OntOlogy Pitfall Scanner!

OOPS! (OntOlogy Pitfall Scanner!) helps you to detect some of the most common pitfalls appearing when developing ontologies.

To try it, enter a URI or paste an OWL document into the text field above. A list of pitfalls and the elements of your ontology where they appear will be displayed.

Scanner by URI: [   ] [Scanner by URI]

Example: http://oops.linkeddata.es/example/swc_2009-05-09.rdf

Scanner by direct input:
```
<!-- http://www.demcare.eu/ontologies/home.owl#involvementInDiscussion -->

<owl:ObjectProperty rdf:about="&home;involvementInDiscussion"/>


<!-- http://www.demcare.eu/ontologies/home.owl#physicalHygiene -->

<owl:ObjectProperty rdf:about="&home;physicalHygiene"/>
```
[Scanner by RDF]

☐ Uncheck this checkbox if you don't want us to keep a copy of your ontology.

Go to advanced evaluation

Evaluation results

It is obvious that not all the pitfalls are equally important; their impact in the ontology will depend on multiple factors. For this reason, each pitfall has an importance level attached indicating how important it is. We have identified three levels:

- **Critical** 🔴 **:** It is crucial to correct the pitfall. Otherwise, it could affect the ontology consistency, reasoning, applicability, etc.
- **Important** 🟠 **:** Though not critical for ontology function, it is important to correct this type of pitfall.
- **Minor** 🟡 **:** It is not really a problem, but by correcting it we will make the ontology nicer.

[Expand All] | [Collapse All]

Results for P04: Creating unconnected ontology elements.	**1 case | Minor** 🟡

Ontology elements (classes, object properties and datatype properties) are created isolated, with no relation to the rest of the ontology.

• This pitfall appears in the following elements:

> http://www.demcare.eu/ontologies/home.owl#Questionnaire

Results for P08: Missing annotations.	**82 cases | Minor** 🟡

Want to help?

- Suggest new pitfalls
- Provide feedback

Documentation:

- Pitfall catalogue
- User guide
- Technical report

Related papers:

- IJSWIS 2014
- EKAW 2012
- ESWC 2012 Demo

This pitfall consists in creating an ontology element and failing to provide human readable annotations attached to it. Consequently, ontology elements lack annotation properties that label them (e.g. rdfs:label, lemon:LexicalEntry, skos:prefLabel or skos:altLabel) or that define them (e.g. rdfs:comment or dc:description). This pitfall is related to the guidelines provided in [5].

• The following elements have no rdfs:label defined:
› http://www.demcare.eu/ontologies/home.owl#PeriodicLimbMovement
› http://www.demcare.eu/ontologies/home.owl#InsufficientFaceToFaceInteraction
› http://www.demcare.eu/ontologies/home.owl#InsufficientTelephoneInteraction
› http://www.demcare.eu/ontologies/home.owl#MoodProblem
› http://www.demcare.eu/ontologies/home.owl#ExerciseProblem
› http://www.demcare.eu/ontologies/home.owl#Problem
› http://www.demcare.eu/ontologies/home.owl#ExcessiveNapProblem
› http://www.demcare.eu/ontologies/home.owl#MoodQuestionnaire
› http://www.demcare.eu/ontologies/event.owl#NightKitchenVisit
› http://www.demcare.eu/ontologies/home.owl#SocialProblem
› http://www.demcare.eu/ontologies/home.owl#SleepQuestionnaire
› http://www.demcare.eu/ontologies/event.owl#Event
› http://www.demcare.eu/ontologies/home.owl#ShortStrideLength
› http://www.demcare.eu/ontologies/home.owl#DaySummary
› http://www.demcare.eu/ontologies/home.owl#SleepProblem
› http://www.demcare.eu/ontologies/event.owl#NapAfterLunch
› http://www.demcare.eu/ontologies/home.owl#SleepEfficiencyProblem
› http://www.demcare.eu/ontologies/home.owl#HighStressLevel
› http://www.demcare.eu/ontologies/event.owl#Place
› http://www.demcare.eu/ontologies/home.owl#MoodSummary
› http://www.demcare.eu/ontologies/home.owl#SleepSummary
› http://www.demcare.eu/ontologies/home.owl#InappropriateMealLocation
› http://www.demcare.eu/ontologies/home.owl#InterruptedSleepProblem
› http://www.demcare.eu/ontologies/home.owl#ExerciseSummary
› http://www.demcare.eu/ontologies/home.owl#InappropriateMealDuration
› http://www.demcare.eu/ontologies/home.owl#FragmentedSleepProblem
› http://www.demcare.eu/ontologies/home.owl#EatingSummary
› http://www.demcare.eu/ontologies/home.owl#ADLProblem
› http://www.demcare.eu/ontologies/event.owl#Patient
› http://www.demcare.eu/ontologies/home.owl#SleepDurationProblem
› http://www.demcare.eu/ontologies/home.owl#NappingProblem
› http://www.demcare.eu/ontologies/home.owl#SleepLatencyProblem
› http://www.demcare.eu/ontologies/home.owl#Nocturia
› http://www.demcare.eu/ontologies/home.owl#SlowWalkSpeed
› http://www.demcare.eu/ontologies/event.owl#NightLivingRoomVisit
› http://www.demcare.eu/ontologies/event.owl#LongNap

