



Disambiguation

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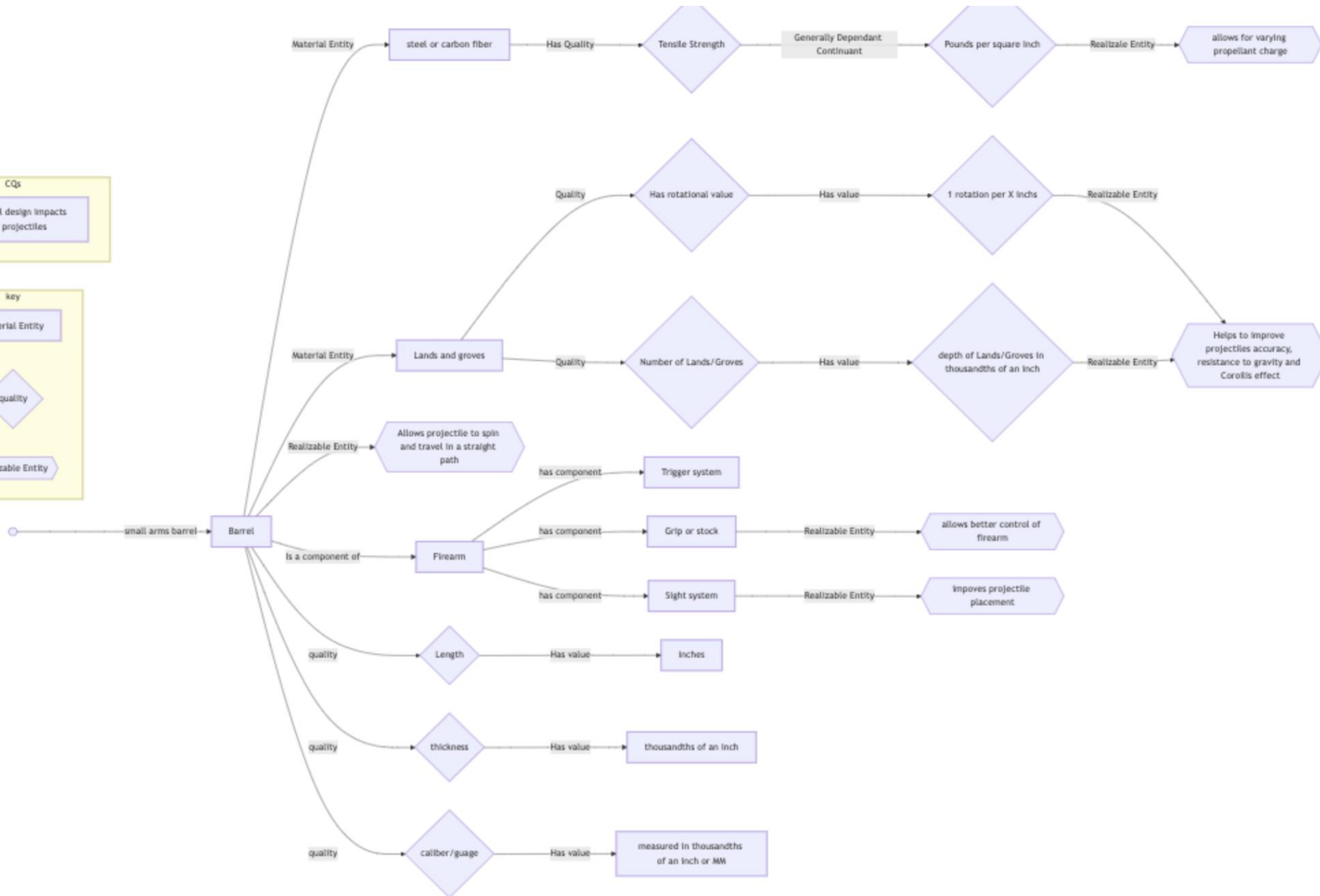
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Outline

