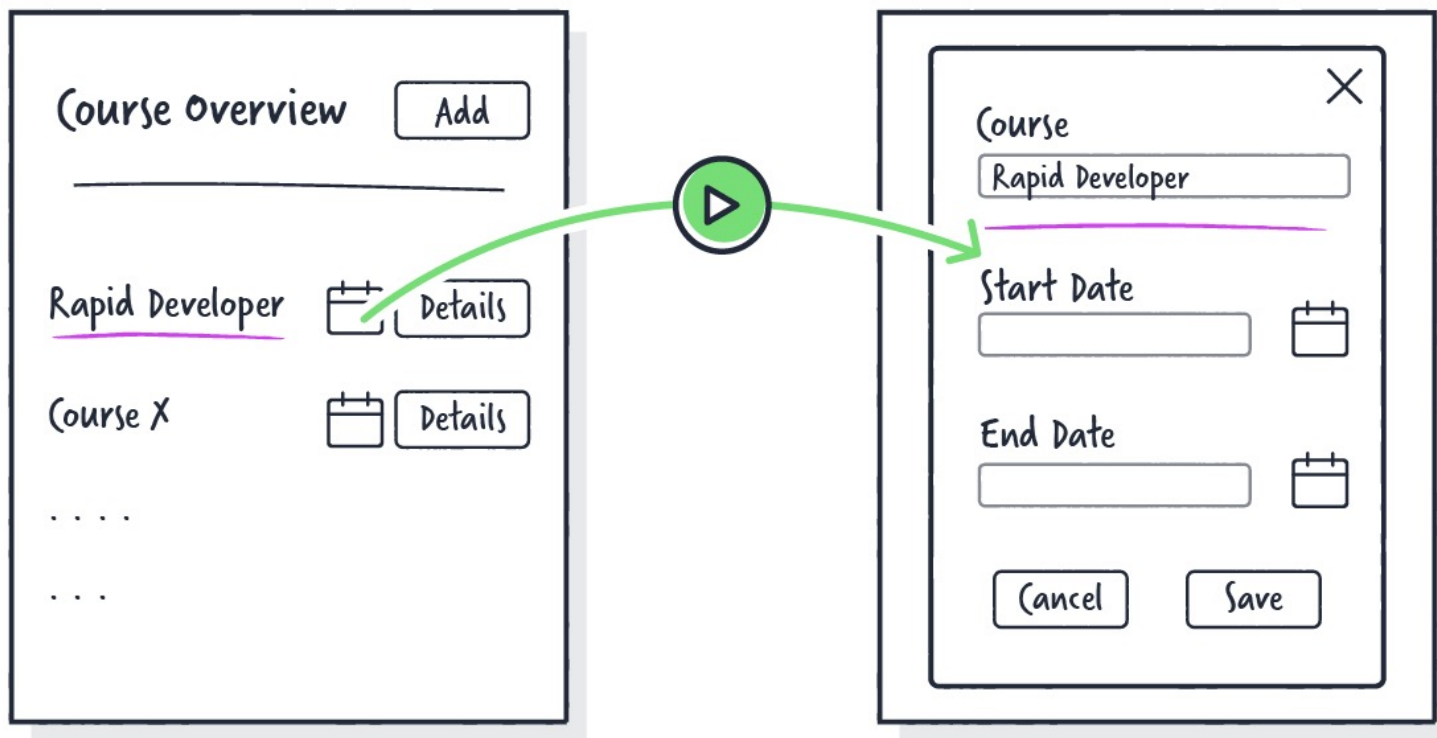


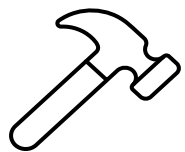
User Story 4

As an administrator, I want to be able to schedule a training event from the course overview page with the course name already selected, so that I spend as little time as possible on this.

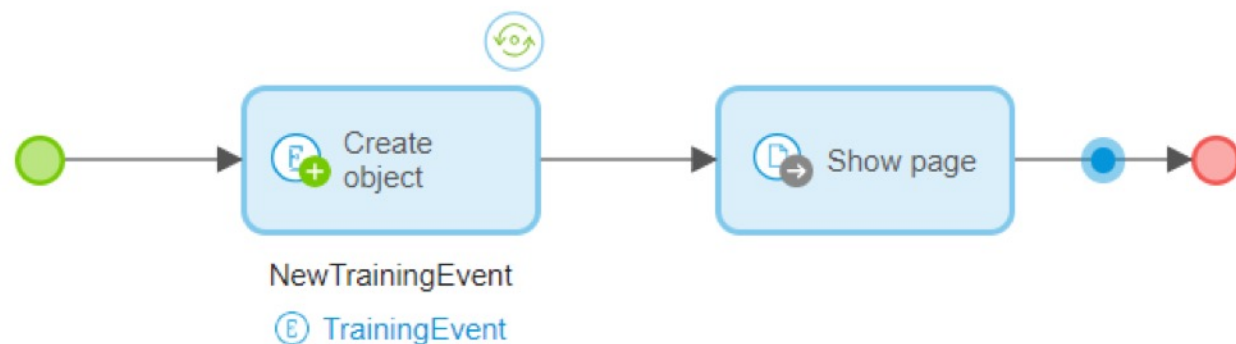
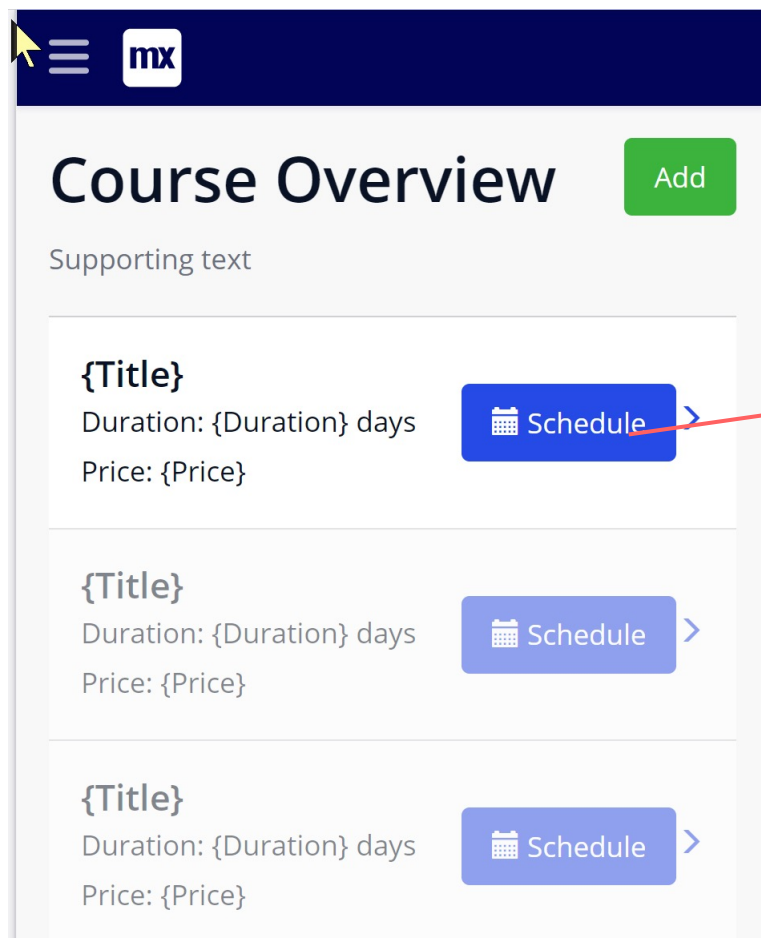


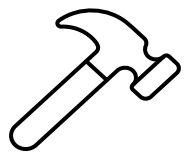
从Course Overview页面创建培训事件(1/3)





从Course Overview页面创建培训事件 (2/3)





从Course Overview页面创建培训事件 (3/3)

Toolbox Properties Buzz

CREATE OBJECT

▼ Data Source

Entity ⓘ

TrainingEvent (MyFirstModule) ⋮ ↻

Initialize Members

Add New Value

▼ Behavior

Set initial value ⓘ

Need help with expressions? Go to our [documentation](#)

Select an Attribute or an Association ⓘ

TrainingEvent_Course Course ⓘ

`$Course`

Show suggestions: `Ctrl` + `Space` | Show function info: `Ctrl` + `Shift` + `Space`

Cancel Add

Summary

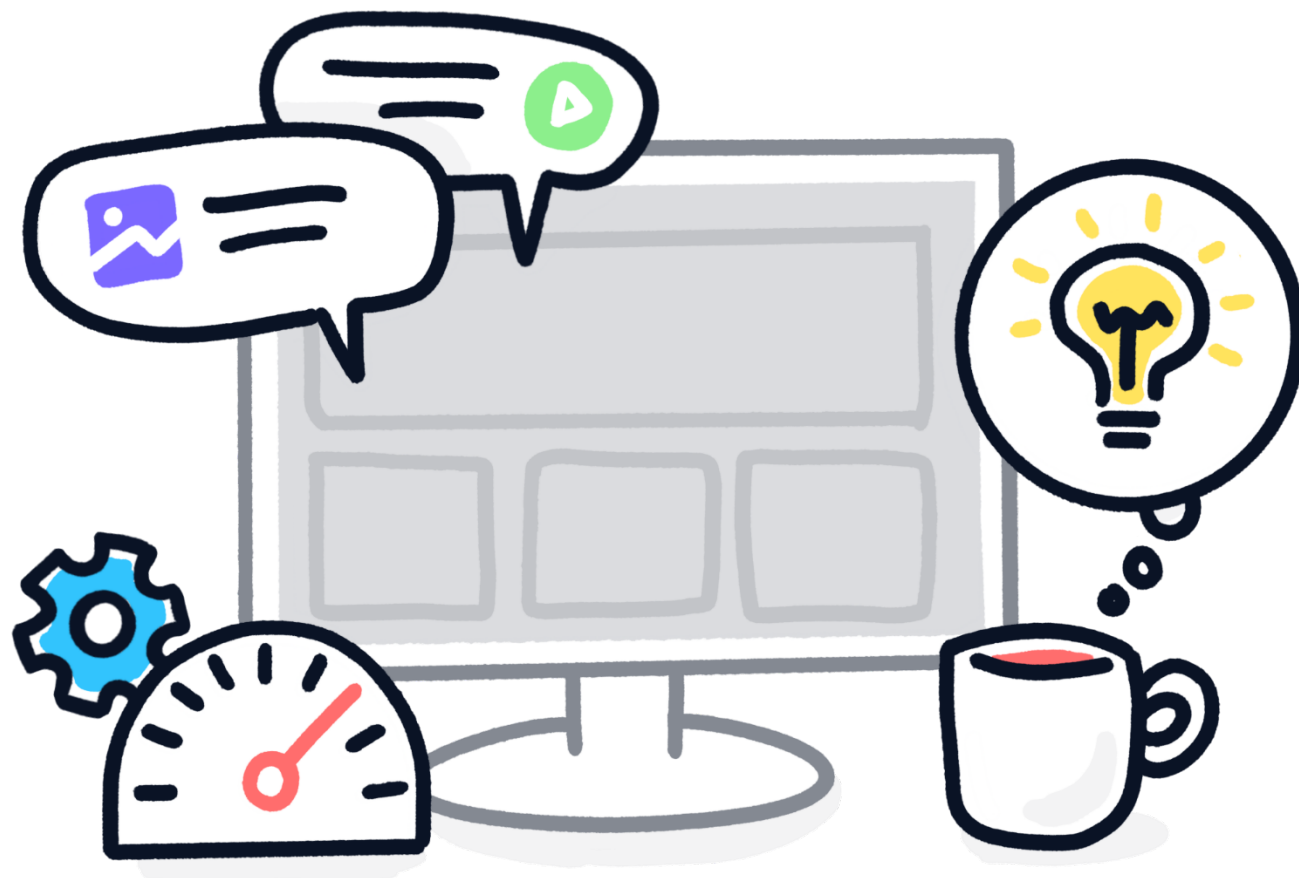
Knowledge checks

Go to kahoot.it

Make it w/ Mendix Studio Pro

学习目标

- 学习使用 Studio Pro
- 了解如何使用 Team Server 协作开发
- 向 Team Server 提交更改
- 使用信息实体
- 使用数据嵌套



Studio 与 Studio Pro



Citizen Developer



Business Analyst



Business Engineer



Full-Stack Developer



Solutions
Focused

BUSINESS

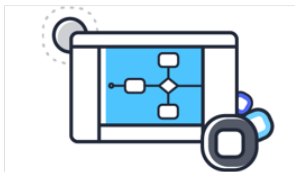
IT



Technology
Focused



Mendix Studio



Mendix Studio Pro



Custom Code

Studio Pro

The screenshot displays the Mendix Studio Pro interface for a web application named 'Test_911'. The main design canvas is in 'Design mode' and shows a 'Home_Web' page for 'MyFirstModule'. The page layout includes a header with 'LearnNow Training Management' and 'Welcome to your new app', followed by a grid of three main sections: 'Courses', 'Locations', and 'Teachers', each with an 'Auto-fill' placeholder and a right-pointing arrow. The right-hand panel shows the 'Properties' tab for the 'Page MyFirstModule.Home_Web', with sections for 'Common', 'Designer', 'General', 'Navigation', and 'Usage'. The bottom panel shows the 'Atlas_Default > Home_Web' stories, with a list of user stories and their status (Done or Running).

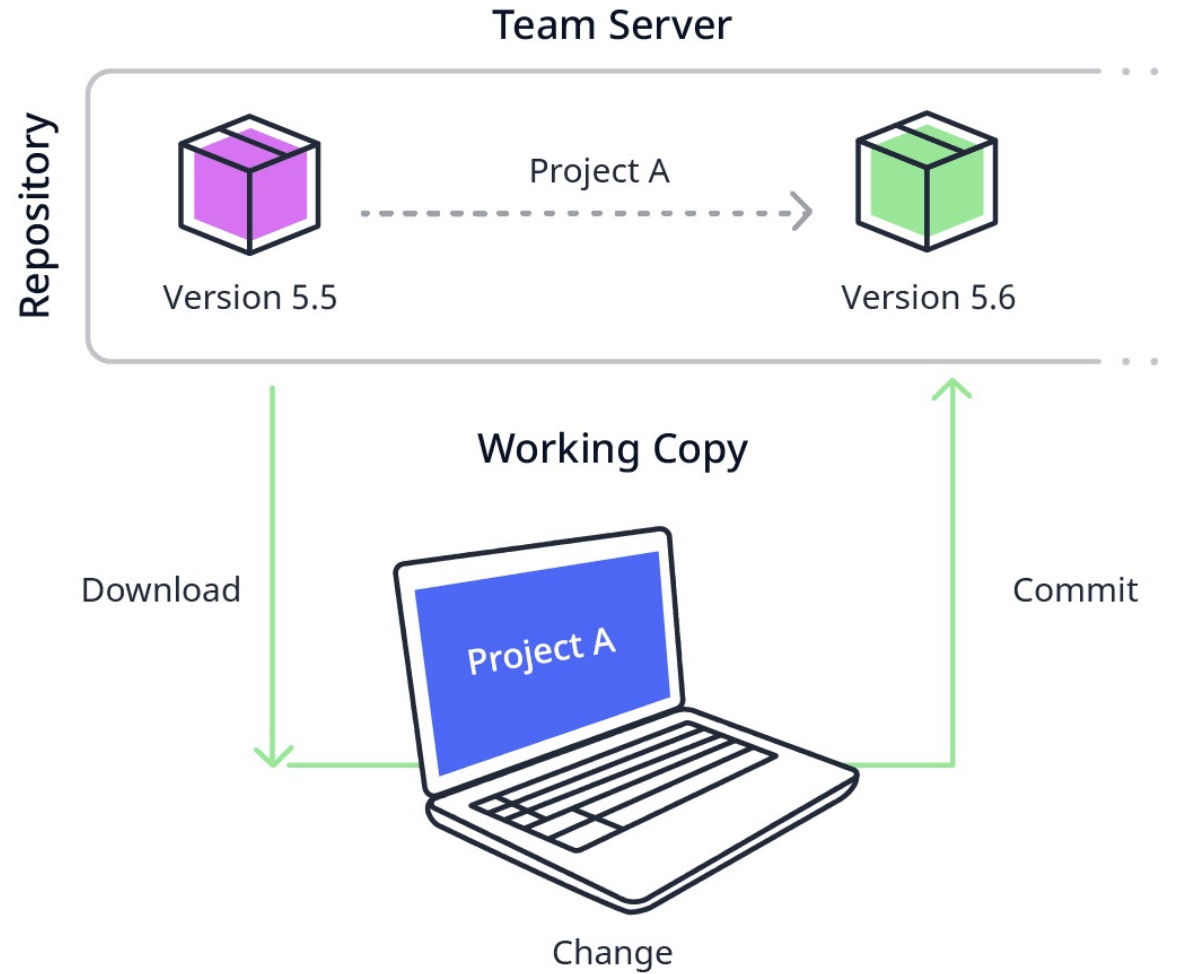
1. Top toolbar: Contains icons for File, Edit, View, App, Run, Version Control, Language, Help, Test_911 (Branch...), Publish, View App, and a user profile icon.

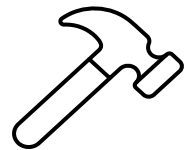
2. App Explorer: A tree view on the left showing the project structure, including 'App Test_911', 'System', and 'MyFirstModule' with its sub-modules.

3. Properties panel: A panel on the right showing the properties of the selected page, including 'Name', 'Documentation', 'Class', 'Style', 'Dynamic classes', 'Canvas width', 'Canvas height', 'Platform', 'Layout type', 'Layout', 'Title', 'URL', 'Visible for', and 'Mark as used'.

4. Bottom panel: A panel at the bottom showing the 'Atlas_Default > Home_Web' stories, with a list of user stories and their status (Done or Running).