- Ontoqual 2010
- CAEPIA 2009

Web services:

- REST Web Service

Developed by:

Follow @OOPSoeg

> http://www.demcare.eu/ontologies/home.owl#InterruptedMeal
> http://www.demcare.eu/ontologies/home.owl#FailureToPrepareMeal
> http://www.demcare.eu/ontologies/home.owl#MissedMeal
> http://www.demcare.eu/ontologies/home.owl#ADLSummary
> http://www.demcare.eu/ontologies/home.owl#InsufficientAccelerometerCounts
> http://www.demcare.eu/ontologies/home.owl#Questionnaire
> http://www.demcare.eu/ontologies/home.owl#SocialSummary
> http://www.demcare.eu/ontologies/home.owl#SelfReportedLowMood
> http://www.demcare.eu/ontologies/home.owl#MealProblem
> http://www.demcare.eu/ontologies/home.owl#involvementInDiscussion
> http://www.demcare.eu/ontologies/home.owl#physicalHygiene
> http://www.demcare.eu/ontologies/home.owl#exerciseDuration
> http://www.demcare.eu/ontologies/home.owl#exerciseStartTime
> http://www.demcare.eu/ontologies/home.owl#eatingLocation
> http://www.demcare.eu/ontologies/home.owl#eatingDuration
> http://www.demcare.eu/ontologies/home.owl#forPatient
> http://www.demcare.eu/ontologies/home.owl#possibleContributingFactor
> http://www.demcare.eu/ontologies/home.owl#numberOfBedExits
> http://www.demcare.eu/ontologies/home.owl#numberOfPhoneConversations
> http://www.demcare.eu/ontologies/home.owl#distanceTravelled
> http://www.demcare.eu/ontologies/home.owl#sleepBedTime
> http://www.demcare.eu/ontologies/home.owl#duration
> http://www.demcare.eu/ontologies/home.owl#sleepLatency
> http://www.demcare.eu/ontologies/home.owl#walkSpeed
> http://www.demcare.eu/ontologies/home.owl#lightLevel
> http://www.demcare.eu/ontologies/home.owl#totalDurationOfNaps
> http://www.demcare.eu/ontologies/home.owl#strideLength
> http://www.demcare.eu/ontologies/home.owl#numberOfAwakenings
> http://www.demcare.eu/ontologies/home.owl#accelerometerCountsPerMinute
> http://www.demcare.eu/ontologies/home.owl#sleepTime
> http://www.demcare.eu/ontologies/home.owl#numberOfFaceToFaceConversations
> http://www.demcare.eu/ontologies/home.owl#heartRate
> http://www.demcare.eu/ontologies/home.owl#date
> http://www.demcare.eu/ontologies/home.owl#numberOfSocialInteractions
> http://www.demcare.eu/ontologies/home.owl#highlight
> http://www.demcare.eu/ontologies/home.owl#sleepMovementIndex
> http://www.demcare.eu/ontologies/home.owl#numberOfNaps
> http://www.demcare.eu/ontologies/home.owl#exerciseIntensity
> http://www.demcare.eu/ontologies/home.owl#hasValue
> http://www.demcare.eu/ontologies/home.owl#wakeUpTime
> http://www.demcare.eu/ontologies/home.owl#startTime

