



One Rule Engine to Rule them all?

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.NET & C#



.NET

2022 marks the 20th Anniversary of .NET and of C#

2002 first saw the launch of both .NET and of C#

.NET 6 is the latest version of the .NET runtime

C# 10 is the latest version of the C# language

.NET is the platform for building anything

One Rule Engine to Rule them all?



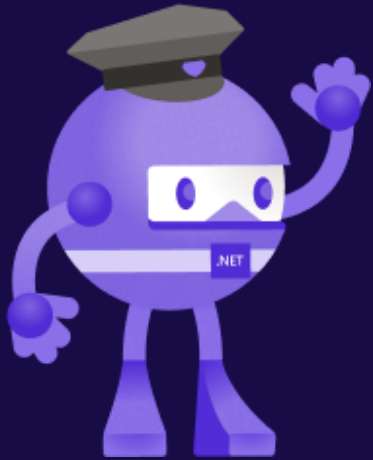


What are Rule Engines?

One Rule Engine to Rule them all?



Overview



Define a set of actions based on specific conditions

Conditions should be configurable at runtime

Prevent coupling code to use cases

Requirements can or will change

Consolidate business logic

Components



Rule Engines will check input against one or more Rules

Rules are a policy with Triggers, Conditions and Effects

Triggers determine if a rule should be performed

Conditions perform checks that pass or fail

Effects are outcomes when conditions met



Rule Engines in .NET

One Rule Engine to Rule them all?



ELSA



Open-source .NET Standard Workflows library

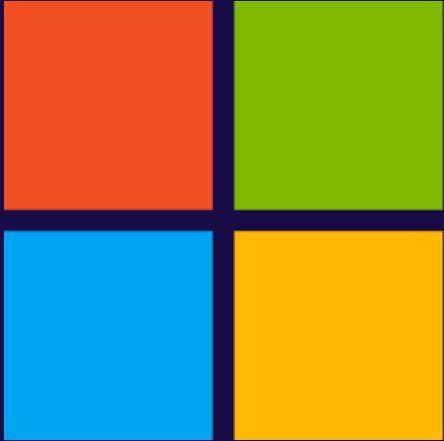
Build Workflows in code, JSON or the designer

Execute Workflows within your applications

Extend Activities with custom ones

github.com/elsa-workflows

Microsoft Rules Engine



Open-source extensible .NET Standard Rule Engine library

JSON based rules using extensive dynamic expressions

Supports multiple and dynamic object input

Extend expressions via custom injection

github.com/Microsoft/RuleEngine

Custom Rule Engine



Easy-to-use .NET Standard based Rule Engine for tombola

Support for multiple C# based Rules and Conditions

Rules for Break or Evaluate All on Pass or Fail

Overview of Condition or Rule Results

Used in tombola international

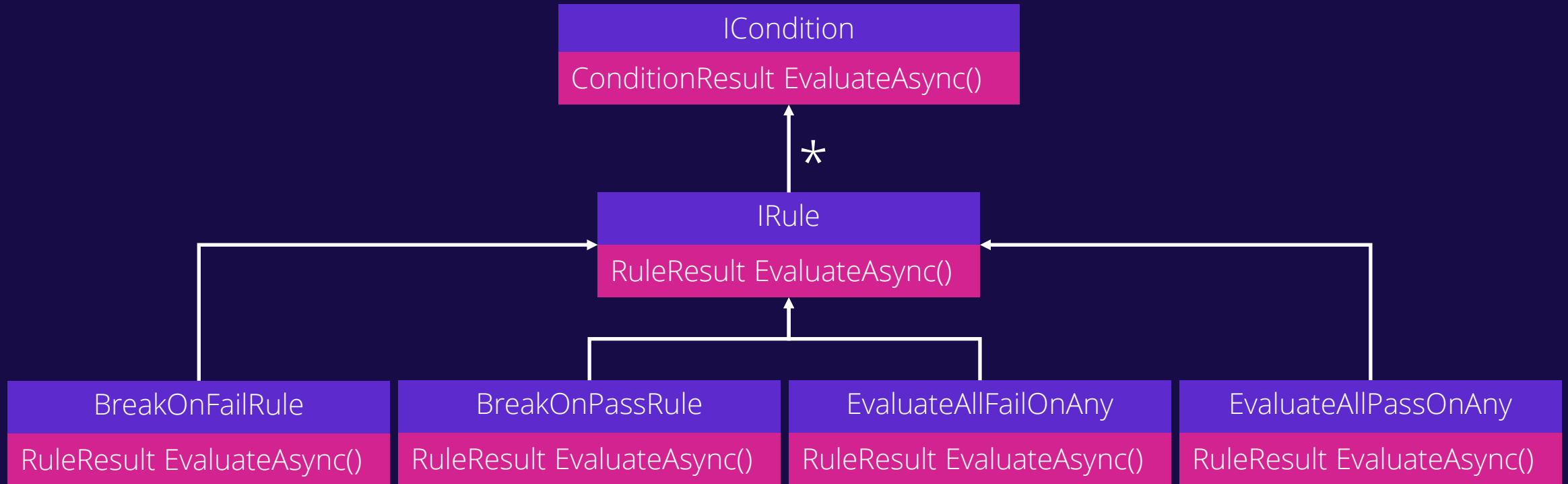


Custom Rule Engine

One Rule Engine to Rule them all?



Rules & Conditions



Results

ConditionResult

ICondition Condition

bool Pass

RuleResult

IEnumerable<Condition Result> ConditionResults

bool Pass

Factories

EligibleForPromotionFactory.Create(UserModel)

MinimumDaysCondition : ICondition

IsIdentityVerifiedCondition : ICondition

EligibleForBonusFactory.Create(UserModel)

EligibleForPromotionFactory [Dependency]

MinimumAgeCondition : ICondition



Demo

One Rule Engine to Rule them all?



Summary



Rule Engines define a set of conditional actions as Rules

Evaluate any Rules using one or more Conditions

Perform outcomes when Conditions are met

Choose from existing implementations

Build your own Rule Engine

One Rule Engine to Rule them all?

Any Questions?

How to Design Software - Rules Engines
link.medium.com/lryjavuhznb

dot.net
github.com/elsa-workflows
github.com/Microsoft/RuleEngine

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