Team Server






在Studio Pro中打开应用


- 打开 Mendix Studio Pro version 9.5.0
- 找到你的应用
- 打开主分支

状态与变更


图标	含义
----	----

	该元素无变化
---	--------




	该元素被修改
---	--------




	新增的元素
---	-------




	该元素在项目树中被移动
---	-------------



	被删除的元素
---	--------

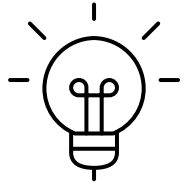


	与别人修改了同一个元素，版本有冲突
---	-------------------



提交修改

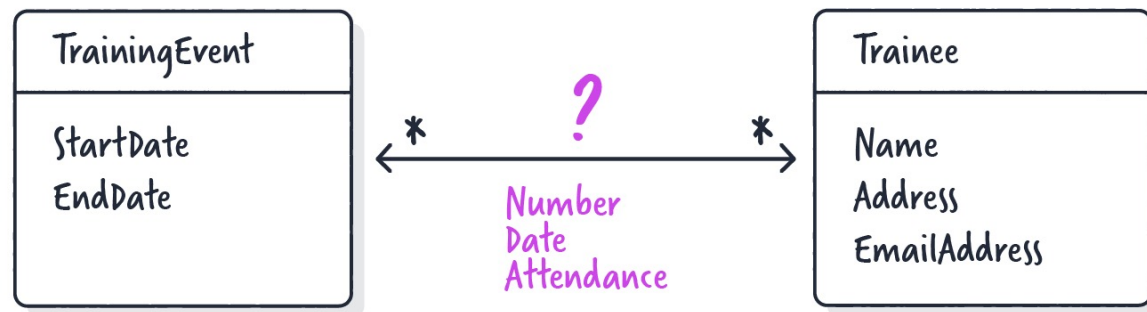
- 将更改发送到存储库称为提交。
- 将小的、一致的工作提交到存储库。
- Studio Pro 会自动检查您的应用程序是否存在您可能遗漏的内容，并提醒您在提交之前检查并修复这些内容。
- 只有当您的工作副本与存储库保持同步时，才可以提交。
- 不要忘记设置故事的状态！

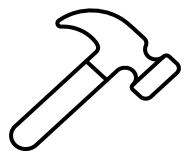


User Story 5

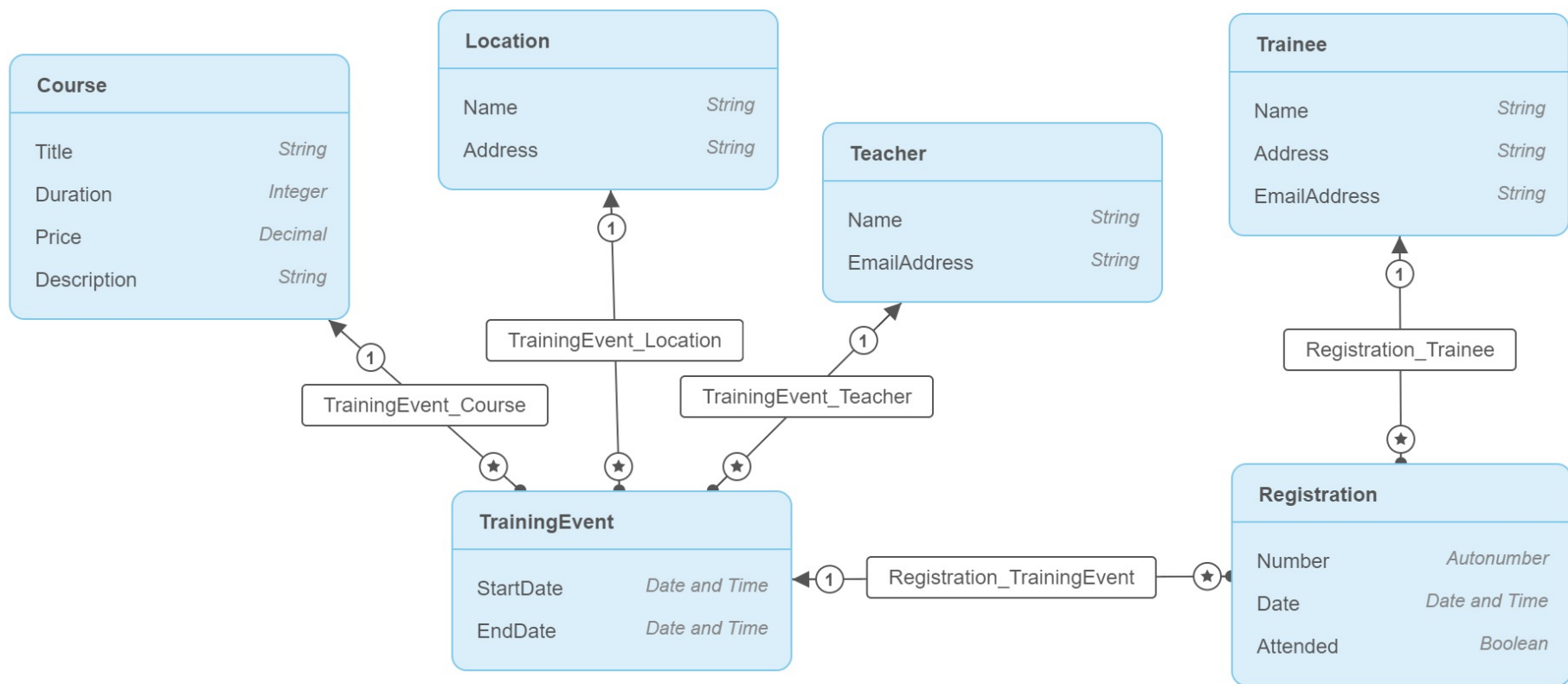
As an administrator, I want to be able to add registrations to a training event, so that my teachers know who their students will be.

信息实体

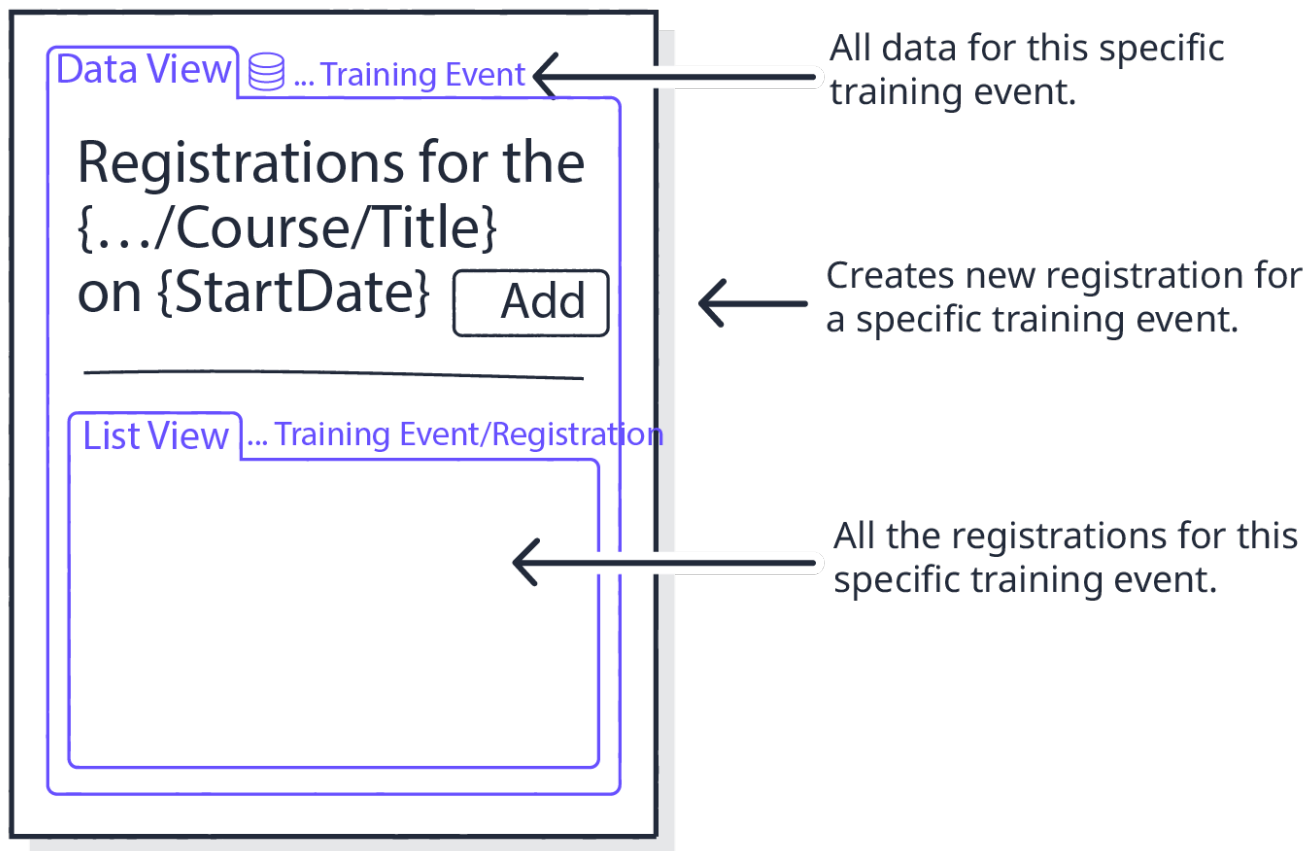


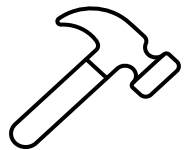


拓展域模型



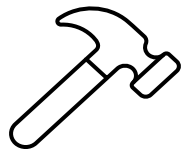
数据嵌套





创建注册功能

- 在 TrainingEvent_Overview 页面中创建一个新的“注册（Registration）”按钮。
- 使用 Atlas Default 布局的空白模板创建新页面， 将其命名为 TrainingEvent_Registration_Overview 并链接到该按钮。
- 在 layout grid 上方添加数据视图（data view）并连接实体 TrainingEvent 数据源上下文
- 向其中添加 Pageheader Controls 构建块并删除 Edit 和 Delete 按钮。
- 将原始 layout grid 移动到 data view 内， 位于Pageheader Controls下方。
- 在该layout grid内添加一个 **List single line** 构建块， 并显示属性 Number 和 Trainee Name。
- 创建添加按钮以打开新的 Registration_NewEdit 页面。
- 使用 > 按钮也可以转到 NewEdit 页面。
- 使 < 返回按钮关闭页面。



预览并完善

[TrainingEvent, page parameter]

Auto-fill

Registrations for the {.../Title} on {StartDate}

Add

Auto-fill

[Registration, from database over association 'Registration_TrainingEvent']

Sort order: (default)

Search on: (none)

Auto-fill

{Number} - {.../Name}

>

Load more...

Auto-fill

[Registration, page parameter]

Number

[Number]

Trainee

[Registration_Trainee/Trainee/Name]

Date

[Date]

Attended

☐ Yes ☐ No [Attended]

Save Cancel

Summary

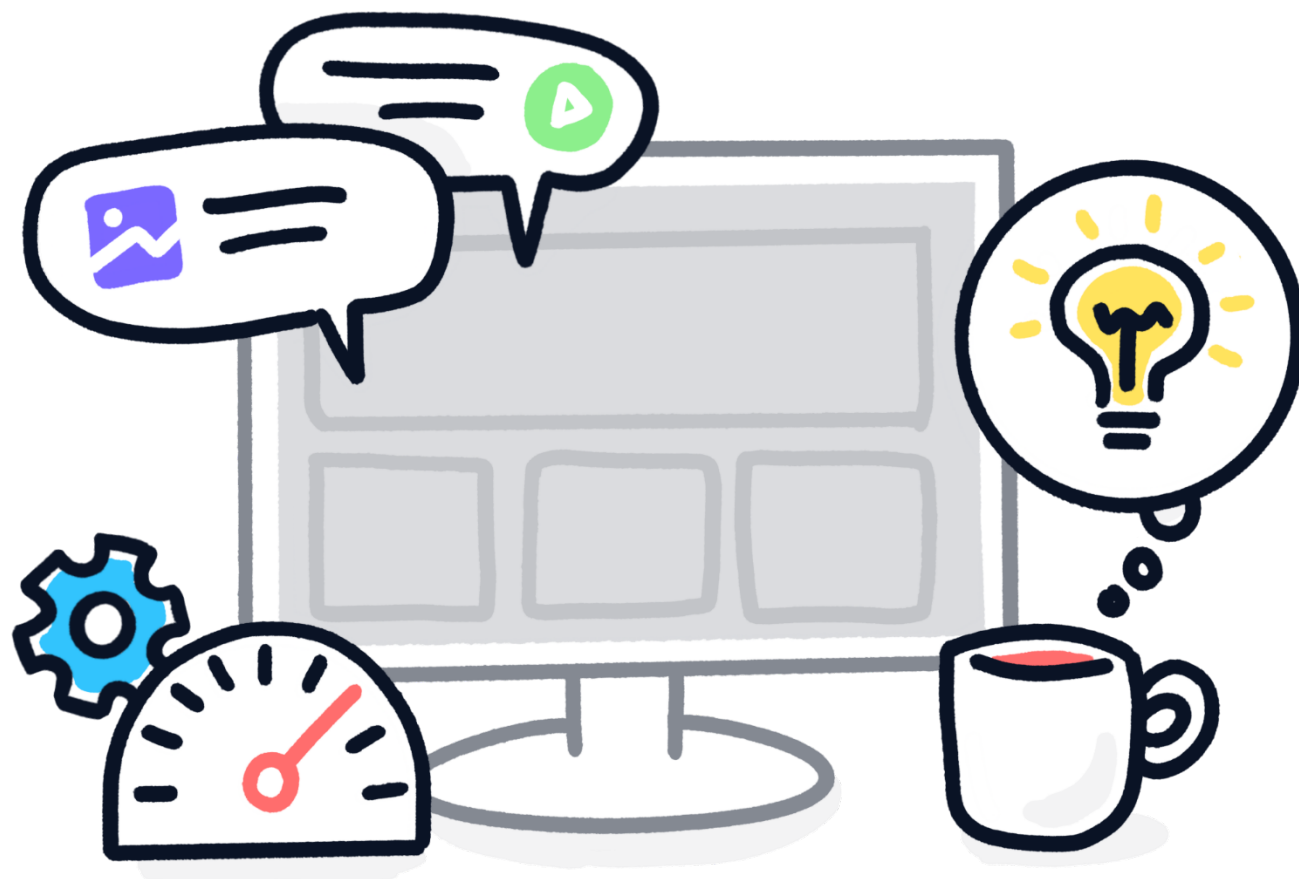
Knowledge checks

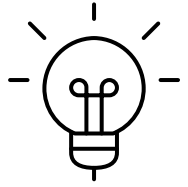
Go to kahoot.it

Make it smart

学习目标

- 使用小部件事件调用微流
- 使用各种微流动作来自动计算
- 了解微流的范围
- 了解两种类型的检索
- 了解存储属性和计算属性之间的区别
- 使用对象事件调用微流

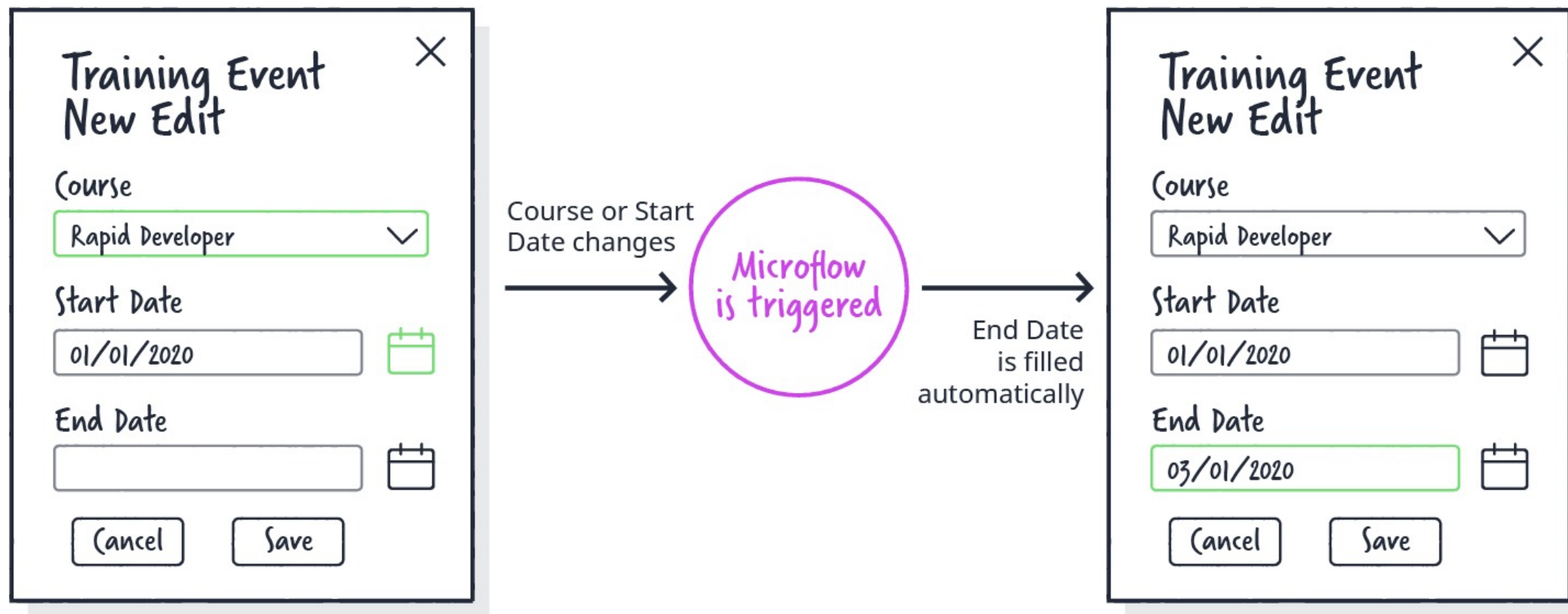




User Story 6

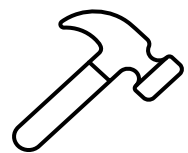
As an administrator, when scheduling a training event I want the end-date of the event to be automatically calculated, preventing me from making calculation errors.

