This participant drew ontology topology to help himself understand, he doesn’t like description logic, looked at diagrams mostly

(M)

01:56 so these say GW is with power (axiom 1), yes, this is inside here (looking at the diagram), GWSuperSenses subclass of GWMulitPower, yep, GirlWithPower subclassof Hero, which is true, is there, and hero is disjoint with GWMultiPower

I: that is girl with multi power

Ok, I get it, ok, and the four, ok, this is disjoint with this (left hand side is disjoint with right hand side), and, ok, so GWMultiPower is subclass of hero, and hero disjoint with GWMultiPower, so this is the problem, so this is just in between, ok, so how, how do you fix it, emm, do you mean like, of course if we don’t have, if we remove this axiom, GWMultiPower subclassof GirlWithPower, then GWMulitPower not be a subclass of hero, and, and I think it would be ok for hero to be disjoint with GWMultiPower. Ok, is it enough?

I: or do you have any other thoughts? But if you think that’s it, then we can go ahead

(murmur) yes, GWSuperSenses subclassof GWMultiPower, so, if we fix, if we remove this (axiom 2), we also fix super senses

04:29 so this is the 2nd one

04:33 – 06:56 he answered a call

06:56 now this time the thunder is the unsatisfiable class

07:03 and then, sorry again I need to fix it, yea?

07: 06 I: yes, please

Emm, so is enhanced by the range is superpower, yep, thunder, so, this

I: this one is

No, the 2nd one, this one (pointing to axiom 2)

I: the 2nd one is this one (pointing to the training material some pattern)

Ok, solar engery is source of at least one superpower, yea, ok, so, (murmur, reading axiom 2), ok, god device subclassof device, and superpower is disjoint with device, (writing in his own way of representation), so, yea, this is a, this would be one way to fix it, to remove the disjointness

08:32 ok, the axiom 4, right?

Yea, basically because this disjointness, you know, this thing basically means that the, you know, emm, thunder is, you know, is enhanced by at least one god device, but the range of is enhanced by is superpower, god device subclass of device, of course, that’s the problem

08:55 I: yes, yes, ok the next one, and we do the same

How many are we doing in total?

I: emm, 8, if you can’t do it, we can do 6

No, 8 is ok, just I don’t, you know, there’re 73

09:12 ok, so, yea, I think now I understand it, this, so ok, I need to fix this unsatisfiable class, yes? isMemberOf, so thing is subclassof this memberof, which quite funny exists (?), must be probably, so, because otherwise, these are kind of description logic notation which I really hate. Probably now I prefer your visual notation than this description one, so, this gonna think, but the most one robot, and also the most one, human team, and human team and alien team are disjoint, alien team, robot is again, ok, and this, sorry, let me just (checking in training materials), so this means, yea, this means exactly, so it need to have a, exactly

I: less and equal, so it is at most one

So it can also be there is no relation, so this could be the case there is also no relation, ok, so it has to be at least one but no more than one, so is like this one, exactly one, but in this case, no more than one, so in that case, again, the problem could be solved by splitting, by not making this disjoint, by not saying anything about this exists

10:45 ok, next

10:49 god race subclassof secret team, iceman subclassof costumed, costumed subclassof god race, secret team, ermm, sorry this does, this mean, has 4 but not more than 4? Or can I up to 4

I: up to 4

Up to 4, but at least one, not 0, it can’t be 0, because the previous one, you say it can’t be 0, it has to be 1, 2, 3, 4

I: yea (Tie notes: I was wrong here, I probably confused with cardinality = 0 and nothing has a relationship)

Ok, and this has member you got 5, this has to be 5, yea, can’t be 4, 3, 2, 1, 0. Ok, so, and this (the unlabeled curve on the right hand side of the property) means thing, because now you specify the, you don’t put any label

I: emm, could be anything

Could be anything, yea, could be anything, so secret team has, emm, up to 4 things, costumed has 5, exactly 5 things, and these are all, ya, I saw, because I didn’t realize, now looking directly these (means diagrams), secret team has axioms 4, this exactly 5, this relation from costumed, costumed is a secret team, costumed is a sub class of secret team, this is correct, these are unsatisfiable