> http://www.demcare.eu/ontologies/home.owl#numberOfArousals
> http://www.demcare.eu/ontologies/home.owl#endTime
> http://www.demcare.eu/ontologies/home.owl#numberOfCommunicativeAttempts
> http://www.demcare.eu/ontologies/home.owl#stressLevel
> http://www.demcare.eu/ontologies/home.owl#sleepEfficiency

Results for P11: Missing domain or range in properties.   **42 cases | Important** ⬤

Object and/or datatype properties without domain or range (or none of them) are included in the ontology.

• This pitfall appears in the following elements:
> http://www.w3.org/2006/time#hasDuration
> http://www.w3.org/2006/time#hasTime
> http://www.demcare.eu/ontologies/home.owl#possibleContributingFactor
> http://www.demcare.eu/ontologies/home.owl#forPatient
> http://www.demcare.eu/ontologies/home.owl#eatingDuration
> http://www.demcare.eu/ontologies/home.owl#eatingLocation
> http://www.demcare.eu/ontologies/home.owl#exerciseStartTime
> http://www.demcare.eu/ontologies/home.owl#exerciseDuration
> http://www.demcare.eu/ontologies/home.owl#physicalHygiene
> http://www.demcare.eu/ontologies/home.owl#involvementInDiscussion
> http://www.w3.org/2006/time#hasDurationDescription
> http://www.w3.org/2006/time#day
> http://www.w3.org/2006/time#year
> http://www.w3.org/2006/time#month
> http://www.demcare.eu/ontologies/home.owl#sleepEfficiency
> http://www.demcare.eu/ontologies/home.owl#stressLevel
> http://www.demcare.eu/ontologies/home.owl#numberOfCommunicativeAttempts
> http://www.demcare.eu/ontologies/home.owl#endTime
> http://www.demcare.eu/ontologies/home.owl#numberOfArousals
> http://www.demcare.eu/ontologies/home.owl#startTime
> http://www.demcare.eu/ontologies/home.owl#wakeUpTime
> http://www.demcare.eu/ontologies/home.owl#hasValue
> http://www.demcare.eu/ontologies/home.owl#exerciseIntensity
> http://www.demcare.eu/ontologies/home.owl#numberOfNaps
> http://www.demcare.eu/ontologies/home.owl#sleepMovementIndex
> http://www.demcare.eu/ontologies/home.owl#numberOfSocialInteractions
> http://www.demcare.eu/ontologies/home.owl#date
> http://www.demcare.eu/ontologies/home.owl#heartRate
> http://www.demcare.eu/ontologies/home.owl#numberOfFaceToFaceConversations
> http://www.demcare.eu/ontologies/home.owl#sleepTime

› http://www.demcare.eu/ontologies/home.owl#accelerometerCountsPerMinute
› http://www.demcare.eu/ontologies/home.owl#numberOfAwakenings
› http://www.demcare.eu/ontologies/home.owl#strideLength
› http://www.demcare.eu/ontologies/home.owl#totalDurationOfNaps
› http://www.demcare.eu/ontologies/home.owl#lightLevel
› http://www.demcare.eu/ontologies/home.owl#walkSpeed
› http://www.demcare.eu/ontologies/home.owl#sleepLatency
› http://www.demcare.eu/ontologies/home.owl#duration
› http://www.demcare.eu/ontologies/home.owl#sleepBedTime
› http://www.demcare.eu/ontologies/home.owl#distanceTravelled
› http://www.demcare.eu/ontologies/home.owl#numberOfPhoneConversations
› http://www.demcare.eu/ontologies/home.owl#numberOfBedExits

• **Tip:** Solving this pitfall may lead to new results for other pitfalls and suggestions. We encourage you to solve all cases when needed and see what else you can get from OOPS!