自动填充培训事件结束日期



5个步骤

1. 触发微流
2. 填写计算的结束日期
3. 部署和测试
4. 分析错误并调整微流
5. 提交你的工程



从输入控件触发微流

- **On enter:** when the user enters (clicks on) the input widget
- **On change:** when the user leaves the input widget after making a change
- **On leave:** when the user leaves (closes) the input widget (no matter whether they changed the value of the widget or not)
- **On enter :** 当用户光标进入（点击）控件时
- **On change :** 当用户在进行更改后离开控件时
- **On leave :** 当用户光标离开（关闭）控件时（无论他们是否改变了控件的值）

Training Event New Edit

Course

Rapid Developer

Start Date

01/01/2020

End Date

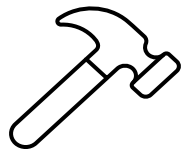
Cancel Save

微流表达式

元素	示例
方法	FunctionName (Ingredient 1, Ingredient 2)
变量	\$Trainee/EmailAddress
环境变量	[%CurrentDateTime%]

通用表达式

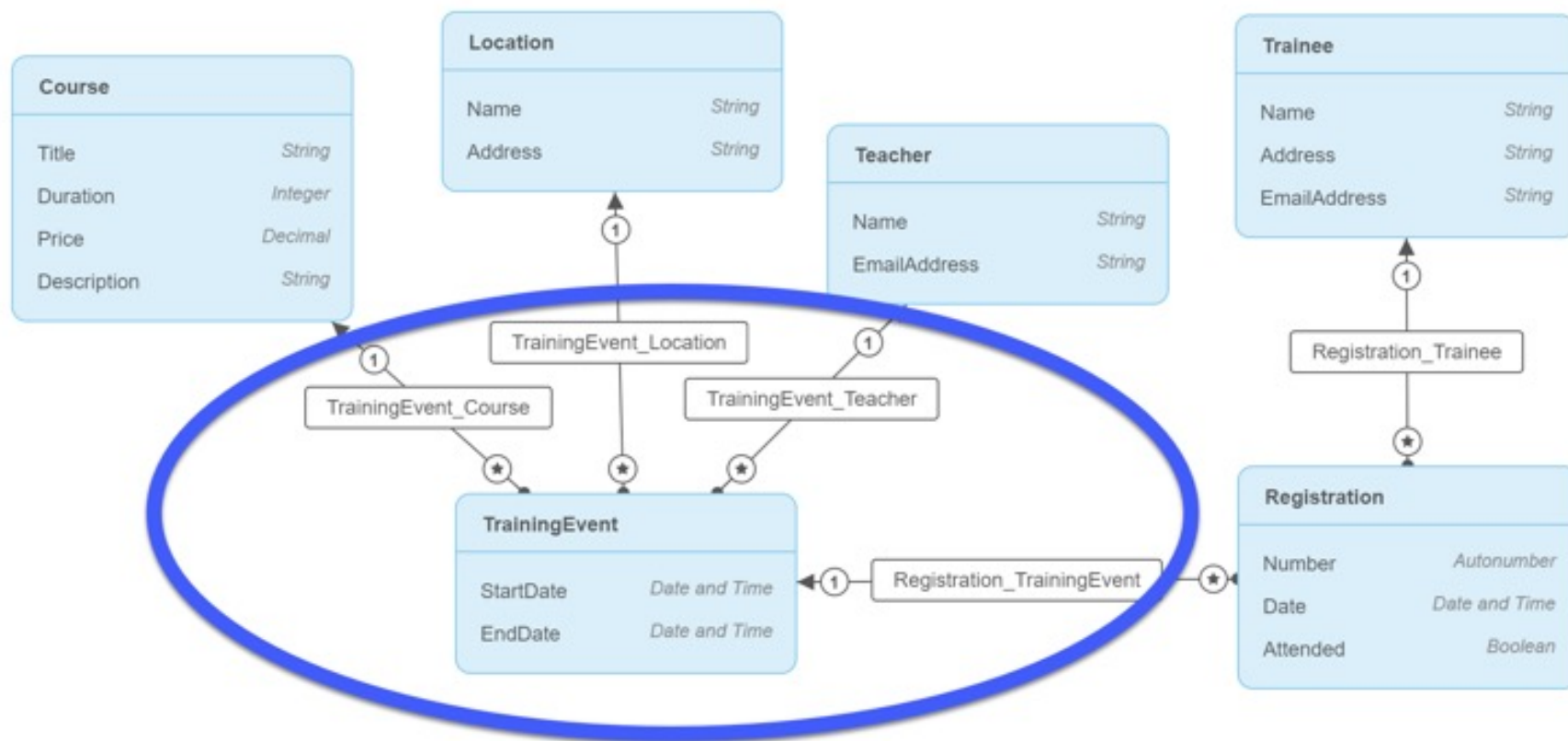
类型	表达式
算数	* : + -
关系	< > <= >= = !=
特殊	empty isNew
逻辑	and or not
条件	If then else



创建微流

1. Retrieve associated Course
2. Calculate the EndDate
 - `addDays(DateTime, Integer)`
 - `DateTime` = `StartDate (TrainingEvent)`
 - `Integer` = `Duration (Course)`
3. Set the newly calculated EndDate
 - Change Object activity, change the `TrainingEvent`
 - Commit: No
 - Refresh client: Yes

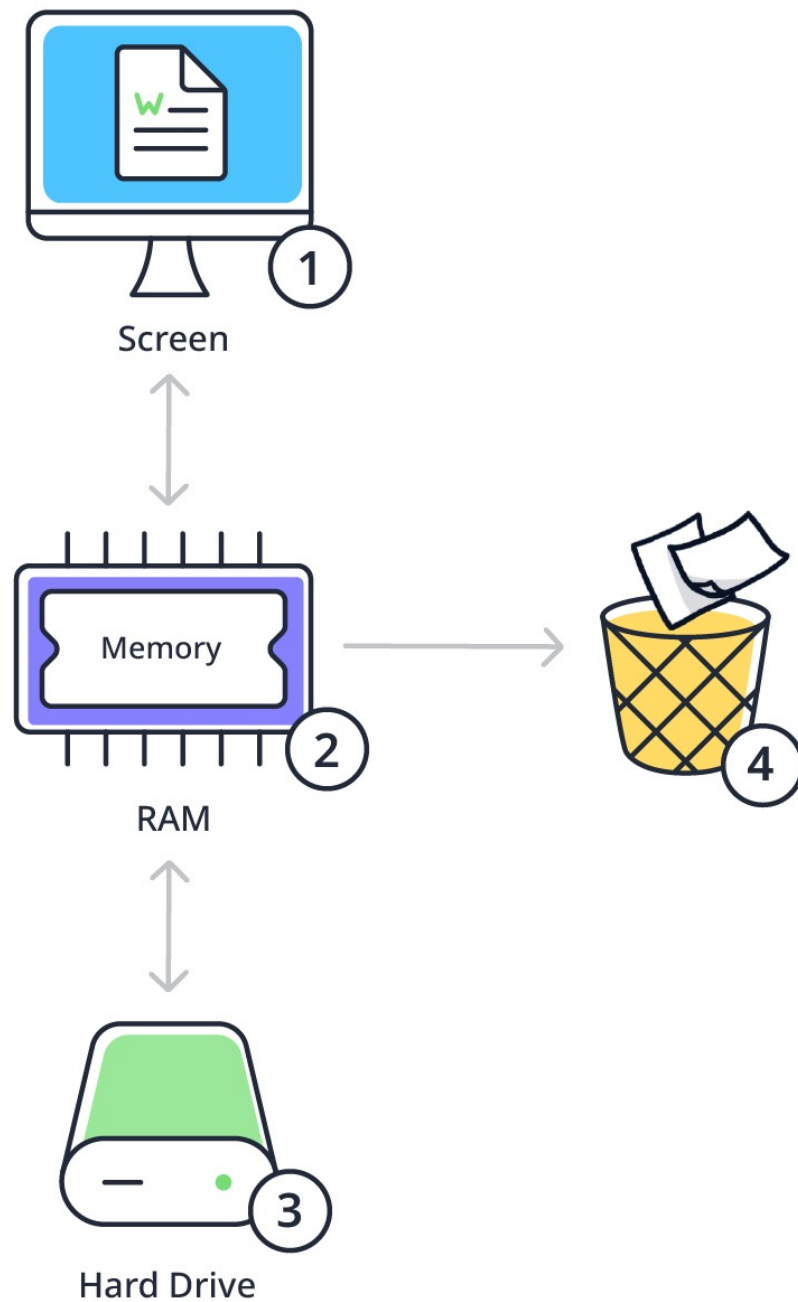
微流的数据读取范围



获取数据

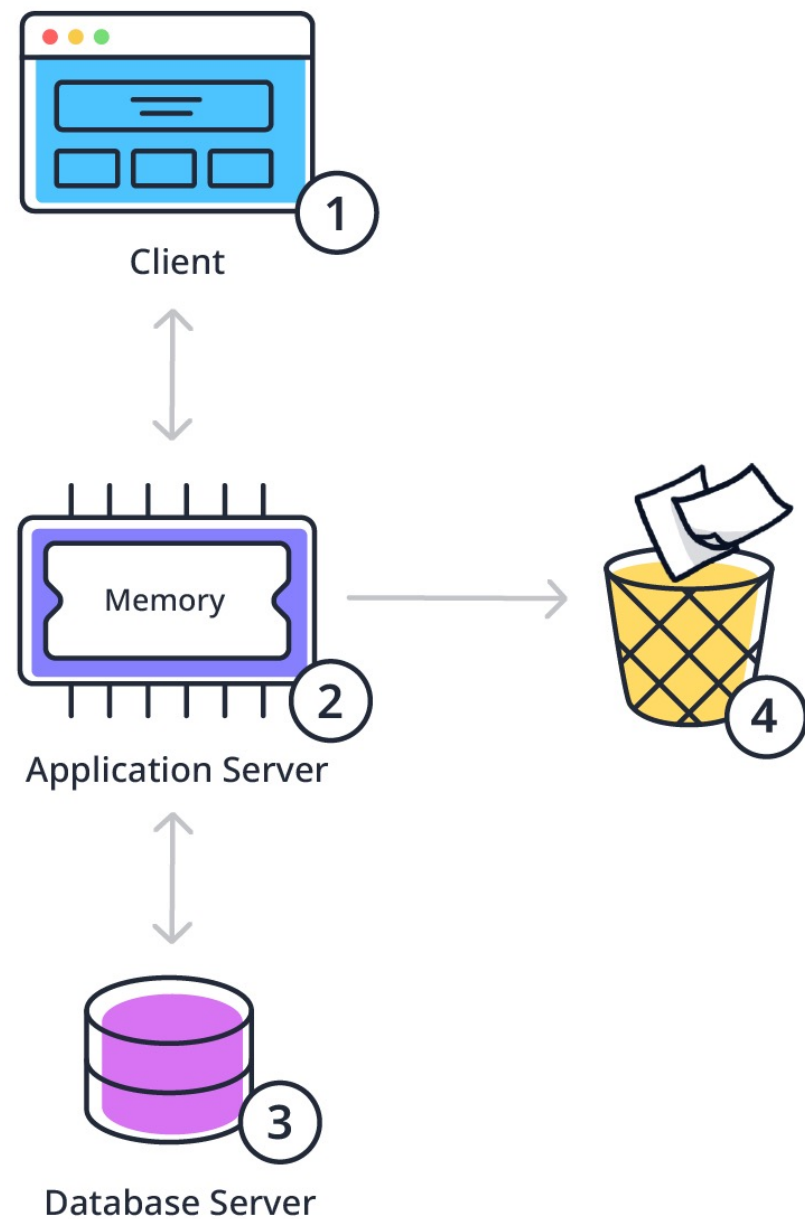
Example:

When writing a text document



获取数据

When using Mendix



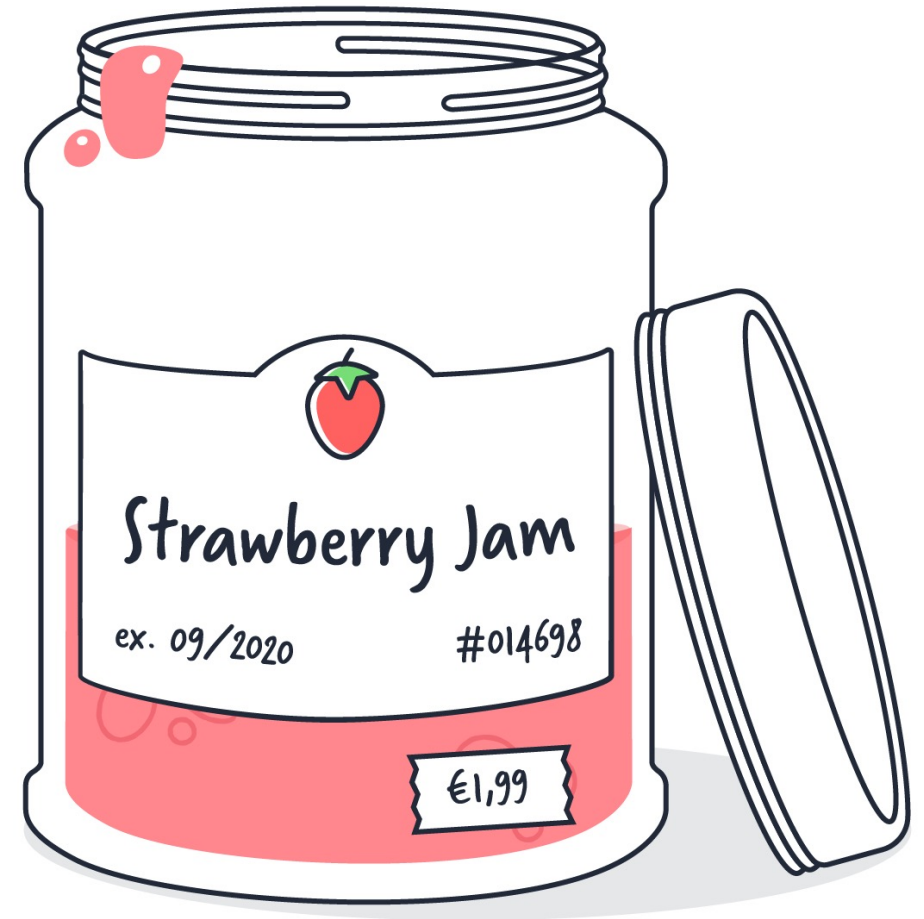
由关联获取数据

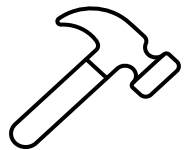
Doing a retrieve from memory is called “By Association Retrieve”.

Benefits:

- Faster (no connection to the database is needed)
- Information not in the database yet

Transient objects





完善你的微流

- 1) Retrieve your data
- 2) Complete the microflow expression
- 3) Run Locally and Crash!

The screenshot displays two overlapping dialog boxes in the Mendix Studio interface. The background dialog is titled "Select Association" and features a search filter, expand/collapse controls, and a tree view of variables. The foreground dialog is titled "Edit Change Item" and is used for configuring a change operation.

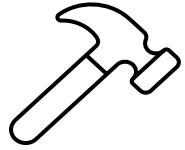
Select Association Dialog:

- Filter: (empty text box)
- Expand All / Collapse All buttons
- Variables tree:
 - TrainingEvent (MyFirstModule.TrainingEvent)
 - Registration_TrainingEvent (List of MyFirstModule.Registration)
 - TrainingEvent_Course (MyFirstModule.Course) - **Selected**
 - TrainingEvent_Location (MyFirstModule.Location)
 - TrainingEvent_Teacher (MyFirstModule.Teacher)
 - currentSession (System.Session)
 - currentUser (System.User)
 - latestError (System.Error)
 - latestHttpResponse (System.HttpResponse)
 - latestSoapFault (System.SoapFault)

Edit Change Item Dialog:

- Member: EndDate (Date and time)
- Type: ☒ Set ☐ Add ☐ Remove
- Value: `addDays ($TrainingEvent/StartDate, $Course/Duration)`
- Generate button
- OK / Cancel buttons

At the bottom right of the "Select Association" dialog, there are buttons for "Select", "None", and "Cancel".



检查错误

Add breakpoint on the OCH_TrainingEvent_CalculateEndDate microflow

The screenshot displays the Mendix Studio interface. The main canvas shows a microflow diagram with the following components:

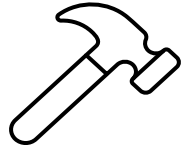
- A start node (green circle) leading to an activity node labeled "Retrieve Course by \$TrainingEvent/TrainingEvent". This node is highlighted with a red border, indicating a breakpoint has been set.
- An arrow connects the "Retrieve Course by" node to a "Change 'TrainingEvent' (EndDate)" node.
- The "Change" node is followed by an end node (red circle).