- Design Pattern Review
- Recipe Refresher
- The Secret Structure of the World

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Competency Questions for the Ontology

General Information

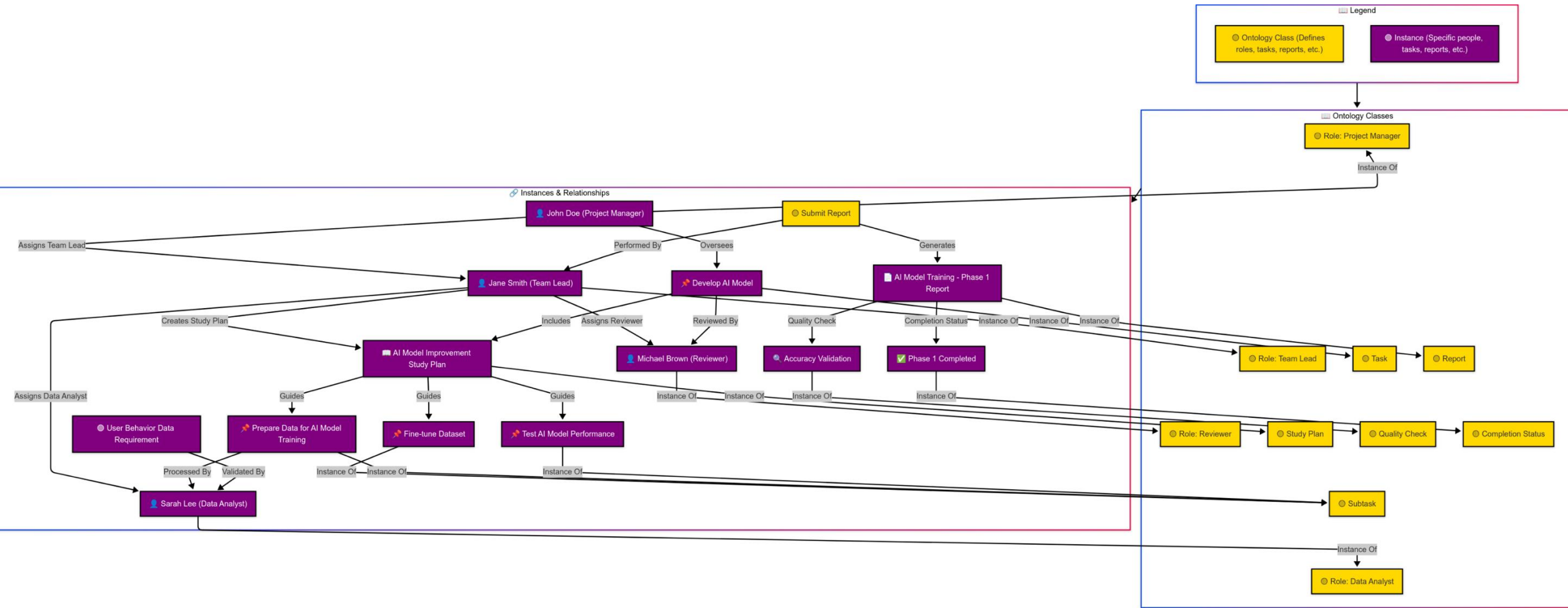
- What types of information are defined in the ontology?
- What roles are associated with a person in this ontology?

Task Management

- Who is responsible for creating a task (ActOfCreatingTask)?
- What are the steps involved in assigning a sub-task (ActOfAssigningSubTask)?
- What progress reports (ProgressReport) have been submitted under a given task?
- Who is allowed to submit a progress report (ActOfSubmitProgressReport)?
- What is the role of a person in a particular task assignment?

Role and Responsibility

- What occupational roles (OccupationalRole) are defined in the ontology?
- What tasks are assigned to a particular role?
- How is an occupational role related to a person in the ontology?