Results for P13: Inverse relationships not explicitly declared.   28 cases | Minor ⚪

This pitfall appears when any relationship (except for those that are defined as symmetric properties using owl:SymmetricProperty) does not have an inverse relationship (owl:inverseOf) defined within the ontology.

• OOPS! has the following suggestions for the relationships without inverse:
› http://www.w3.org/2006/time#intervalIn could be inverse of http://www.w3.org/2006/time#intervalDisjoint
› http://www.w3.org/2006/time#intervalDisjoint could be inverse of http://www.w3.org/2006/time#intervalEquals

• Sorry, OOPS! has no suggestions for the following relationships without inverse:
› http://www.w3.org/2006/time#hasDurationDescription
› http://www.demcare.eu/ontologies/home.owl#involvementInDiscussion
› http://www.demcare.eu/ontologies/home.owl#physicalHygiene
› http://www.demcare.eu/ontologies/home.owl#exerciseDuration
› http://www.w3.org/2006/time#hasBeginning
› http://www.demcare.eu/ontologies/home.owl#exerciseStartTime
› http://www.demcare.eu/ontologies/home.owl#eatingLocation
› http://www.demcare.eu/ontologies/home.owl#eatingDuration
› http://www.demcare.eu/ontologies/home.owl#forPatient
› http://www.demcare.eu/ontologies/home.owl#possibleContributingFactor
› http://www.w3.org/2006/time#timeZone
› http://www.w3.org/2006/time#inTemporalPosition
› http://www.w3.org/2006/time#dayOfWeek
› http://www.w3.org/2006/time#hasTime
› http://www.w3.org/2006/time#hasDuration

› http://www.w3.org/2006/time#hasTRS
› http://www.w3.org/2006/time#monthOfYear
› http://www.w3.org/2006/time#hasDateTimeDescription
› http://www.w3.org/2006/time#inDateTime
› http://www.w3.org/2006/time#inTimePosition
› http://www.w3.org/2006/time#hasEnd
› http://www.w3.org/2006/time#hasTemporalDuration
› http://www.w3.org/2006/time#unitType
› http://www.w3.org/2006/time#inside

Results for P24: Using recursive definitions.   **2 cases | Important** ⊙

An ontology element (a class, an object property or a datatype property) is used in its own definition. Some examples of this would be: (a) the definition of a class as the enumeration of several classes including itself; (b) the appearance of a class within its owl:equivalentClass or rdfs:subClassOf axioms; (c) the appearance of an object property in its rdfs:domain or range rdfs:range definitions; or (d) the appearance of a datatype property in its rdfs:domain definition.

• This pitfall appears in the following elements:
› http://www.w3.org/2006/time#Interval
› http://www.w3.org/2006/time#Instant

Results for P41: No license declared.   **ontology* | Important** ⊙

The ontology metadata omits information about the license that applies to the ontology.

*This pitfall applies to the ontology in general instead of specific elements.

SUGGESTION: symmetric or transitive object properties.   **16 cases**

According to the highest importance level of pitfall found in your ontology the conformace bagde suggested is "Important pitfalls" (see below). You can use the following HTML code to insert the badge within your ontology documentation:

```
<p>
<a href="http://oops.linkeddata.es"><img
      src="http://oops.linkeddata.es/resource/image/oops_important.png"
      alt="Important pitfalls were found" height="69.6" width="100" /></a>
</p>
```

References:

- [1] Aguado-De Cea, G., Montiel-Ponsoda, E., Poveda-Villalón, M., and Giraldo-Pasmin, O.X. (2015). Lexicalizing Ontologies: The issues behind the labels. In Multimodal communication in the 21st century: Professional and academic challenges. 33rd Conference of the

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}
```

Please, help us making OOPS! better. **Feedback** is more than welcome!

In addition, you can also **suggest new pitfalls** so that they can be detected in future evaluations.

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Contact email: oops(at)delicias.dia.fi.upm.es. Latest revision April 2021
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