Below the canvas, the "Debugger" tab is active. It shows the current state of the microflow:

- Stories:** 13
- Changes:** 4
- Errors:** 0
- MxAssist Performance Bot:** Console
- Debugger:** Paused microflow/nanoflow/rule
- Object:** MyFirstModule.OCH_TrainingEvent_CalculateEndDate
- Retrieve objects activity:** Retrieve Course by \$TrainingEvent/TrainingEvent

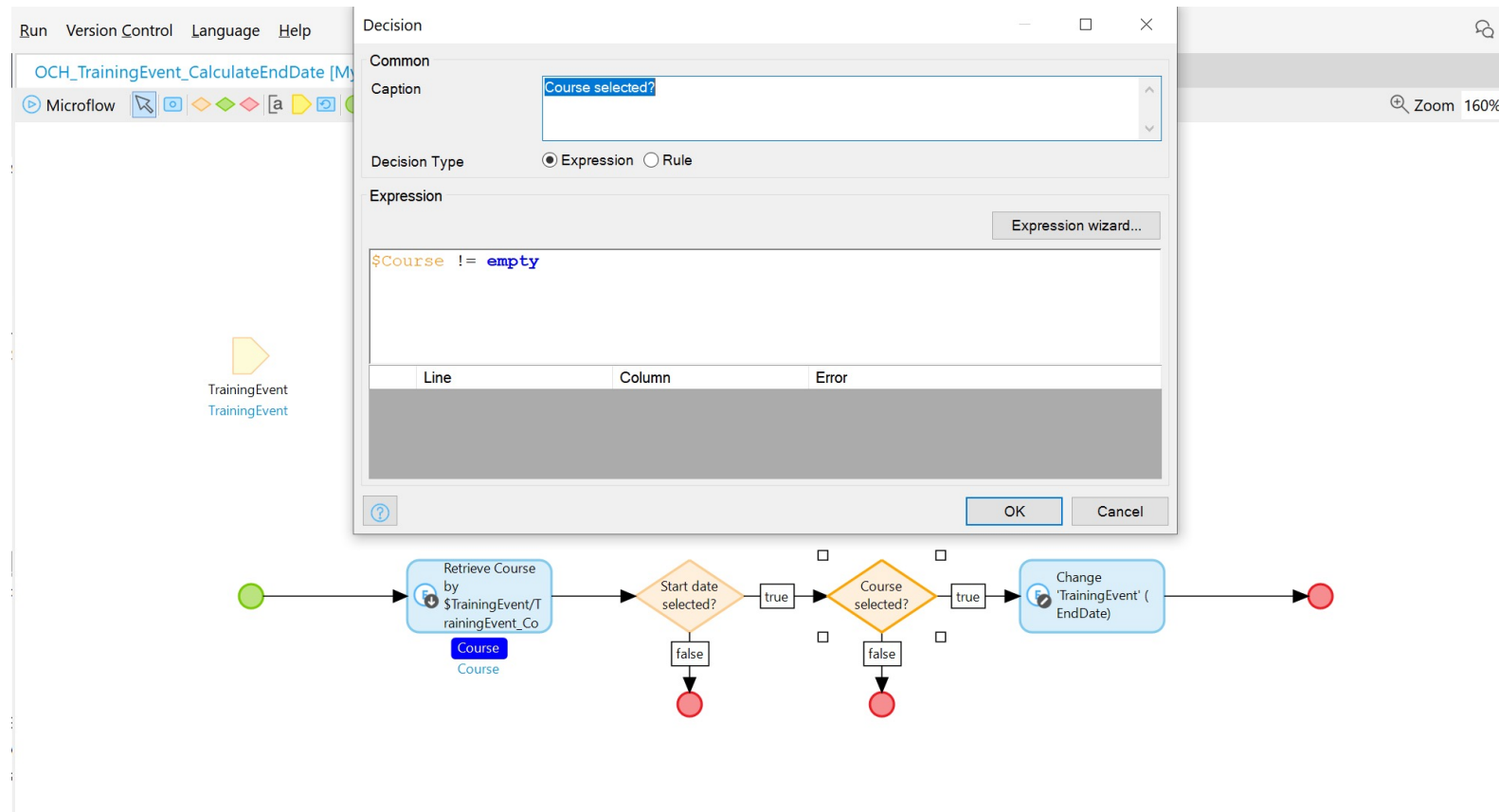
The **Variables** pane on the right lists the following variables:

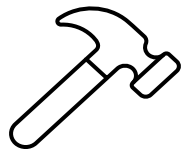
Name	Type	Value
currentDeviceType	Enumeration 'System.Device...	Desktop
currentSession	System.Session	(id: "6192449487634533", state: normal)
currentUser	System.User	(id: "562949953421413", state: normal)
TrainingEvent	MyFirstModule.TrainingEvent	(id: "7881299347898372", state: instantiated)



使用判定

Add two Decisions to check if the start date and course are selected.





完成微流并提交

- 1) Remove breakpoint
- 2) Run Locally
- 3) Find bug & fix
- 4) Commit

Edit Change Item

Member
EndDate (Date and time)

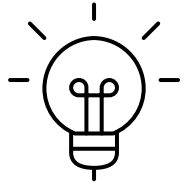
Type
☒ Set ☐ Add ☐ Remove

Value Generate

```
addDays($TrainingEvent/StartDate, $Course/Duration - 1)
```

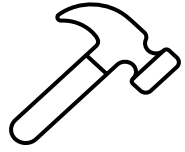
Line	Column	Error
------	--------	-------

OK Cancel



User Story 7

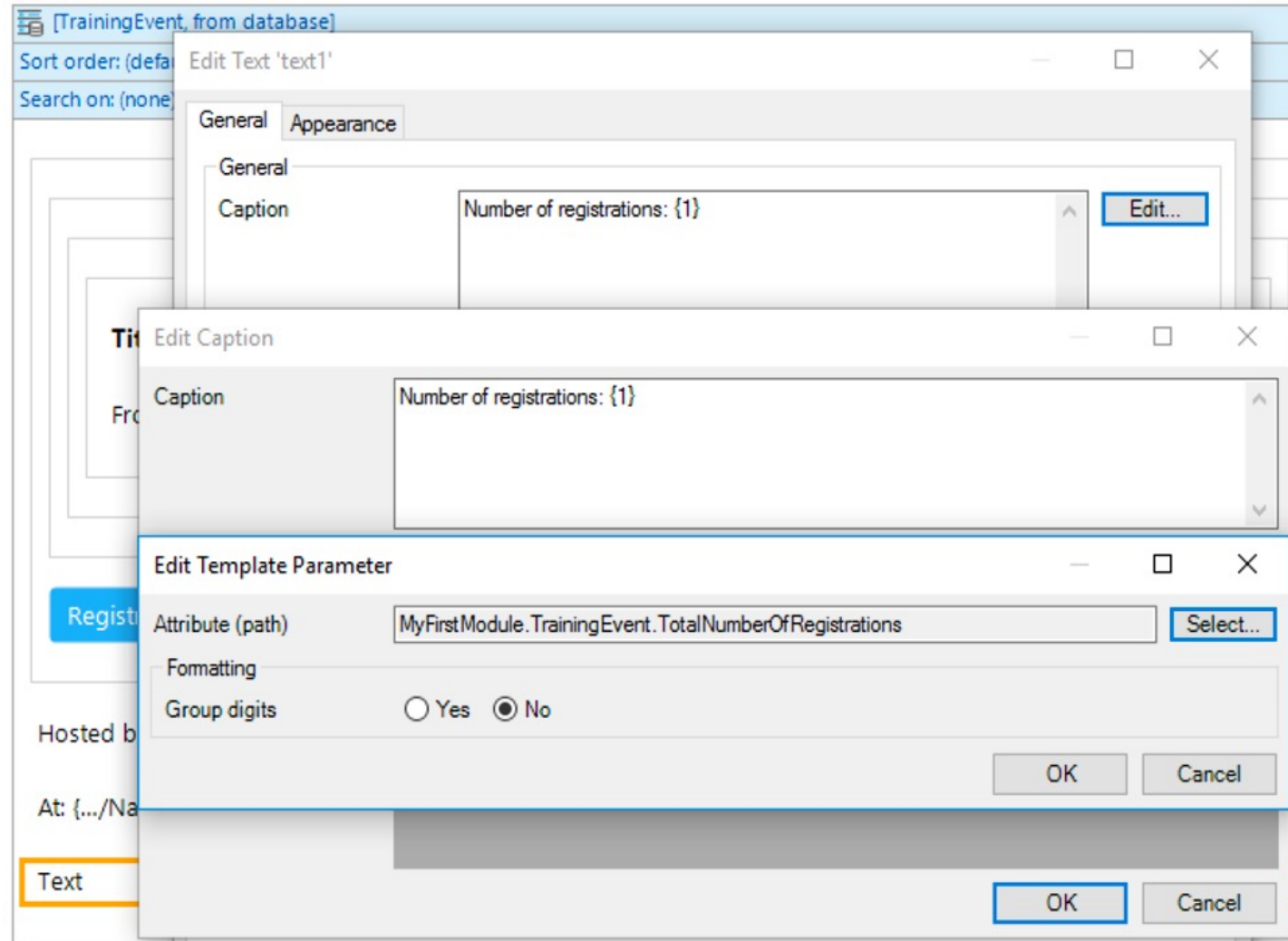
As a teacher, I want to be able to see the number of trainees attending a training event at any time, so that I know what resources I need.

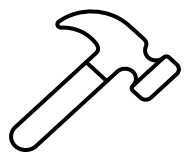


添加新属性

Stored or Calculated Attribute?

- 1) New attribute
- 2) Text widget
- 3) Parameter
- 4) Edit caption



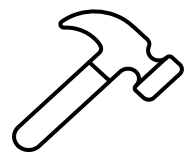


添加对象事件触发器

Prefixes for object event handlers:

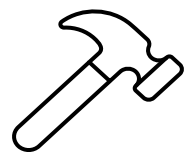
	Before	After
Create	BCR	ACR
Commit	BCO	ACO
Rollback	BRO	ARO
Delete	BDE	ADE

In our case: ACO_ADE_Registration_SetTotalNumberOfRegistrations



计算注册人数

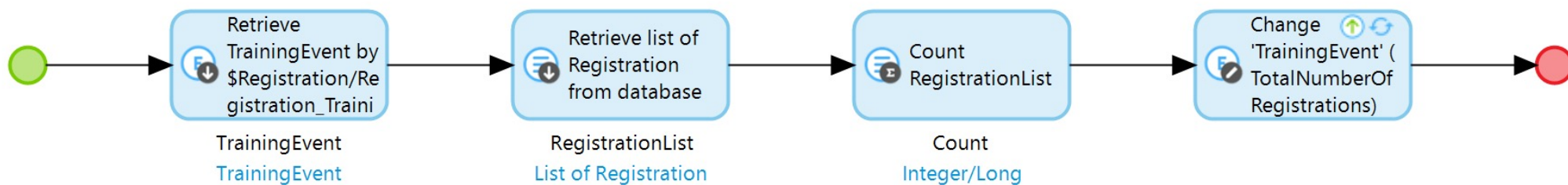
1. Retrieve the associated **TrainingEvent**
2. Retrieve the Registrations that belong to the **TrainingEvent**
3. Count the list of Registrations
4. Set the total number of Registrations as the new value
 - **Change Object** activity, change the **TrainingEvent**
 - Commit: **Yes**
 - Refresh client: **Yes**



计算注册人数



Registration
Registration



Summary

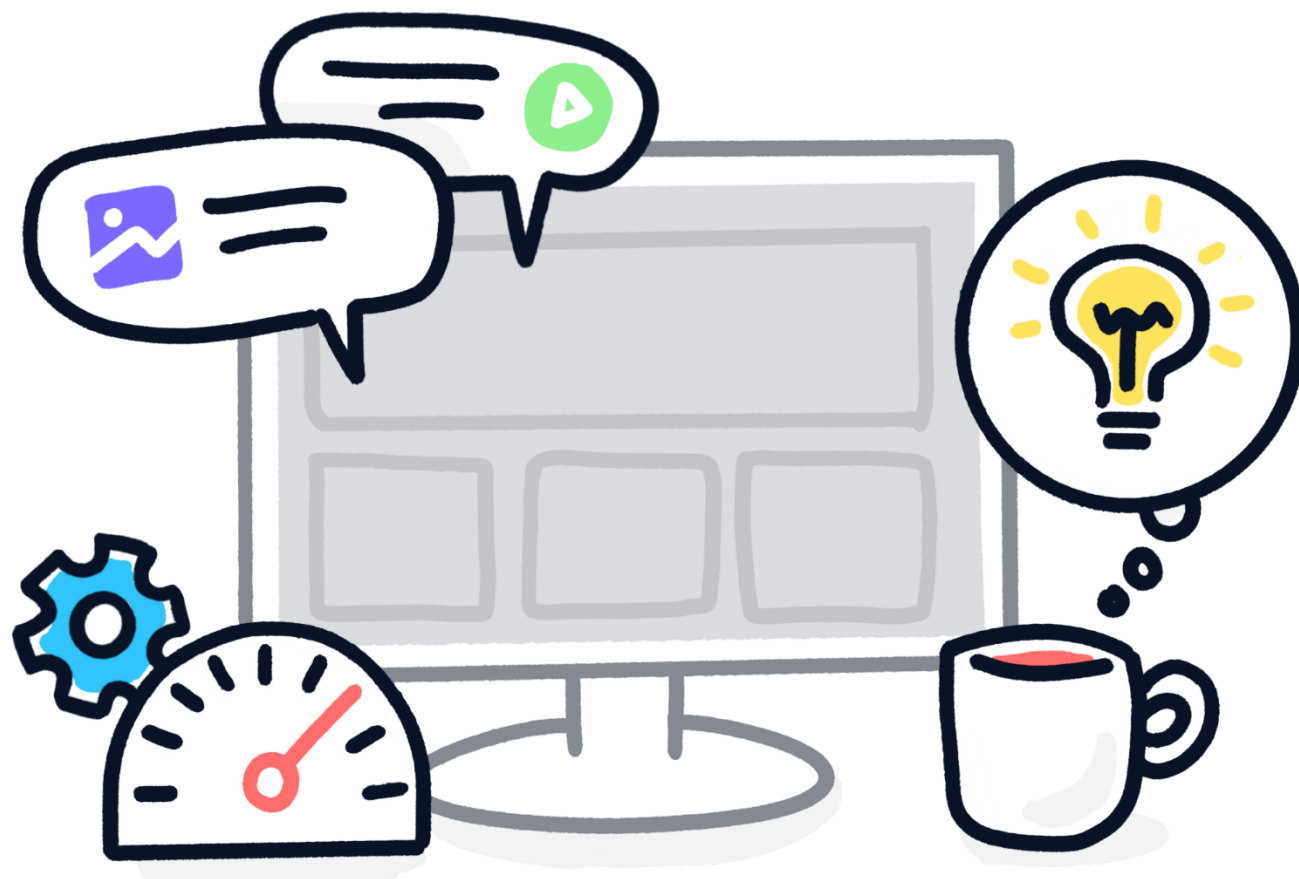
Knowledge checks

Go to kahoot.it

Make it valid & consistent

学习目标

- 了解拥有有效且一致的数据的重要性
- 识别不同类型的验证
- 使用微流应用验证
- 防止删除好的数据
- 清理过时的数据



数据校验为何重要？

不同类型的错误	如何预防？
空记录	校验规则
非法数据	正则表达式
重要数据被删除	删除保护
垃圾数据	级联删除

数据验证

验证是在对象存储在数据库中之前应该满足的条件。

您可以将验证添加到：

- 领域模型
- 微流
- 页面

数据验证的类型

类型	描述	示例
Required	属性不能为空	课程描述
Unique	属性值必须唯一	课程名称
Equals	属性值必须等于特定值	重复输入密码
Range	属性值必须处于某个范围内	课程时长
Regular expression	属性值需满足某个正则表达式	电子邮件地址 (user@something.com)
Maximum length	属性值最大长度	邮编

如何处理错误的数据？

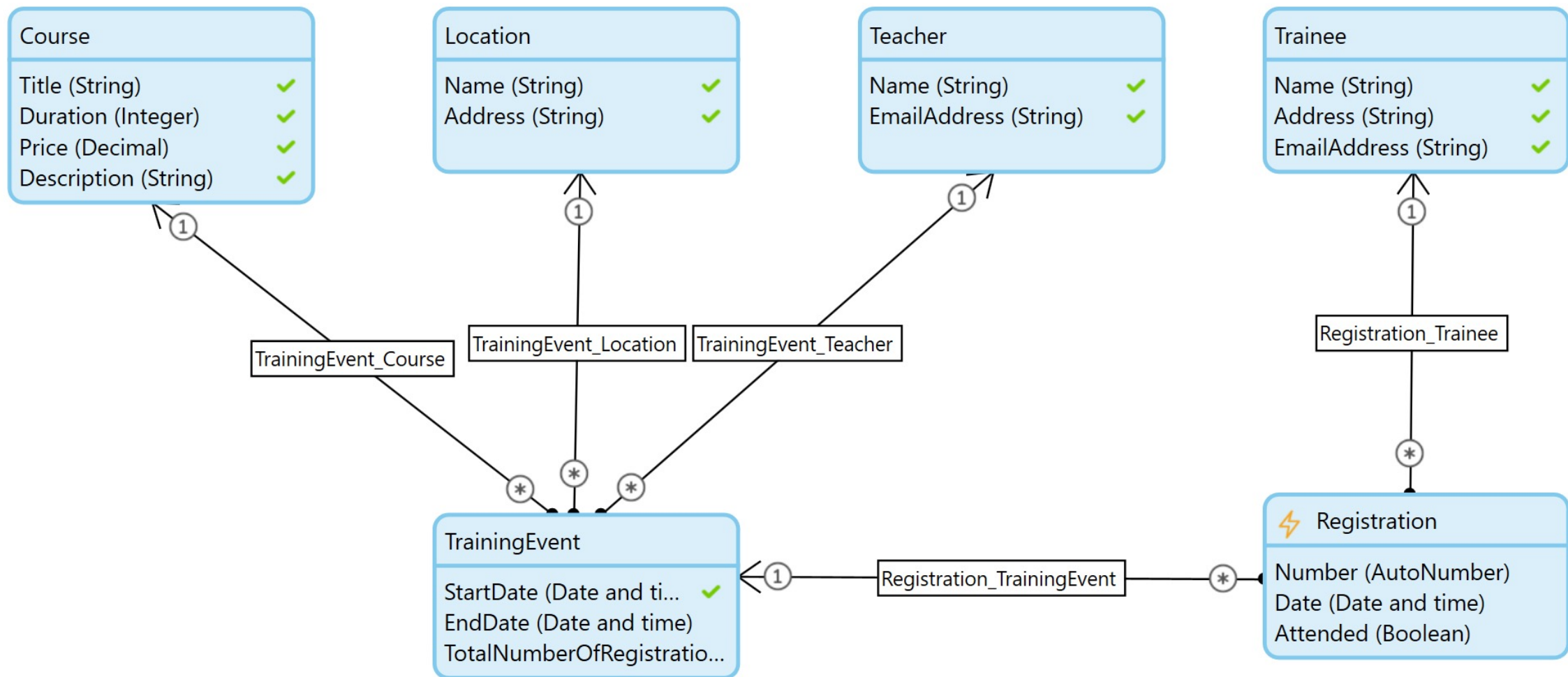
在何处触发校验？	反馈形式
表单页面 (有输入控件)	在输入控件下方显示错误信息
页面 (无输入控件)	弹出错误信息对话框
系统	日志中的错误信息

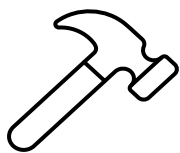


User Story 8

作为管理员，我希望数据有效且一致，
所以我的数据库不会变得混乱。

我们的域模型





在微流中验证

TrainingEvent NewEdit

Course

Please select a course.