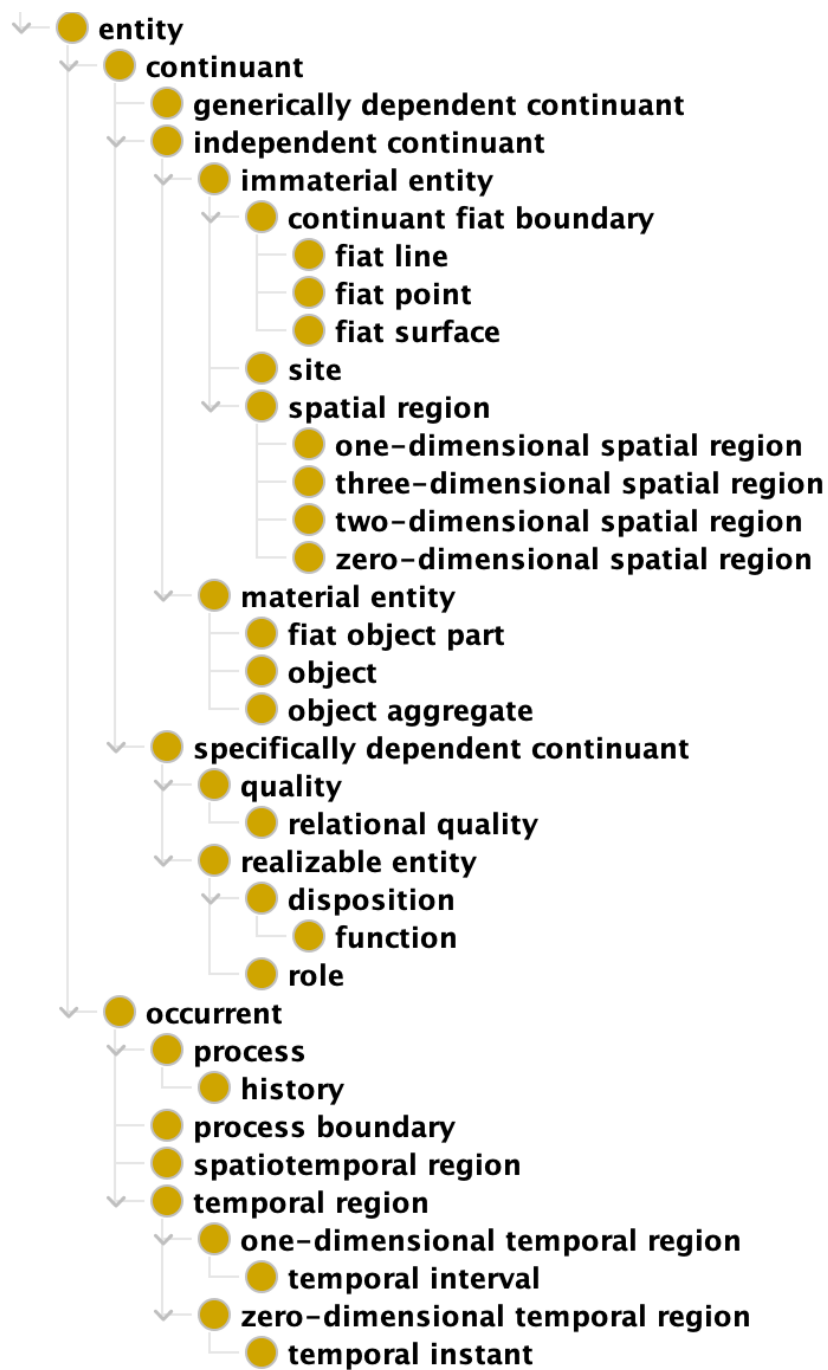


Relation	Definition	Is Reflexive	Is Symmetric	Is Transitive
Work with (NOTE: assumes an agent, person or machine that is the subject)	To use some material in the creation of one's work;			
	To utilize some tool, instrument, or other apparatus in the p	Person works with Oneself = True; Ex.: Work with Oneself to adopt a health habit	Counterexample: Person works with wood = True; Wood works with Person = False	Counterexample: PersonA works with PersonB; PersonB works with MaterialA; PersonA works with MaterialA = FALSE
	To cooperate with someone in order to perform some task,	Distinguishing this term and def. from "Works with" as in "work together with" as in Ex: Tool A works with (works well together with) tool B.		Counterexample: PersonA works with PersonB; PersonB works with PersonC; PersonA works with PersonC = FALSE
	(Source: https://idioms.thefreedictionary.com/work+with)	Since for this term we assume an agent must be the subject it would not make sense to say "Wood material works with wood material" for example, which would be False		
Work For	To work for someone (for any motivation: intrinsic or extrinsic);			TRUE?
	To work in order to accomplish something (for any motivation: intrinsic or extrinsic)	Person works for Oneself (in an act of self employment for example)	Counterexample: Let: PersonA works for EmployerA = True; then: EmployerA works for PersonA = False	PersonA works for OrganizationA = True; OrganizationA works for umbrella OrganizationB = True; then: PersonA works for umbrella OrganizationB = ? True (but indirectly?)
	(Sources: https://www.typesof.net/a/types-of-motivation-with-definitions ; https://idioms.thefreedictionary.com/work+for)	Person works for Oneself (for one's benefit to improve a skillset for example)		NOT SURE! If the mission statement is the object than YES, but if a formal payroll process is taken into account then FALSE; NOTE: the formal definition of "Work For" includes employment clause