I: yea

So I need to, I need to find why they are unsatisfiable

I: no, how to fix it, how to change it to satisfiable

Ok, because as a professor (?) I need to say why the answer is unsatisfiable, imagine (?) I might not understand exactly why the answer is unsatisfiable, so if costumed is a subclass of god race, is a subclass of a secret team, ok, of course, yea, of course, yea, yea, no, that, sorry, yea, so because costumed is a subclass of secret team, then this constraint applied costumed which invalid this constraint (means max 4 thing), so if we make, e.g. this (means 4 in the max 4 thing) 5

13:26 good, yes, right, now the next one, again we have the absorbs

13:39 Absorbs, the unsatifiable property. Ok, so these, and again, the

I: the sub property

The sub, oh, it’s this one

I: yes, so if something is absorbed, then that thing must be resisted

Ok, also this sub property, they should, particularly, emm, whole star, ok, so absorbs is a sub property of resists, yeap, and, so is this independent from this cube (?)

I: no

It’s also a sub property of fire, yea? So it’s not a sub property of fire, it’s the range of fire, of course, sorry, emm, ok, so absorbs’ range is fire, sub property of resists, ok, resists range heat, heat subclass of energy, fire subclass of matter, energy disjoint with matter, so in this case, this is specially (?) quick, so absorbs is unsatisfiable, so why is absorbs unsatisfiable, because sub property of resists, resists’ range heat, heat is disjoint, oh, can I write here? So, go bananas, (drawing his own way, topology, names, arrows) absorbs, fire, erm, resists, heat, so we know we have heat, is energy and fire, is matter, absorbs is sub property of resists, so it goes this way, and energy is disjoint with matter, have a picture to make it easier to read, so absorbs goes here, this is fire, heat and energy, and matter, yea, and, so this is the picture, and then also, we all say the energy disjoint with, so which means that of course, this is inconsistent, so, so yea we can use the usual tricks to remove this, this 6, otherwise, otherwise we can just, just do something different for once, always do the same thing, we can just change the, we just change the, the, emm, we remove no. 1, so either we remove no. 1 or we remove no. 6, I’m always doing numbers, I’m always doing the disjoint, but we can also, yea, yea, it’s quite fun, yea because it’s quite easier for me to put them topologically, and then becomes obviously to remember them like these

17:23 ok, so aeroboat is now, emm, also problematic, is base of is inverse of has base, bear subclass of has base ln, sorry what does it mean base ln?

I: emm, has base in, sorry

Ah, base in, ok, ok, I thought it was base ln, couldn’t understand bear has base ln, ok, so, bear subclass of has base ln only cave, so the bear, emm, the bear is in the cave, and aeroboat, aeroboat, aeroboat is the base of some bear, yea, so is the base of at least one bear, yea, exactly, so it is base of some bear, and the bear is a base cave in, emm, this is inverse of this, yea, so just hide everything else, just focusing on these 4 things, and then it says cave is disjoint with aeroboat, aeroboat, so that’s, means, (murmur), haha, of course it’s so big, I’m not pay attention, of course they are disjoint, emm, so, yea, obviously it’s unsatisfiable, obviously we can fix the usual way by removing the disjoint, or otherwise, we, emm, well we can remove, we, we can fix it in lots of different ways, we can move 4, also we can remove 1, otherwise we can fix, we can change 2 or 3, yea, I didn’t notice this one (means the disjointness), so big, I even

19:35 is this the last one?