Start date

mm/dd/yyyy

Please select a start date.

End date

mm/dd/yyyy

Location

Please select a location.

Teacher

Please select a teacher.

Save Cancel

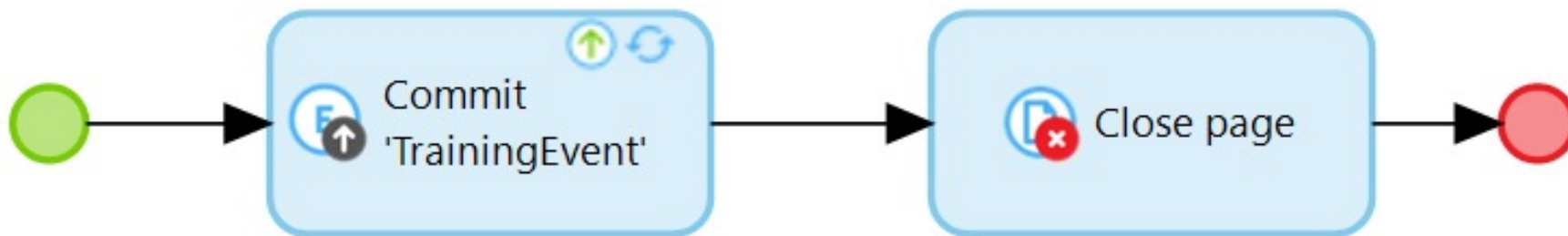
实体	属性或关联	验证规则
TrainingEvent	StartDate	Required
	Teacher selection	Required
	Course selection	Required
	Location selection	Required

1. 将保存按钮更改为微流按钮
2. 模仿默认保存行为
3. 创建所有验证检查
4. 创建每个字段的验证反馈消息
5. 向用户一次性展示所有反馈

步骤 1 & 2: 创建基本微流

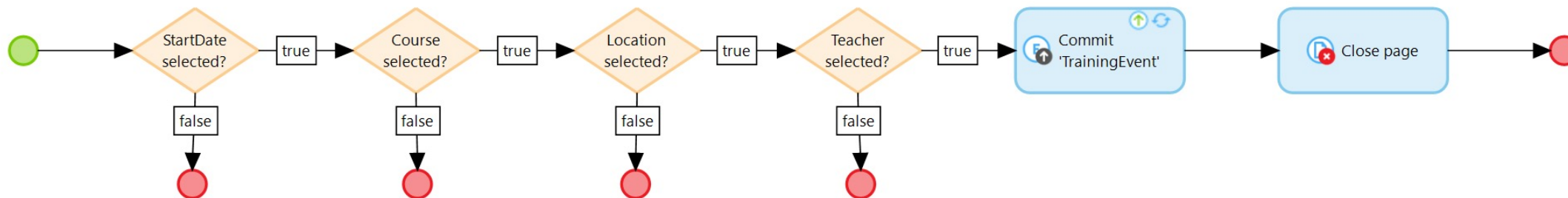
确保 Save 按钮触发验证微流：ACT_TrainingEvent_Save


TrainingEvent
TrainingEvent

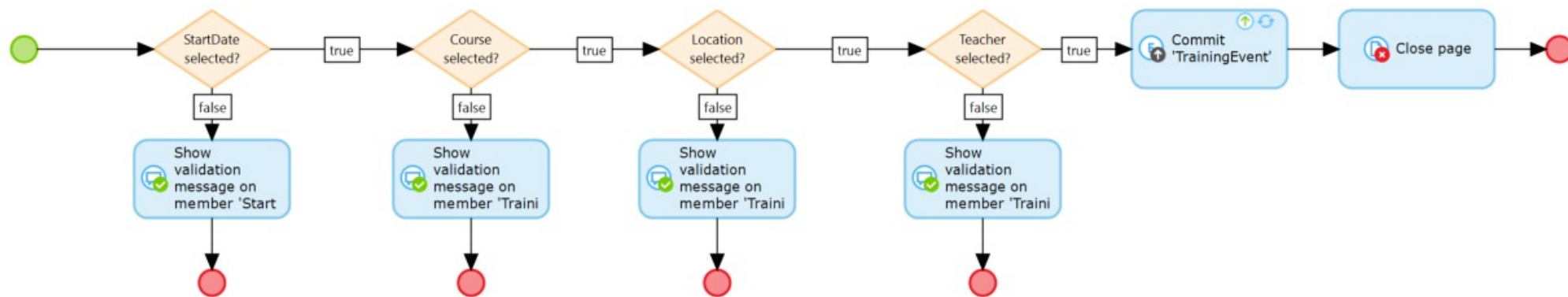


步骤 3: 添加数据验证

TrainingEvent
TrainingEvent

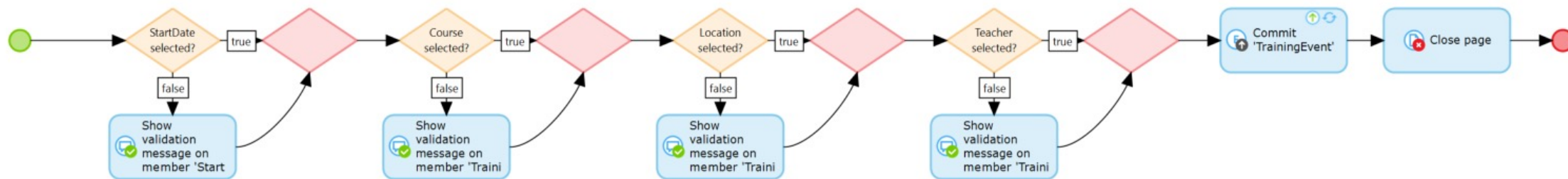
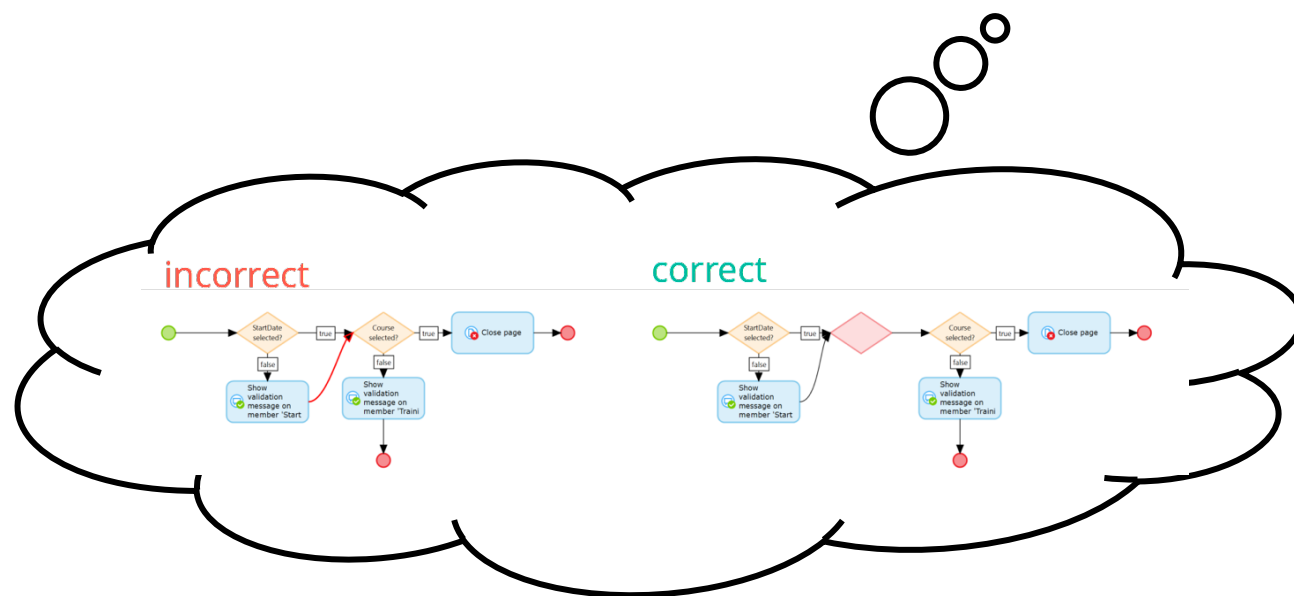


步骤 4: 添加验证反馈

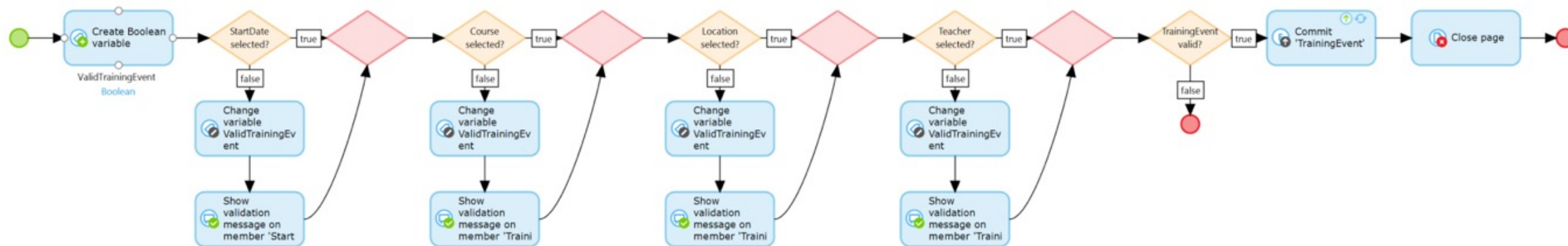


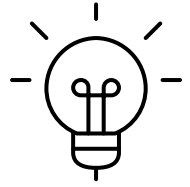
步骤 5: 合并判定分支

TrainingEvent
TrainingEvent



步骤6: 添加终止标记





User Story 9

作为管理员，我希望能够删除没有注册的培训活动，以防我意外删除人们已经付费参加的培训活动。

删除保护

Properties of Association 'MyFirstModule.Registration_TrainingEvent'

Common

Name: Registration_TrainingEvent

Documentation:

Multiplicity

☐ [1 - 1] One 'TrainingEvent' object is associated with one 'Registration' object

☒ [1 - *] One 'TrainingEvent' object is associated with multiple 'Registration' objects

☐ [* - *] Multiple 'TrainingEvent' objects are associated with multiple 'Registration' objects

On delete of 'TrainingEvent' object

☐ Keep 'Registration' object(s)

☐ Delete 'Registration' object(s) as well

☒ Delete 'TrainingEvent' object only if it is not associated with 'Registration' object(s)

Error message if 'TrainingEvent' object cannot be deleted

Sorry, this training event can't be deleted. People have already registered for it!

On delete of 'Registration' object

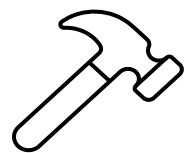
☒ Keep 'TrainingEvent' object(s)

☐ Delete 'TrainingEvent' object(s) as well

☐ Delete 'Registration' object only if it is not associated with 'TrainingEvent' object(s)

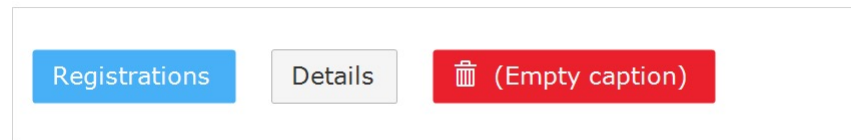
?

OK Cancel



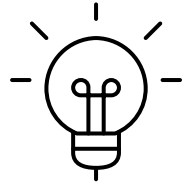
删除保护

步骤 1: 添加删除按钮



步骤 2: 设置删除行为





User Story 10

作为管理员，我希望能够删除学员及其所有注册信息，以便在他们不再希望成为 LearnNow 学生时将其从系统中删除。

级联删除

Properties of Association 'MyFirstModule.Registration_Trainee'

Common

Name:

Documentation:

Multiplicity

☐ [1 - 1] One 'Trainee' object is associated with one 'Registration' object

☒ [1 - *] One 'Trainee' object is associated with multiple 'Registration' objects

☐ [* - *] Multiple 'Trainee' objects are associated with multiple 'Registration' objects

On delete of 'Trainee' object

☐ Keep 'Registration' object(s)

☒ Delete 'Registration' object(s) as well

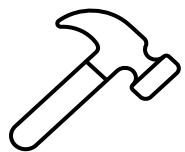
☐ Delete 'Trainee' object only if it is not associated with 'Registration' object(s)

On delete of 'Registration' object

☒ Keep 'Trainee' object(s)

☐ Delete 'Trainee' object(s) as well

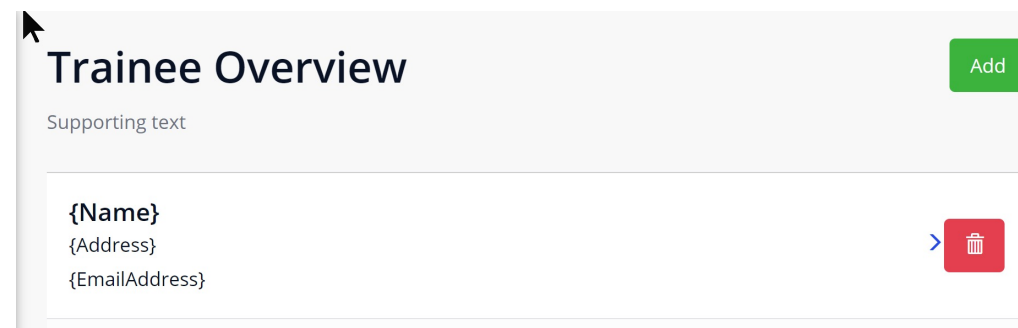
☐ Delete 'Registration' object only if it is not associated with 'Trainee' object(s)