Collaborate with (alt: work together with)	To work on a task with another person or group.			
	(Sources: https://idioms.thefreedictionary.com/collaborate+with , https://dictionary.cambridge.org/us/dictionary/english/collaborate)	Since most definitions exclude relation to oneself, assumes "Other" must be the object	If AgentA (or agent aggregateB) Collaborates with AgentB (or agent aggregateB) then reverse must be TRUE	Counterexample: Let: PersonA collaborates with PersonB = True; PersonB collaborates with PersonC (on a different matter) = True; then: PersonA collaborates with PersonC = False
Responsible For	be responsible for someone/something/doing something;	TRUE?		TRUE (unless roles change over time)
	to have control and authority over something or someone and the duty of taking care of it, him, or her	One is responsible for oneself is always True (regardless of context, though others may also share roles of responsibility over the same One)	Counterexample: ParentA is responsible for ChildB = True while ChildB is responsible for ParentA = False	OrganizationA is responsible for ParticipantManagerB = True; ParticipantManagerB is responsible for EmployeeC = True; OrganizationA is responsible for EmployeeC = True
	(Source: https://dictionary.cambridge.org/us/dictionary/english/responsible)	What about severe disability or inability to execute on the responsibility? Would this still hold on some intrinsic level even if not exerted externally?		Counterexample: ParentA is responsible for ChildB = True; WHEN ChildB has their ChildC, ChildB (now a parent) is responsible for ChildC = True; BUT ParentA is responsible for ChildC = False
				The key here is taking time frame and change of responsibility ROLES into account = these may change, but within the same time frame (stasis) this property should hold
LEGEND: the separate rows within the same term are only there to help read the text easier and not to align with the corresponding cells in the other columns for the same term				