I: no, no, no, the last 2nd, nearly finish, only one

Okeydoke, so, this is a bit most, ok, so is owned by‘s domain is info center, are you sure this is because it goes to this, over here

I: oh, here (pointing to the domain pattern in training materials), this is domain

Ah, sorry, this is, I was looking at this one (means the range pattern), ah, ok, because this one is,

I: yea, you confused with that one (means the range pattern in training materials)

Yea yea yea, yea, ok that’s a tricky one, ok, so the domain owned by is info center, (drawing his own topology), so info center, domain, so, ok lab’s subclass of R&D center, and we have a cache subclass of lab, but also armory, and armory is subclass of is owned by some human race, so, so armory is owned by a member of human race, yea, is owned by at least one member, yea, so, at least one, ok, armory, and info center is disjoint with the R&D center, and where is the info center? Here, so info center, ok, so this, ok, okeydoke, and then unsatisfiable class is cache, ok, because cache is bo, so cache is in R&D center, cannot be in info center, but, armory is owned by, so is owned by relations between info center x, and between armory and human race, ok, because cache is subclass of armory, this one, and this one info center, ok, so the domain is owned by is info center, but actually you also have a, cache that’s a domain, or at least, some, what’s is called is owned by, and these two things are inconsistent, yea, so again we can fix it by remove the disjoint, axiom no. 5, or otherwise, if, emm, well, we could, or change 3, I mean, we delete, we delete the armory should fix it, if we delete, if we delete subclass link between cache and armory, that would fix it, there might be other way to do it, I mean, there are other ways to do it, we can go down the other path,

24:45 I: now the last one, this very complicated one

24:54 yes, because it’s grey, and, ok, steals only wood subclass of others, steals only wood subclass of others, is it the one (pointing to the domain pattern in training materials) I should look at? (I: yea), only teleportation moves things, so only, what is this (pointing to the unlabelled curve inside villain)?

I: This is some set that is part of people and part of others, and nothing inside the grey area, so it’s either people or others

25:44 But also villain, the grey area is equal to villain, so

I: so that is just subset of villain

Ok, basically, you know, just simplify forgetting about these, if we just focus on villain, this means that, only villain steals things, ok, so let’s say, (writing his own topology) villain, steals, things, and we say it’s only, that means villain is the domain, correct? Ok, cool, emm, which shows no. 3 axiom, ok so villain is the domain of steals, and what we say here is, sorry what does steals only wood subclass of others? I don’t understand what this means, steals only, no. 1

I: for all steals wood subset of others, so if steals(x, y) and wood(y) then others(x) (during the training he used this kind of notation to aid his understanding)

Ok, steals, ok so, emm, yea, ok, I get it, I could get it. So basically, emm, other steals wood basically, and only other can steal wood, so only villain steals things, but only others steals wood, so again, this only, so only other steals wood, emm, other subclass of villain, then villain disjoint with wood, here I say subclass of wood, emm, did this represent everything here? Are you sure it’s correct?

I: yea, I checked it using Protege

Emm, because wood is the range of steals

I: wood is?

The range of steals, it’s not the domain, have others steals wood, yea, and, but also you say that the domain of steals is villain, so the fact one is domain, one is the range, I’m not, emm, I guess probably the thing is that, where is no. 3 here?

I: no. 3 is this one (pointing to the diagram), and domain is villain

Ok, so, and what does it equal come to here (means the pattern in training materials)? (I: this one) this one, ok, the trick one, emm, so only teleportation moves thing, so only the thing here (unlabelled curve in villain at diagram) steals, so only this thing steals, wood is not part of this thing, ah, sorry, sorry, I made a mistake here (his own topology), sorry put wrong, this way could never use, sorry, I didn’t, what I wrote here (his own topology) is not what is written here (our representation), ok, so let’s, so wood is subclass of others, so wood is here and is disjoint with villain, yea, sorry I made a mistake, my notation before I could, so wood is a subclass of others, yea, and others is the domain for steals, so this is what no. 1 say, there is others, you know, steals, wait a second, can you tell me where 1 is in the diagram? The axiom no. 1

I: oh, the whole thing

And, so is wood subclass of others? I don’t think so actually, I think my original one was correct