级联删除

步骤 1: 添加删除按钮，Style: Danger

步骤 2: 设置删除行为



Summary

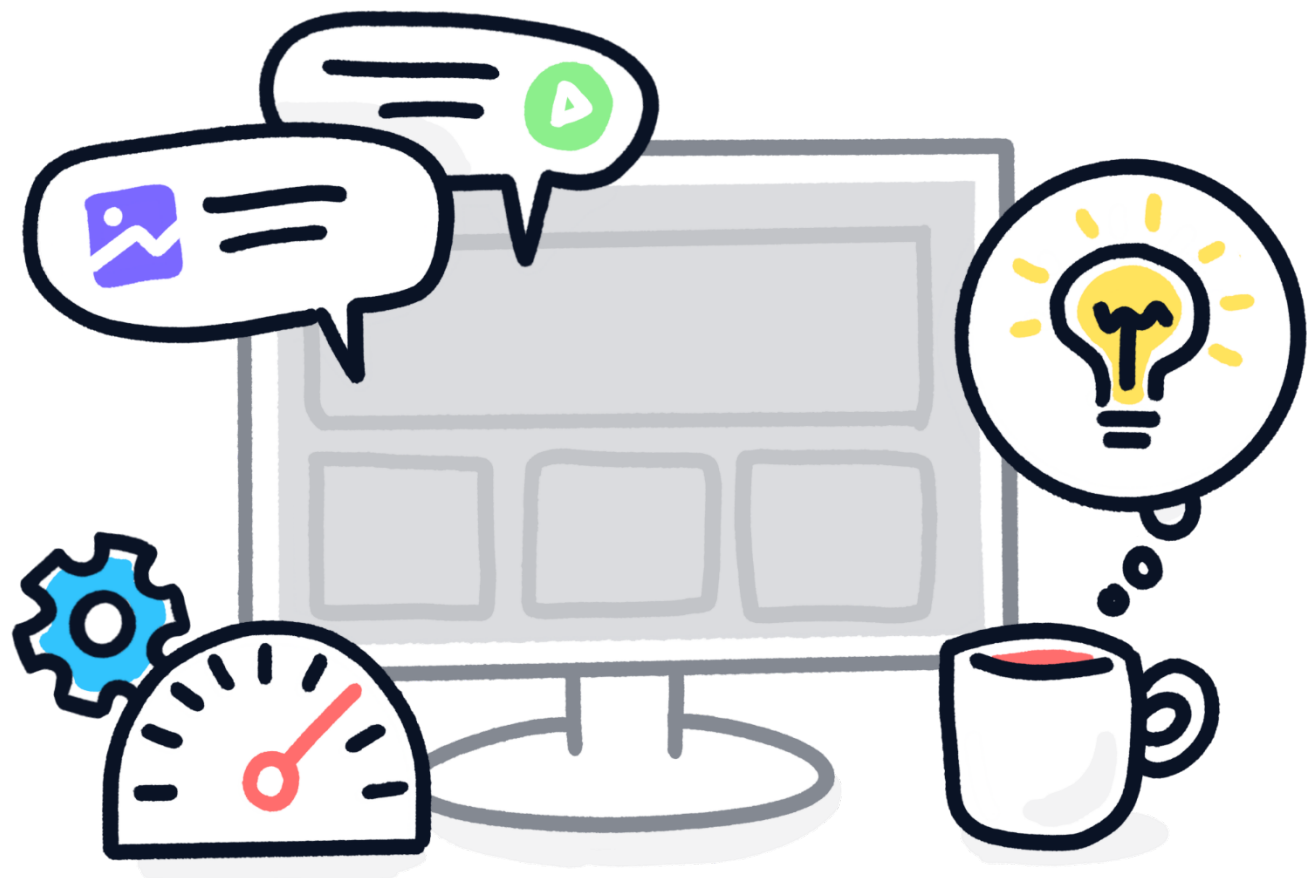
Knowledge checks

Go to kahoot.it

Make it secure

学习目标

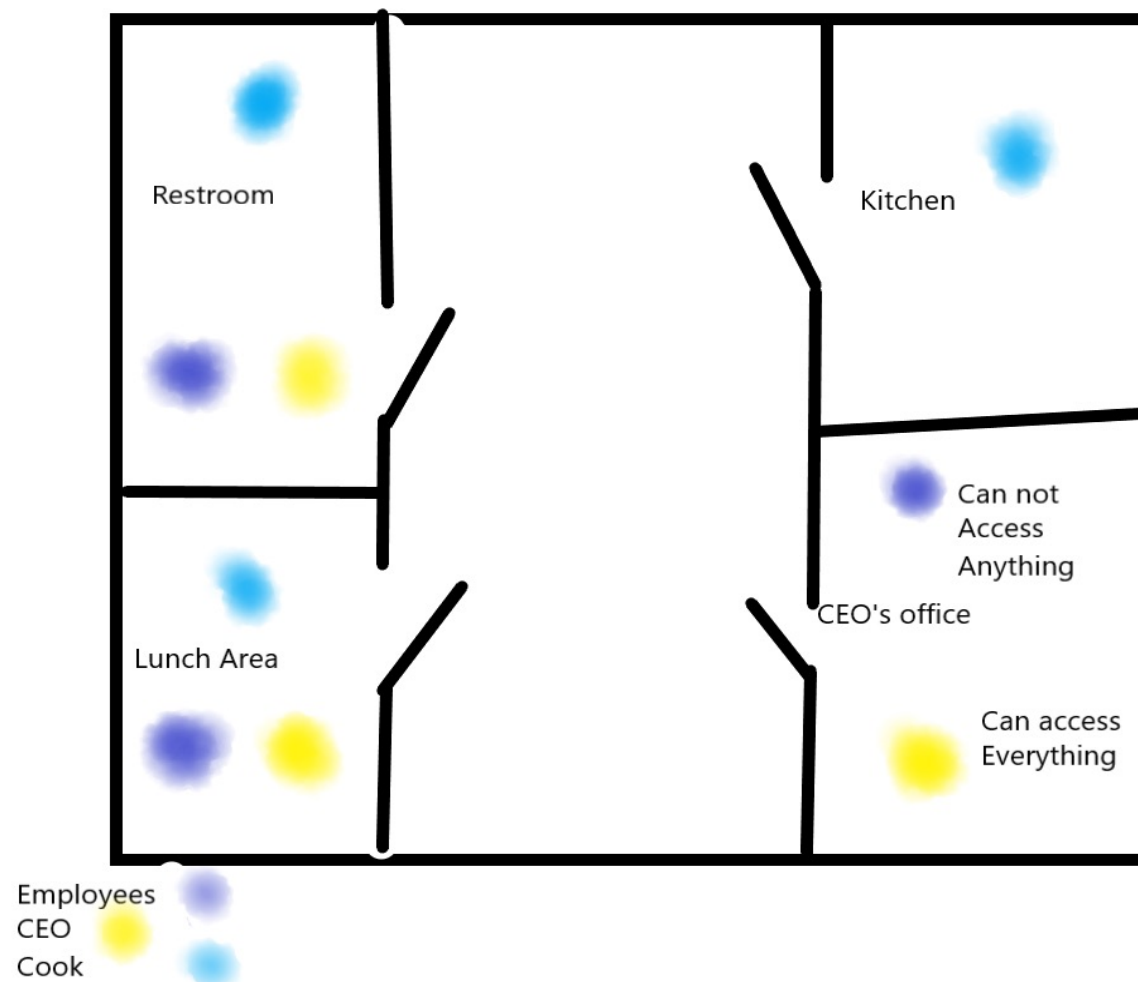
- 了解保护应用程序的重要性
- 了解三个安全级别
- 了解两个安全位置
- 设置模块和项目安全
- 将用户角色连接到模块角色
- 设置页面、微流和实体访问权限
- 使用条件可见性来定制页面和实体访问权限



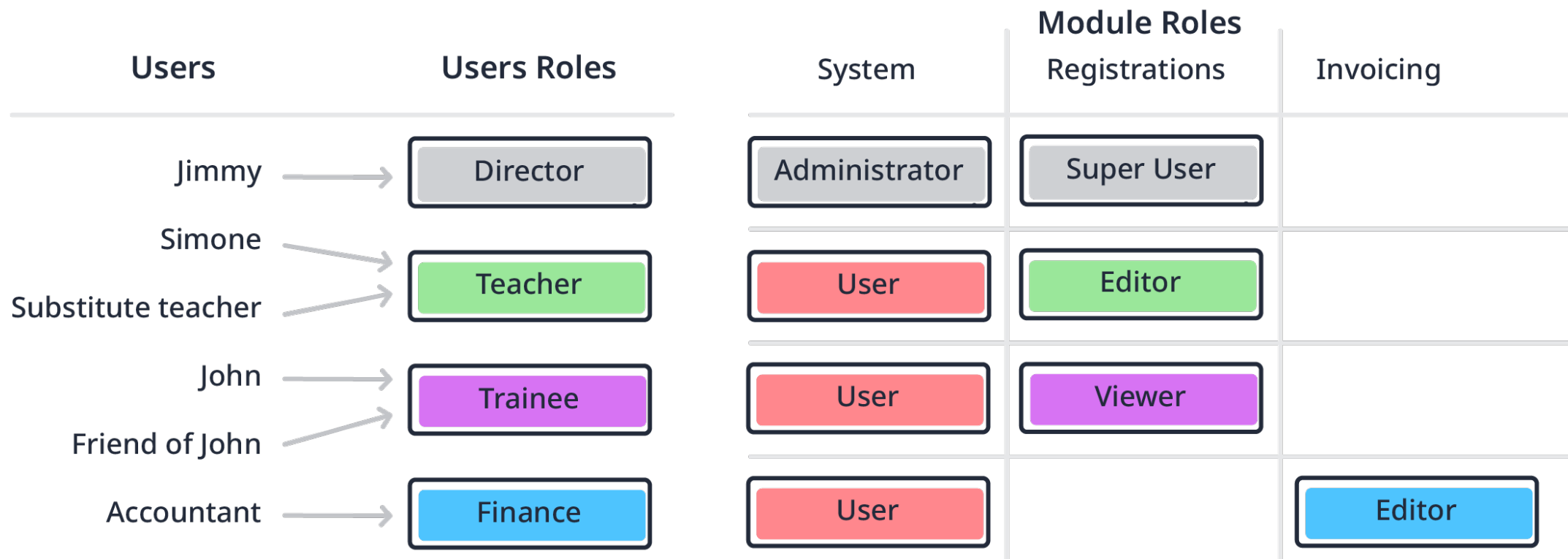
让应用更安全

- 为何重要?
- 保护对象
 - App安全
 - 模块安全
- 安全级别
 - Off
 - Prototype/Demo
 - Production

概念



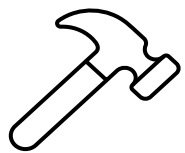
用户角色与模块角色





User Story 11

作为管理员，我希望应用程序是安全的，以便我遵守公司数据保护规则。



创建模块角色

Security of Module 'MyFirstModule'

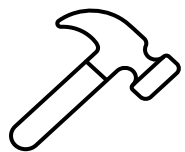
Module roles Page access Microflow access Nanoflow access Workflow access Entity access

New Edit Delete Duplicate

Name	Documentation
Administrator	
Teacher	
Trainee	

?

OK Cancel



创建用户角色

- 1) App Security: Prototype/Demo
- 2) 'User' 用户角色 → 'Teacher'
- 3) 新建用户角色 'Trainee'
- 4) 检查错误

Errors

4 Errors

0 Deprecations

1 Warnings

Check now

Limit to current tab

	Error Code	Message	Element
⊗	2 CE0106	At least one allowed role must be selected if the microflow is used from navigation, a page, a nanoflow or a published service.	-
⊗	3 CE0557	At least one allowed role must be selected if the page is used from navigation or a button.	-
⊗	4 CE0557	At least one allowed role must be selected if the page is used from navigation or a button.	-
⊗	5 CE0106	At least one allowed role must be selected if the microflow is used from navigation, a page, a nanoflow or a published service.	-

StoriesChangesErrors (4)ConsoleDebugger

Add User Role

Name

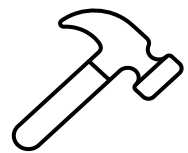
Trainee

Create module role in modules:

☐ MyFirstModule

☐ Select / deselect all

OKCancel

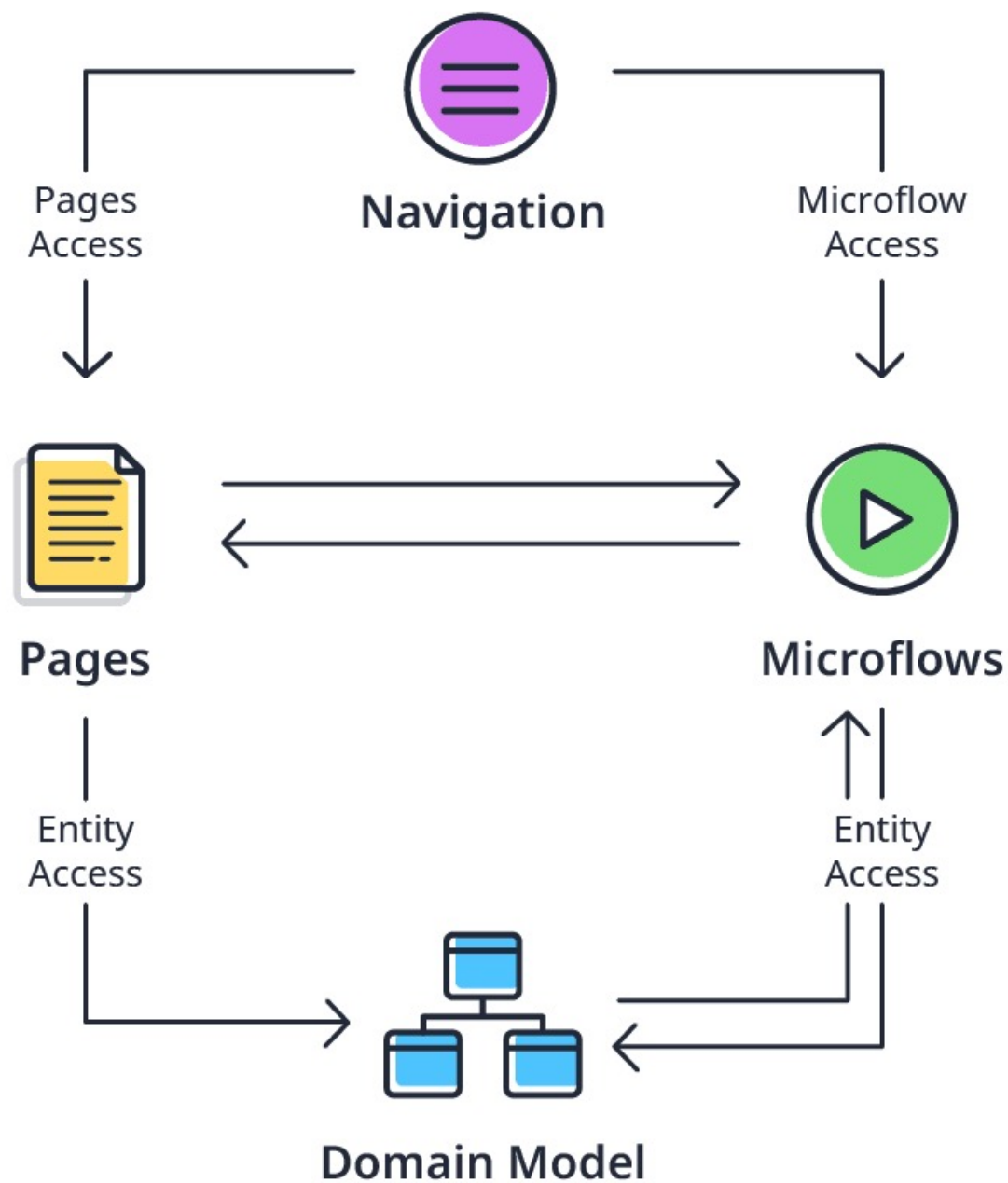


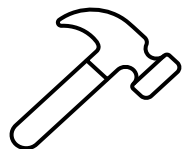
为用户角色分配模块角色

New Edit Delete	
Name ▲	Module roles
Administrator	Administration.Administrator, System.Administrator, MyFirstModule.Administrator
Teacher	Administration.User, System.User, MyFirstModule.Teacher
Trainee	Administration.User, System.User, MyFirstModule.Trainee

访问权限

- 页面访问
- 微流访问
- 实体访问

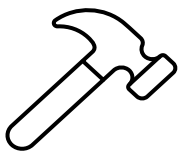




设定页面与微流 访问权限

- 只有管理员才能创建、删除和编辑培训活动。
- 教师和学员不应访问这些功能。

Page	Administrator	Teacher	Trainee
Course			
• NewEdit	Y	N	N
• Overview	Y	Y	N
Home	Y	Y	N
Location			
• NewEdit	Y	N	N
• Overview	Y	Y	N
Registration			
• NewEdit	Y	N	N
Teacher			
• NewEdit	Y	N	N
• Overview	Y	Y	N
Trainee			
• NewEdit	Y	N	N
• Overview	Y	Y	N
TrainingEvent			
• NewEdit	Y	N	N
• Overview	Y	Y	Y
• Registrations	Y	Y	N



设置demo 用户

App Security

Security level

Security level ☐ Off ☐ Prototype / demo ☒ Production

Full security is applied. Configure administrator and anonymous access and define user roles and security for forms, microflows, entities, and reports.

Check security ☒ Yes ☐ No

If there are no other errors, Mendix Studio Pro checks per user role whether forms that are accessible for a certain role only refer to attributes and associations that are accessible for that same role. This assumes that each user role is independent and that users do not need two or more roles to access functionality in your application.

App status ● Incomplete

Module status User roles Administrator Demo users Anonymous users Password policy

Enable demo users ☒ Yes ☐ No

Demo users are only available when running locally or in a Free App.

New Edit Delete

User name	Entity	User roles
demo_administrator	Account	Administrator
demo_teacher	Account	Teacher
demo_trainee	Account	Trainee

Edit Demo User

User name

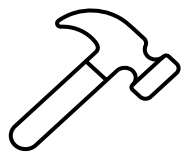
Password Passwords for demo users are automatically generated. [Copy password to clipboard.](#)

Entity

User roles ☐ Administrator ☐ Teacher ☒ Trainee

OK Cancel

OK Cancel



基于不同角色的首页

Add navigation profile

Responsive web Phone web offline

General

Application title LearnNow Edit...

Application icon Atlas_Core.Content.Mendix Select... Show

Home pages

Default home page MyFirstModule.Home_Web Select... Show

Role-based home pages Trainee Edit...

Progressive Web App

☒ Publish as a Progressive Web App

☒ Allow 'Add to Home screen' prompt

☒ Preload static resources

To use all Progressive Web App features, the app needs to be published.

[Read more about Progressive Web Apps](#)

Menu

New item New subitem Edit Delete Go to target

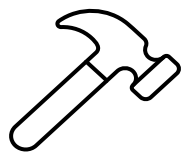
Caption	Action
Home	Open page 'MyFirstModule.Home_Web'
Course Overview	Open page 'MyFirstModule.Course_Overview'
Location Overview	Open page 'MyFirstModule.Location_Overview'
Teacher Overview	Open page 'MyFirstModule.Teacher_Overview'
Trainee Overview	Open page 'MyFirstModule.Trainee_Overview'
Training Events	Open page 'MyFirstModule.TrainingEvent_Overview'

Role-based home pages for responsive

New Delete Move up Move down Select target Go to target

User role	Target
Trainee	MyFirstModule.TrainingEvent_Overview

OK Cancel



设置实体访问权限

Module Security Type 'Security'

Module roles Page access Nanoflow access Microflow access Entity access

Note: Changes you make here modify the domain model.

New Edit Delete Duplicate

Entity	Module roles	Create	Delete	Member access
Course	Administrator	Yes	Yes	Full Read, Full Write
Course	Teacher	No	No	Full Read, No Write
Course	Trainee	No	No	Limited Read, No Write
Location	Administrator	Yes	Yes	Full Read, Full Write
Location	Teacher	No	No	Full Read, No Write
Location	Trainee	No	No	Limited Read, No Write
Registration	Teacher	No	No	Full Read, No Write
Registration	Administrator	Yes	Yes	Full Read, Full Write
Teacher	Administrator	Yes	Yes	Full Read, Full Write
Teacher	Trainee	No	No	Limited Read, No Write
Teacher	Teacher	No	No	Full Read, No Write
Trainee	Teacher	No	No	Full Read, No Write
Trainee	Administrator	Yes	Yes	Full Read, Full Write
TrainingEvent	Teacher	No	No	Full Read, No Write
TrainingEvent	Trainee	No	No	Limited Read, No Write
TrainingEvent	Administrator	Yes	Yes	Full Read, Full Write

应用安全性设置

- Administrator 标签页
- Demo Users 标签页
- Anonymous Users 标签页
- Password Policy 标签页

App Security

Security level

Security level

☐ Off

☐ Prototype / demo

☒ Production

Full security is applied. Configure administrator and anonymous access and define user roles and security for forms, microflows, entities, and reports.

Check security

☒ Yes

☐ No

If there are no other errors, Mendix Studio Pro checks per user role whether forms that are accessible for a certain role only refer to attributes and associations that are accessible for that same role. This assumes that each user role is independent and that users do not need two or more roles to access functionality in your application.