Relation	Definition	Is Reflexive	Is Symmetric	Is Transitive
Work with (NOTE: assumes an agent, person or machine that is the subject)	To use some material in the creation of one's work;	TRUE	FALSE	FALSE
	To utilize some tool, instrument, or other apparatus in the performance of some labor or activity;	Person works with Oneself = True; Ex.: Work with Oneself to adopt a health habit	Counterexample: Person works with wood = True; Wood works with Person = False	Counterexample: PersonA works with PersonB; PersonB works with MaterialA; PersonA works with MaterialA = FALSE
	To cooperate with someone in order to perform some task, activity, responsibility, etc	Distinguishing this term and def. from "Works with" as in "work together with" as in Ex: Tool A works with (works well together with) tool B.		Counterexample: PersonA works with PersonB; PersonB works with PersonC; PersonA works with PersonC = FALSE
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	To work in order to accomplish something (for any motivation: intrinsic or extrinsic)	Person works for Oneself (in an act of self employment for example)	Counterexample: Let: PersonA works for EmployerA = True; then: EmployerA works for PersonA = False	PersonA works for OrganizationA = True; OrganizationA works for umbrella OrganizationB = True; then: PersonA works for umbrella OrganizationB = ? True (but indirectly?)
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Collaborate with (alt: work together with)	To work on a task with another person or group.	FALSE	TRUE	FALSE
	(Sources: https://idioms.thefreedictionary.com/collaborate+with , https://dictionary.cambridge.org/us/dictionary/english/collaborate-with-to)	Since most definitions exclude relation to oneself, assumes "Other" must be the object	If AgentA (or agent aggregateB) Collaborates with AgentB (or agent aggregateB) then reverse must be TRUE	Counterexample: Let: PersonA collaborates with PersonB = True; PersonB collaborates with PersonC (on a different matter) = True; then: PersonA collaborates with PersonC = False
Responsible For	be responsible for someone/something/doing something;	TRUE?	FALSE	TRUE (unless roles change over time)
	to have control and authority over something or someone and the duty of taking care of it, him, or her	One is responsible for oneself is always True (regardless of context, though others may also share roles of responsibility over the same One)	Counterexample: ParentA is responsible for ChildB = True while ChildB is responsible for ParentA = False	OrganizationA is responsible for ParticipantManagerB = True; ParticipantManagerB is responsible for EmployeeC = True; OrganizationA is responsible for EmployeeC = True
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Outline

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- The Secret Structure of the World



Disambiguation

- **Information** vs what that information **is about**, e.g. occupation code vs a holder of an occupation
- **Material** vs **immaterial** things, e.g. a given river vs the site where the river used to flow
- **Bearing properties** vs **bearers of properties**, e.g. apple's redness vs the apple
- **Processes** vs **product**, e.g. ontology engineering vs ontology produced

Rules of Thumb

- When identifying classes, describe:
 1. Material entities within scope, i.e. **Material Entity**
 2. Qualities these material entities have, i.e. **Quality**
 3. What these material entities could do, i.e. **Realizable Entity**
 4. What these material entities actually do, i.e. **Process**
 5. Where these material entities and boundaries are located, i.e. **Immaterial Entity**
 6. When these entities exist, i.e. **Temporal Region**
 7. Information we use to talk about 1-6, i.e. **Generically Dependent Continuant**

Classes

- Material Entities –
- Qualities –
- Processes –
- Realizables –
- Sites & Boundaries –
- Temporal Region –
- Information –

At what speed does a patrol boat move in knots over an hour?

Classes

- Material Entities – **Patrol boat**
- Qualities –
- Processes –
- Realizables –
- Sites & Boundaries –
- Temporal Region –
- Information –

At what speed does a patrol boat move in knots over an hour?

Classes

- Material Entities – Patrol boat
- Qualities –
- Processes – **Act of motion**
- Realizables –
- Sites & Boundaries –
- Temporal Region –
- Information –

At what speed does a patrol boat move in knots over an hour?

Classes

- Material Entities – Patrol boat
- Qualities –
- Processes – Act of motion, **speed?**
- Realizables –
- Sites & Boundaries –
- Temporal Region –
- Information – **speed?**

At what speed does a patrol boat move in knots over an hour?

Classes

- Material Entities – Patrol boat
- Qualities –
- Processes – Act of motion, speed*
- Realizables –
- Sites & Boundaries –
- Temporal Region –
- Information – speed*

use * to note
ambiguity then move
on; we will revisit

At what speed does a patrol boat move in knots over an hour?