I: no

33:38 Wood is not subclass of others, but it is not subclass of others, so I’ll clean, so, emm, basically what we, what we are saying here is (writing his own topology) the relation of steals, steal only wood, is subclass of others, so others steals woods, others is subclass of villain, so we can do that, the domain of steals is, emm, villain, so villain steals thing, yea, and villain is disjoint with wood, yea, still can’t see, let’s, missing something, let’s just, so let’s just look at again these things here, so we say the key relation is steal from, which we say only teleportation moves things, there is only things in this (unlabelled curve in villain at diagram) steal something, yea, which basically say the villain, domain, ok, but also we say there’s a subclass of villain, others, the steals only wood, yea, I can’t see any inconsistency, you are 100% sure this is unsatisfiable, because one is about domain, one is about range, so I don’t see why it should be any

I: yea, this is a tricky one, so the first three statement just give you an idea that if this one (means steals only wood), because it is too big, if this one is subset of others, and others is the subset of villain, and also the domain is villain, then the villain is equal to the universe, the villain is equal to the truth, because if this one, nothing steals, could also be subset of others, that is vacuous truth, so villain is equal to the universe, it contains everything, but then it says villain is disjoint with wood, then something is wrong, because villain is already everything, is equal to Thing, it says that Thing disjoint with wood, then it means that wood is outside thing, it is impossible

37:45 Ok, the thing is this means villain is everything, and where does, how do you use villain is as same as everything

I: here, this statement (axiom 1), because, it’s like for all kind of things, and if that property, we don’t, if something is not related, e.g. Steals x and y, and x is belong to others, and y is belong to wood, then the situation holds, but if there is some x and y belong to others and wood, but they don’t have that property, they don’t linked with that property, can also satisfy with this (axiom 1)

38:50 but wood, wood is not the domain of steals, so in fact villain is the universe, I mean, can be, can it be the simply there is no wood, yea, I don’t know, I mean I understand that of course if villain, if villain becomes everything, then I understand this becomes unsatisfiable, you know, can’t be disjoint with everything, emm, it just, it’s, emm, yea, I mean, yea, I don’t understand, I believe you, also you say you put in Protege and you confirm it, ok, so this maybe, this, emm, this funny thing with description logic that, sometimes you got this, emm, anyway, yea, actually can I, can I have that, because I might investigate in the future, I’ll take a photo

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34:01 Q1

Emm, what do you mean, which way of debugging, using concept diagramms, yea, I did particular different from what I do, normally, what I do is I kind of trying to transform the notation to a notation I am familiar with, probably (?) work with the knowledge I am familiar, and in this case, because we have two notations, then I was going from one to the other using the ? Bits where more intuitive to mean, so I was reading the axioms in English, if sometimes the syntax was not clear to me that I would look at the visual notation to clarify the syntax asked you (?) back and forth so I would say, yea, that was pretty much the way normally do it with any notation.

35:27 Q3

Terrible.

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| --- | --- | --- |
| **Task id by unsatisfiable** | **Solutions** |  |
| **(Mul)** Thunder | Delete axiom 4: SuperPower DisjointWith Device | R |
| **(Mul)** Costumed, Iceman | Change axiom 4 to SecretTeam SubClassOf hasMember max 5 Thing | R |
| **(Mer)** GWMultiPower, GWSuperSenses | (1) delete axiom 1: GWMultiPower SubClassOf GirlWithPower  (2) delete axiom 2: GWSuperSenses SubClassOf GWMultiPower | R for (1) not for (2) |
| **(Mer)** Wood | No solution |  |
| **(Mer)** absorbs | (1) delete axiom 6: Energy DisjointWith Matter  (2) delete axiom 1: absorbs Range Fire | R |
| **(Mul)** Aeroboat | (1) delete axiom 4: Cave DisjointWith Aeroboat  (2) delete axiom 1: isBaseOf InverseOf hasBaseIn  (3) change axiom 2 or 3 | R |
| **(Mul)** isMemberOf | Delete axiom 5: HumanTeam DisjointWith AlienTeam | R |
| **(Mer)** Cache | (1) delete axiom 5: InfoCentre DisjointWith RnDCentre  (2) change axiom 3 to Cache SubClassOf Lab | R |