App status

Complete

Module status


User roles

Administrator


Demo users

Anonymous users

Password policy

 Edit module security

Module	Page access	Microflow access	Nanoflow access	OData access	REST access	Workflow access	Entity access	Data set access
--------	-------------	------------------	-----------------	--------------	-------------	-----------------	---------------	-----------------



OK

Cancel

Summary

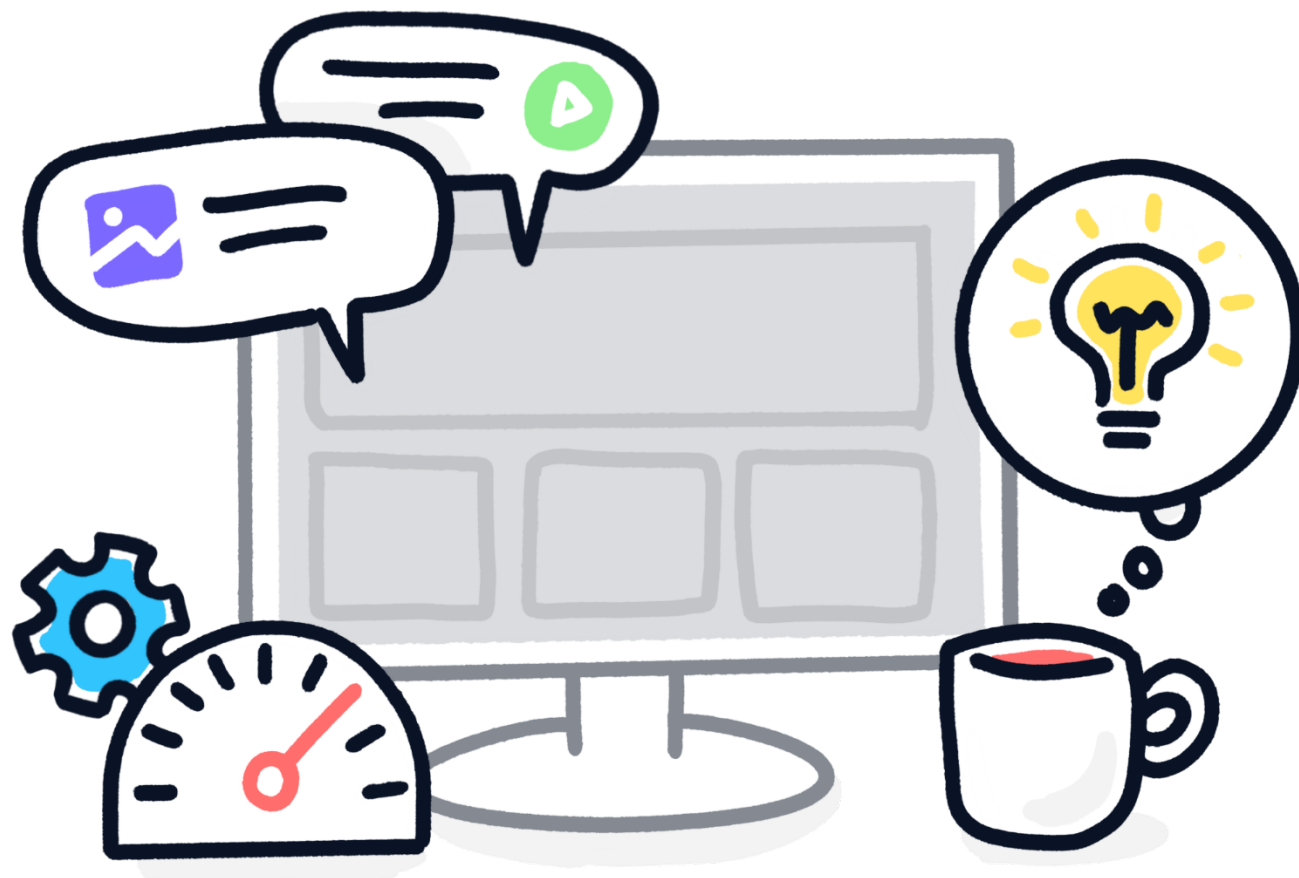
Knowledge checks

Go to kahoot.it

Make it Mobile

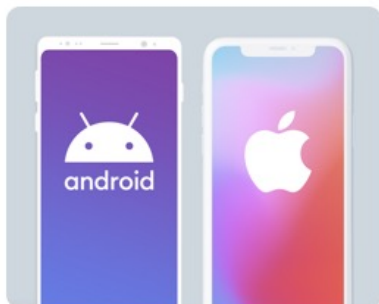
学习目标

- 了解移动应用程序的价值
- 创建特定于移动设备的页面
- 学习使用纳流
- 设置基于角色的主页



响应式, 原生, 与渐进式 (PWA) 移动应用

AppStore-based



Native Mobile

Optimal user experience,
best device integrations &
security options



Hybrid

Leverage large
libraries of existing
web capabilities

Browser-based



PWA

Native like, user
adoption without
AppStore dependencies



Responsive Web

Web apps (not
optimized for mobile)

为什么使用 PWA?

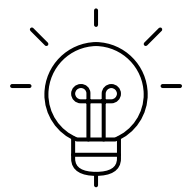
- 可安装
- 可靠
- 功能强大

移动应用

您需要面向移动设备的解决方案吗？

移动应用专有功能：

- 导航Profile
- 移动页面布局
- （原生）移动组件

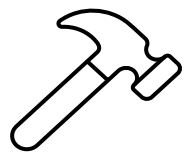


User Story 12

作为一名学员，我想查看即将举行的培训活动，
包括他们的地理位置，以便我可以选择最接近
的。

方法


- 导航:
 - 新建 PWA 导航 profile.
 - 指定默认首页.
 - 为 Trainee 配置基于角色的首页，展示培训事件列表（包括地点）
- 布局: Jimmy 希望为移动设备优化应用.
- 原生功能: Jimmy 希望应用能使用手机上的地图.



添加Responsive Web navigation profile

- 在 App Explorer 中打开导航
- 选中 Progressive Web App 下的三个框。
- 将应用程序标题更改为 LearnNow。

Responsive web Phone web offline



General

Application title: Edit...

Application icon: Select... Show

Home pages

Default home page: Select... Show

Role-based home pages: Edit...

Progressive Web App

☒ Publish as a Progressive Web App

☒ Allow 'Add to Home screen' prompt

☒ Preload static resources

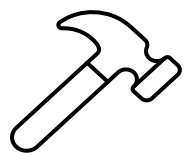
To use all Progressive Web App features, the app needs to be published to the cloud.

[Read more about Progressive Web Apps](#)

Menu

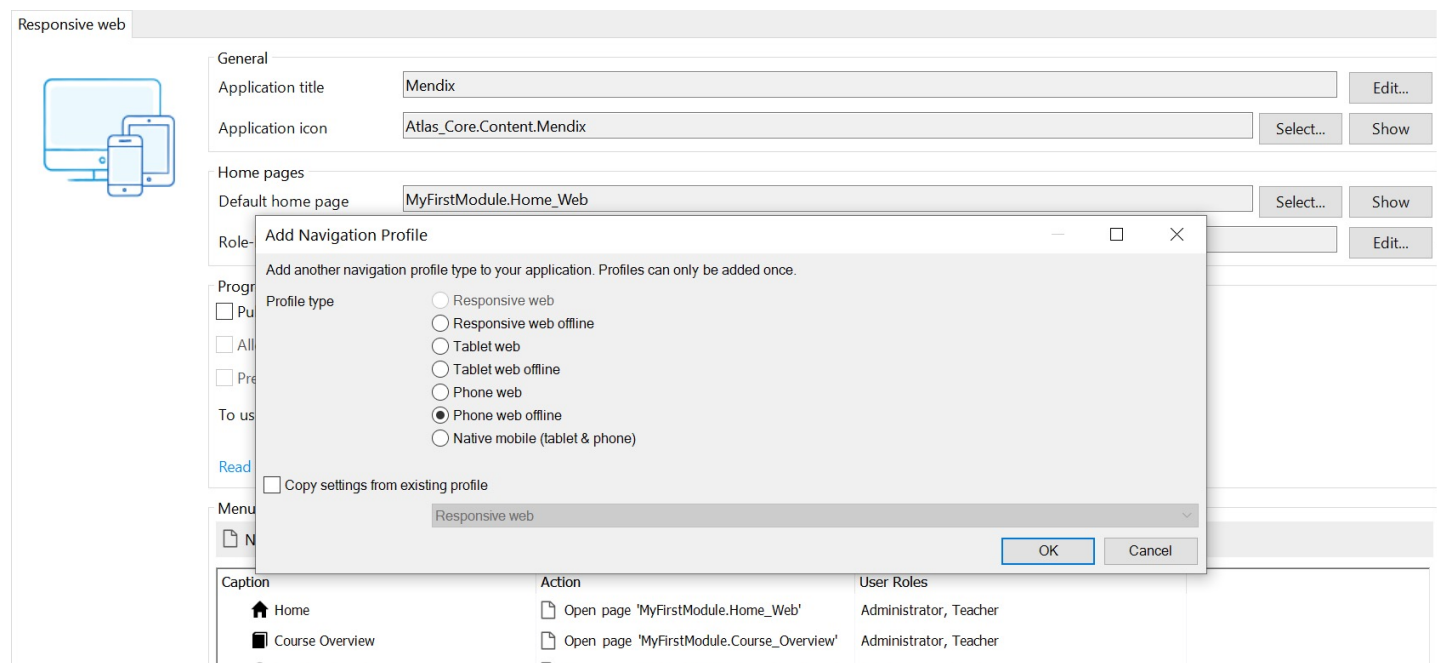
New item New subitem Edit Delete Go to target Expand all Collapse all Role-based view

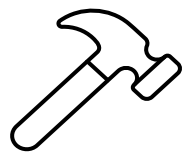
Caption	Action	User Roles
Home	Open page 'MyFirstModule.Home_Web'	Administrator, Teacher
Course Overview	Open page 'MyFirstModule.Course_Overview'	Administrator, Teacher



添加 Phone Web Offline navigation profile

- 添加导航配置文件：Phone web offline
- 选中允许“添加到主屏幕”提示框
- 将默认主页设置为新页面
TrainingEvent_Overview_Mobile
 1. 布局选项：Phone (Web)
 2. 模板：List Double Line.
 3. 导航布局：Phone_Topbar。





完善 Responsive Web navigation profile

- 为学员设置基于角色的首页以打开 TrainingEvent_Overview_Mobile 页面。

The screenshot displays the Mendix Profiles configuration interface. The 'Responsive web' tab is selected, showing various settings for the application. A modal window titled 'Role-based home pages for responsive' is open, showing a table with user roles and their corresponding target pages.

Profiles
Navigation profiles can be used to create a different navigation for different devices and screens.

Add navigation profile

Responsive web Phone web offline

General

Application title: LearnNow

Application icon: Atlas_Core.Content.Mendix

Home pages

Default home page: MyFirstModule.Home_Web

Role-based home pages: Trainee

Progressive Web App

☒ Publish as a Progressive Web App

☒ Allow 'Add to Home screen' prompt

☒ Preload static resources

To use all Progressive Web App features, you must publish your application as a Progressive Web App.

[Read more about Progressive Web App](#)

Menu

Caption

Home

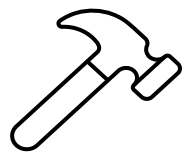
Courses

Role-based home pages for responsive

User role	Target
Trainee	MyFirstModule.TrainingEvent_Overview_Mobile

OK Cancel

Open page 'MyFirstModule.Course_Overview' Administrator, Teacher



配置移动页面



















- 页面名称: TrainingEvents_Overview_Mobile
- 使用 Properties 窗格将页面标题设置为 Training Events
- 将列表视图连接到 TrainingEvent 实体
- 是否要自动填充列表视图的内容? – 选择是
- 添加具有两列的布局网格小部件来构建页面
- 将文本小部件移动到左列
- 在文本小部件之间添加容器组件
- 删除列表视图中的搜索约束

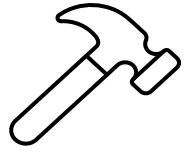
The screenshot shows the Mendix mobile page configuration interface for a page titled "[TrainingEvent, from database]". The interface includes a header bar with the title, a "Sort order: (default)" dropdown, and a "Search on: [TotalNumberOfRegistrations]" dropdown. Below the header, there is a two-column layout grid. The left column is labeled "Auto-fill" and contains several text input fields with placeholder text: "{.../Title}", "{StartDate}", "{EndDate}", "{.../Name}", and "{.../Name}". The right column is also labeled "Auto-fill" and is currently empty. At the bottom of the page, there is a "Load more..." button.

什么是纳流(Nanoflow)?

- 允许表达您的应用程序的逻辑
- 移动端优势：
 - 直接在浏览器/设备上运行（速度优势）
 - 可以在离线应用程序中使用

Nanoflow Commons 模块

- [-] ○  NanoflowCommons
 -  Domain Model
 -  Security
 - [-] ○  ClientActivities
 - [-] ○  ExternalActivities
 -  CallPhoneNumber
 -  DraftEmail
 -  NavigateTo
 -  OpenMap
 -  OpenURL
 -  SendTextMessage
 -  Share
 - [-] ○  Geolocation
 - [-] ○  LocalStorage
 - [-] ○  OtherActivities
 -  Icons
 -  Nanoflow_Commons_Version
 - [-] ○  WebActions



添加地点图标与展示地点的纳流

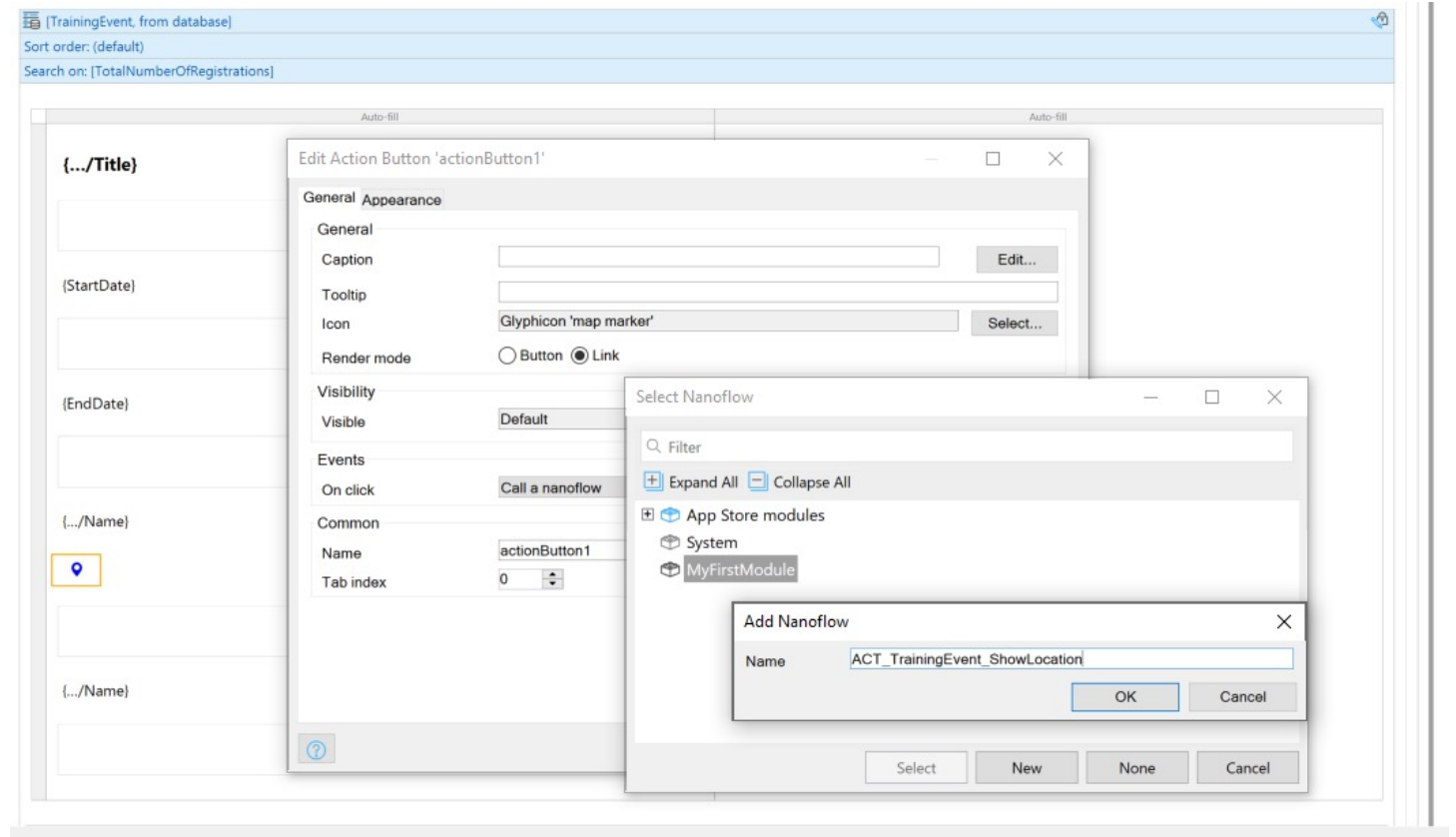
- 添加按钮:

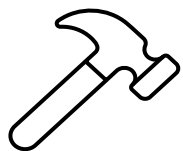
标题: empty

图标: Map

- 连接到纳流

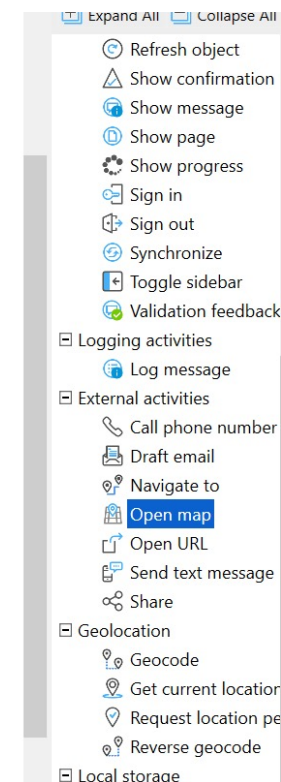
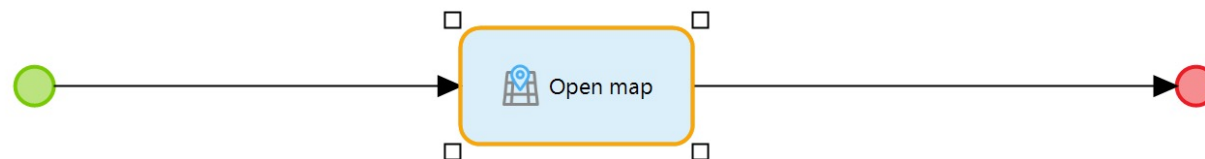
ACT_TrainingEvent_ShowLocation