Classes

- Material Entities – Patrol boat
- Qualities –
- Processes – Act of motion, speed*
- Realizables –
- Sites & Boundaries –
- Temporal Region –
- Information – speed*, **knots measurement**

At what speed does a patrol boat move in knots over an hour?

Classes

- Material Entities – Patrol boat
- Qualities –
- Processes – Act of motion, speed*
- Realizables –
- Sites & Boundaries –
- Temporal Region – **hours***
- Information – speed*, knots measurement, **hours***

use * to note
ambiguity then move
on; we will revisit

At what speed does a patrol boat move in knots over an hour?

Revisiting Ambiguity

- “speed” as a process vs information about a process

Revisiting Ambiguity

- “speed” as a process vs information about a process
- Speed is the magnitude of a change in position over time

INFORMATION

Revisiting Ambiguity

- “speed” as a process vs information about a process
- Speed is the changing of position over time

PROCESS

Revisiting Ambiguity

- “speed” as a process vs information about a process

At what speed does a patrol boat move in knots over an hour?

WHICH DO WE CARE ABOUT FOR THIS
COMPETENCY QUESTION?

Simplify

- Material Entities – Patrol boat
- Qualities –
- Processes – Act of motion, speed*
- Realizables –
- Sites & Boundaries –
- Temporal Region – hours*
- Information – speed*, knots measurement, hours*

At what speed does a patrol boat move in knots over an hour?

Simplify

- Material Entities – Patrol boat
- ~~Qualities –~~
- Processes – Act of motion, speed*
- ~~Realizables –~~
- ~~Sites & Boundaries –~~
- Temporal Region – hours*
- Information – ~~speed*~~, knots measurement, ~~hours*~~

simplify the list

At what speed does a patrol boat move in knots over an hour?

Relations

- Material Entities – Patrol boat
- Processes – Act of motion, speed
- Temporal Region – hours
- Information – knots measurement

and reflect on
relationships among
the listed entities

At what speed does a patrol boat move in knots over an hour?

Rules of Thumb

- When identifying relations, describe:
 1. Qualities to material entities, i.e. **inheres in**
 2. Realizables to material entities, i.e. **inheres in, has material basis**
 3. Processes to material entities, i.e. **participates in**
 4. Realizables to processes, i.e. **has realization**
 5. Immaterial location of material entity, i.e. **located in**
 6. When any such entities exist, i.e. **exists at, datatype property**
 7. When any such entities carry information, e.g. **generically depends on**

Relations

- Material Entities – **Patrol boat**
- Processes – **Act of motion**, speed
- Temporal Region – hours
- Information – knots measurement

patrol boats participate
in processes

[https://github.com/BFO-ontology/BFO-](https://github.com/BFO-ontology/BFO-2020)



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Classes

- Material Entities – Portion of Tea*, Person
- Qualities –
- Processes – Act of Tea Consumption*
- Realizables – Prime Minister
- Sites & Boundaries – UK
- Temporal Region – Week, Day of Week
- Information – PM authorization protocol

On what day(s) of the week does the UK prime minister have tea?

Classes

- Material Entities – Portion of Tea, Person, Tea Cup, Keir Starmer
- Qualities –
- Processes – Act of Having Tea
- Realizables – UK Prime Minister Role
- Sites & Boundaries –
- Temporal Region – Days of the Week*, Time of Day*
- Information – Days of the Week*, Time of Day*, UK Tea Having Protocol

On what day(s) of the week does the UK prime minister have tea?

Relations

- Qualities to Material Entities –
- Realizables to Material Entities –
- Processes to Material Entities –
- Realizables to Processes –
- Location to Material Entities –
- Entities to Temporal Region –
- Information to Carriers –

On what day(s) of the week does the UK prime minister have tea?