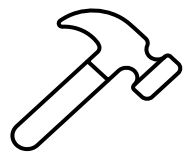




配置 ACT_TrainingEvent_ShowLocation 纳流

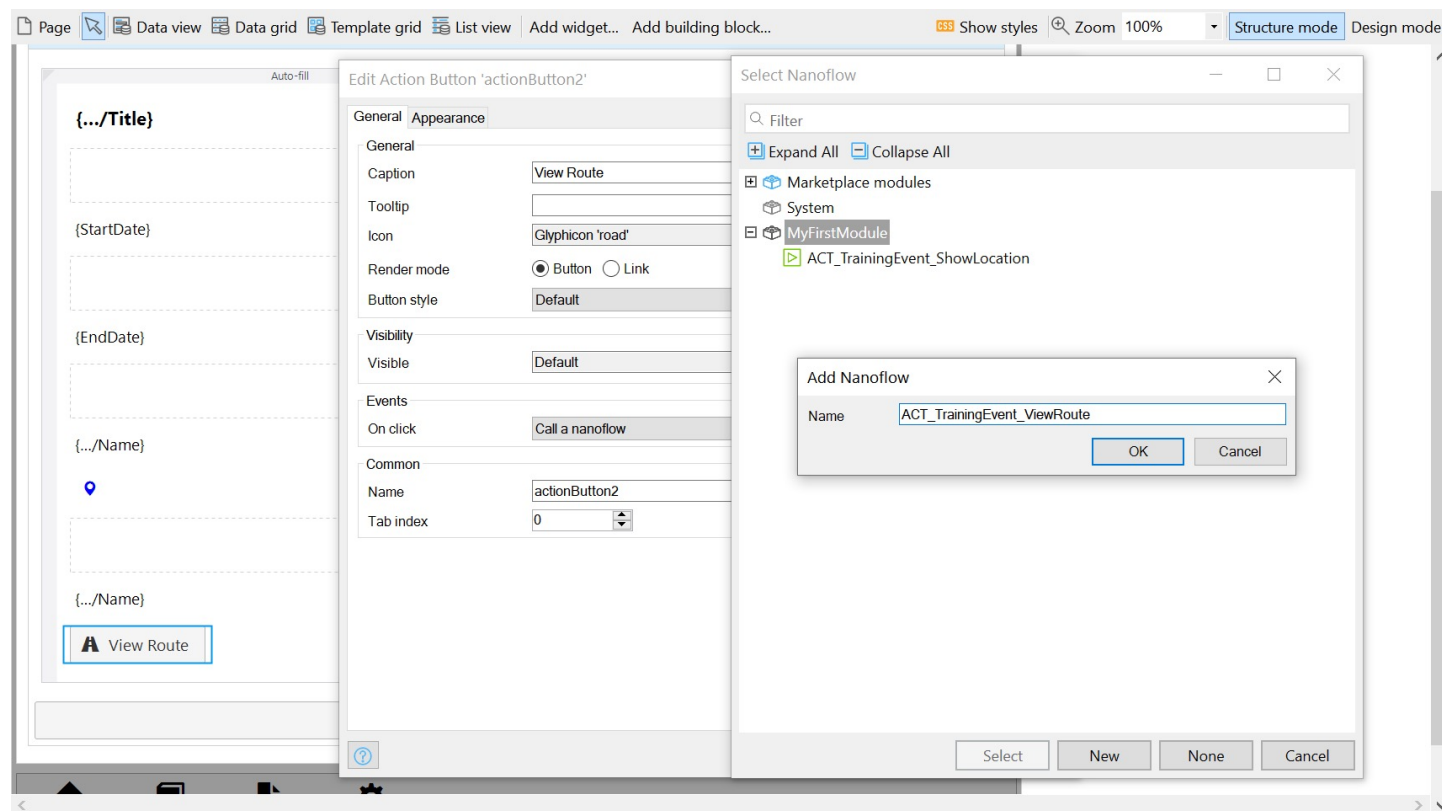
- 将 Location 设置为
`$TrainingEvent/MyFirstModule.TrainingEvent_Location/MyFirstModule.Location/Address`

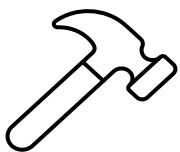




添加显示路线按钮并绑定纳流

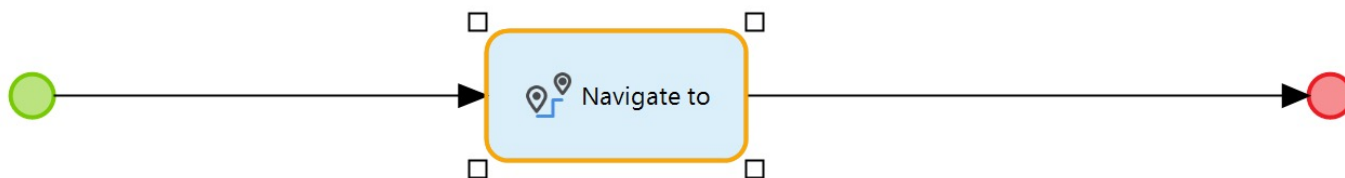
- 添加按钮:
 - Caption: Show Route
 - Icon: Road
 - Style: Primary
- 连接到纳流
 - ACT_TrainingEvent_ViewRoute



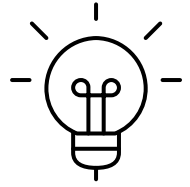


配置 ACT_TrainingEvent_ShowRoute 纳流

- 设置 Location 参数为：
`$TrainingEvent/MyFirstModule.TrainingEvent_Location/MyFirstModule.Location/Address`



- Show message
- Show page
- Show progress
- Sign in
- Sign out
- Synchronize
- Toggle sidebar
- Validation feedback
- Logging activities
 - Log message
- External activities
 - Call phone number
 - Draft email
 - Navigate to**
 - Open map
 - Open URL
 - Send text message
 - Share
- Geolocation
 - Geocode
 - Get current location
 - Request location permissions
 - Reverse geocode
- Local storage
 - Check storage item

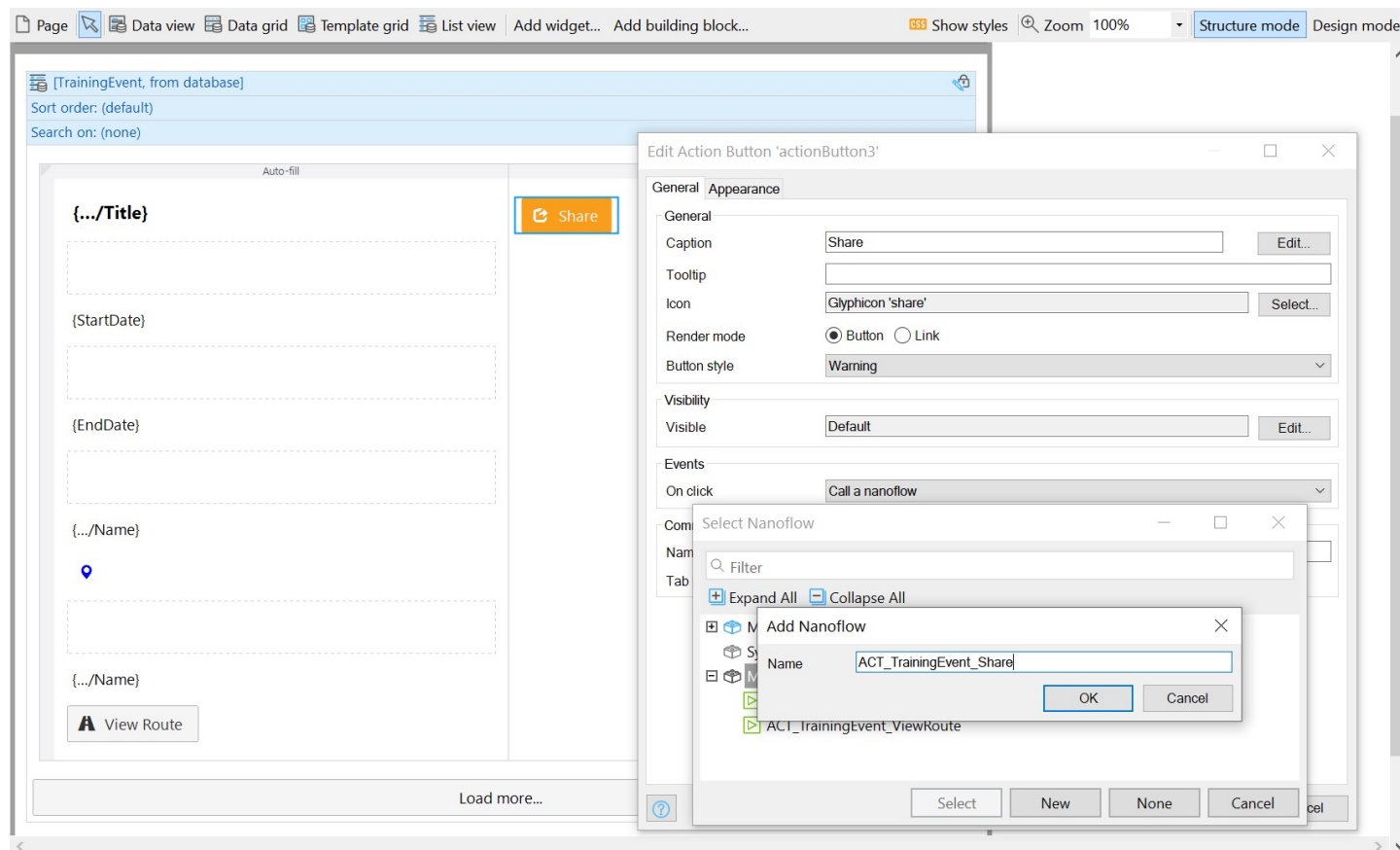


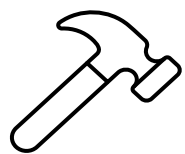
User Story 13

作为管理员，我希望学员能够分享有关培训活动的信息，以推广 LearnNow 应用程序的产品。

添加分享按钮并绑定纳流

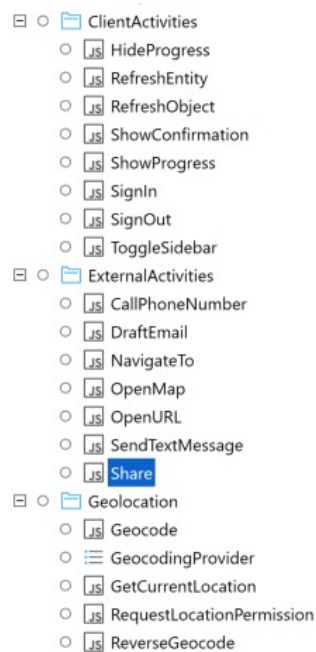
- 添加按钮:
 - Caption: Share
 - Icon: Share
- 连接到纳流:
ACT_TrainingEvent_Share

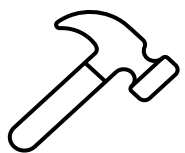




配置 ACT_TrainingEvent_Share 纳流

- 设置 Url 为 '<https://academy.mendix.com/link/path/31/Become-a-Rapid-Developer/>'
- 设置 Text 为 'Check out the offerings from the Mx Academy!'
- 设置 Title 为 'Mendix Academy'

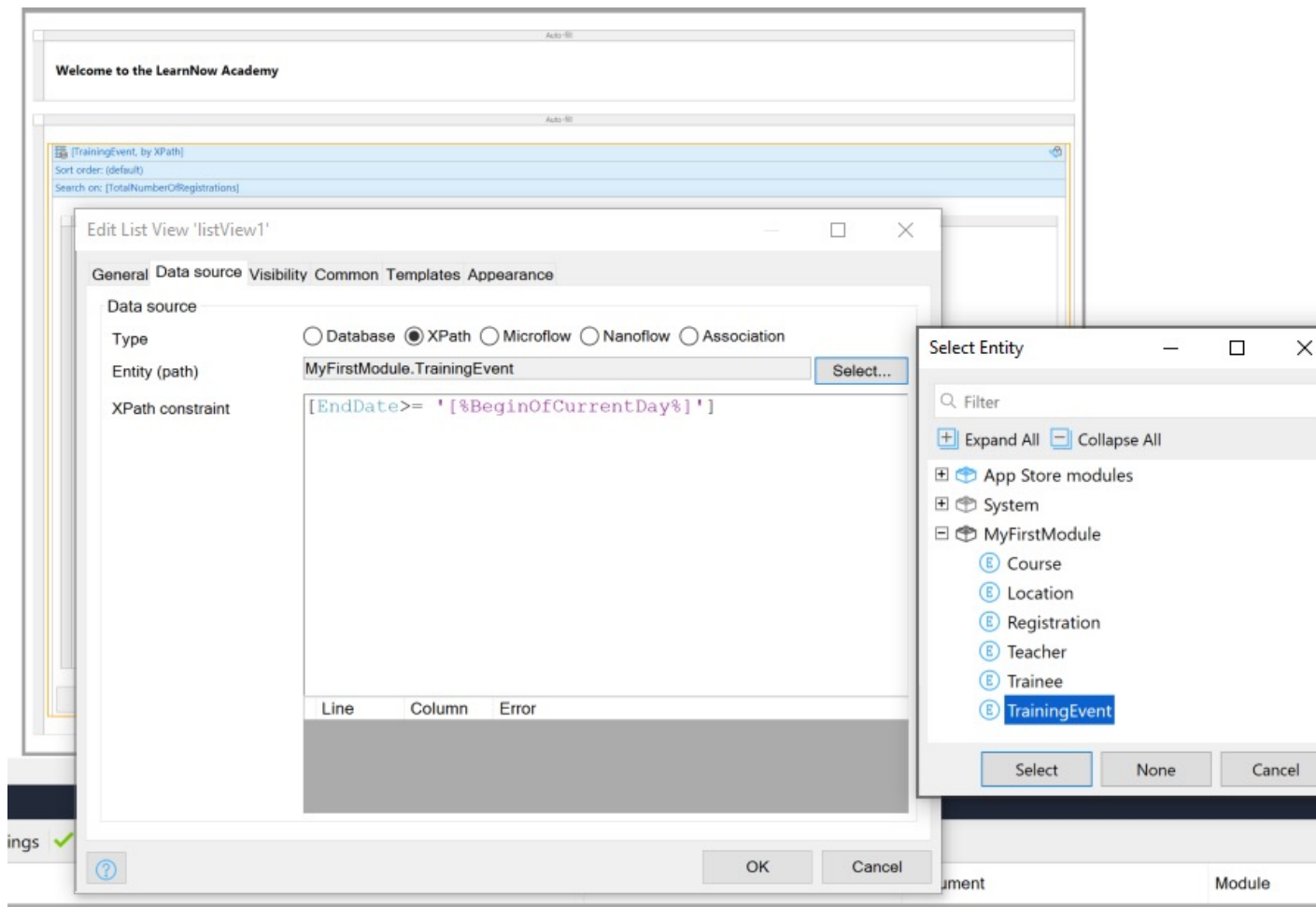


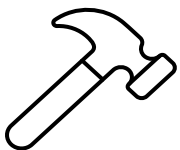


仅显示未来培训事件

- 打开 TrainingEvent_Overview_Mobile 页面
- 将 List view 的数据源类型设置为 Xpath
- 添加 Xpath 约束

[EndDate >= '[%BeginOfCurrentDay%]']





更新模块安全设定： 页面访问权限

Security of Module 'MyFirstModule'

Module roles Page access Microflow access Nanoflow access Workflow access Entity access

Note: Changes you make here modify the corresponding pages.

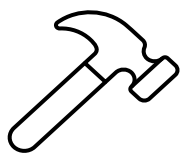
Open page

Page	Administrator	Teacher	Trainee	Type
Course_NewEdit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Page
Course_Overview	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Page
Home_Web	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Page
Location_NewEdit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Page
Location_Overview	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Page
Registration_NewEdit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Page
Teacher_NewEdit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Page
Teacher_Overview	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Page
Trainee_NewEdit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Page
Trainee_Overview	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Page
TrainingEvent_NewEdit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Page
TrainingEvent_Overview	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Page
TrainingEvent_Registration_Overview	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Page
TrainingEvent_Overview_Mobile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Page

Show usage

Document Object

OK Cancel



更新模块安全设定：纳流访问权限

Security of Module 'MyFirstModule'

Module roles Page access Microflow access Nanoflow access Workflow access Entity access

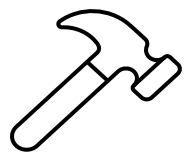
Note: Changes you make here modify the corresponding nanoflows.

Open nanoflow

Nanoflow	Administrator	Teacher	Trainee
ACT_TrainingEvent_Share	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ACT_TrainingEvent_ShowLocation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ACT_TrainingEvent_ViewRoute	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Show usage

Document	Object
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发布到云端

- 运行和发布
- 在响应式浏览器中预览
- 使用 demo_administrator 数据登录，创建用户和基本数据
- 复制应用链接并在手机上打开，以 demo_trainee 身份登录

Knowledge checks

Go to kahoot.it

Summary

Go make it!

认证考试



Certifications

The Mendix Developer Certification Program will help to boost your career by validating your knowledge, skill level, and contributions to the Mendix community. A certification obtained at the Rapid Developer, Advanced Developer, and Expert Developer levels contributes to your ranking and visibility, and it will be directly visible to the Mendix community.



Rapid Developer

This certification shows you understand the fundamentals of the Mendix Platform and how, when, and where to use them.

[View Details](#)

Intermediate Developer

This certification shows you are able to apply knowledge into practical scenarios and be a great addition to Mendix projects.

[View Details](#)

Advanced Developer

This certification exam is a practical assignment that will test your Mendix Platform skills and knowledge.

[View Details](#)


Expert Developer

Certified Expert Developers have proven capabilities in taking the lead when delivering Mendix applications to their customers.

[View Details](#)

<https://academyportalcloud.mendixcloud.com/index.html>

希望持续精进？



Learning Paths

When you want to pioneer a way forward, it's good to start with a path. These Learning Paths guide you through modules that build your skills.

[Find Your Learning Path](#)

Your Role

Architect
Operations
Scrum Master

Developer
Product Owner
UX Designer

Your Level

Basics
Rapid
Advanced

Tags

Administration
Data
Errors
Microflows
Security
Web Modeler

Collaboration
Desktop Modeler
Integration
Pages
Translation

Commits
Domain Model
Logging
SAP
User Experience

下一步的学习



Rapid Developer Course

Rapid | 3 Days

Learn the fundamentals of the Mendix platform and how, when, and where to use them.

[View Classroom](#)

反馈



问题？