10월 10일

논문을 내지 못했다. 졸업을 하지 못했다… 졸업 요건을 채우지 못했다… 하지만 나는 포기하지 않는다.

10월 11일 오전에 미팅이 있다. 향후 계획을 어떻게 정할지인데 아직 하루가 남았으므로 Cycle count 분석을 진행해보고자 한다.

model.pt1.15 → 1003_1217(original gsc) (73.54)

model.pt.19 → seed2_new_cs_9_hs_32_ln_false (79.5) → 근데 이건 잘못된 cycle count였잔아

에지 임베딩, 노드 임베딩 모두 미니 배치가 4이므로 4문제씩 묶여서 결과가 나온다.

{"answerKey": "C", "id": "5d03ad171fd661a28da5b6eb79967a6b", "question": {"question_concept": "round brush", "choices": [{"label": "A", "text": "hair brush"}, {"label": "B", "text": "ladies bathroom"}, {"label": "C", "text": "art supplies"}, {"label": "D", "text": "shower"}, {"label": "E", "text": "hair salon"}], "stem": "If it's not used for hair a round brush is an example of what?"}, "statements": [{"label": false, "statement": "brush is related to hair_brush and hair_brush is considered as the location of hair and hair is related to brush<SEP>brush is related to hair_brush and hair_brush is considered as the location of hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is at location of hair_brush and hair_brush is related to brush<SEP>brush is considered as the location of hair and hair is related to hair_brush and hair_brush is related to brush<SEP>brush is related to hair and hair is at location of hair_brush and hair_brush is related to brush"}, {"label": false, "statement": "hair is related to brush<SEP>used is related to use<SEP>use is related to used"}, {"label": true, "statement": "art_supply is a supply<SEP>hair is at location of brush<SEP>supply is a art_supply"}, {"label": false, "statement": "use is related to used"}, {"label": false, "statement": "used is related to use<SEP>use is related to used"}]}

{"answerKey": "C", "id": "5d03ad171fd661a28da5b6eb79967a6b", "question": {"question_concept": "round brush", "choices": [{"label": "A", "text": "hair brush"}, {"label": "B", "text": "ladies bathroom"}, {"label": "C", "text": "art supplies"}, {"label": "D", "text": "shower"}, {"label": "E", "text": "hair salon"}], "stem": "If it's not used for hair a round brush is an example of what?"}, "statements": [{"label": false, "statement": "brush is considered as the location of hair and hair is used for brushing and brushing is related to brush<SEP>brush is related to comb and comb is used for hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is used for combing and combing is related to brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is related to brush<SEP>brush is related to hair and hair is used for brushing and brushing is related to brush<SEP>brush is related to hair and hair is used for combing and combing is related to brush<SEP>brush is related to comb and comb is used for hair and hair is related to brush<SEP>brush is considered as the location of hair and hair is related to hairbrush and hairbrush is a brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is at location of hairbrush and hairbrush is a brush<SEP>brush is a hairbrush and hairbrush is related to hair and hair is at location of brush<SEP>brush is related to hair and hair is at location of hairbrush and hairbrush is a brush<SEP>brush is a hairbrush and hairbrush is related to hair and hair is related to brush<SEP>brush is related to hair and hair is the subevent of grooming and grooming has subevent brush<SEP>brush is related to hair and hair is related to hairbrush and hairbrush is a brush<SEP>brush is related to brushing and brushing uses hair and hair is at location of brush<SEP>brush is the subevent of grooming and grooming has subevent hair and hair is related to brush<SEP>brush is the subevent of grooming and grooming has subevent hair and hair is at location of brush<SEP>brush is related to combing and combing uses hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is part of brush"}, {"label": false, "statement": "brush is related to comb and comb is used for hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is used for brushing and brushing is related to brush<SEP>brush is considered as the location of hair and hair is used for combing and combing is related to brush<SEP>brush is related to hair and hair is used for combing and combing is related to brush<SEP>brush is related to comb and comb is used for hair and hair is related to brush<SEP>brush is related to hair and hair is used for brushing and brushing is related to brush<SEP>brush is a hairbrush and hairbrush is considered

as the location of hair and hair is related to brush<SEP>brush is related to comb and comb is used for grooming and grooming has subevent brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is related to hairbrush and hairbrush is a brush<SEP>brush is a hairbrush and hairbrush is related to hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is part of brush<SEP>brush is considered as the location of hair and hair is at location of hairbrush and hairbrush is a brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is related to brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is related to brush<SEP>brush is considered as the location of hair and hair is a filament and filament is related to brush<SEP>brush is related to hair and hair is at location of hairbrush and hairbrush is a brush<SEP>hair is at location of hair_brush and hair_brush is related to comb and comb is used for hair<SEP>hair is at location of hairbrush and hairbrush is related to comb and comb is used for hair<SEP>brush is a hairbrush and hairbrush is related to hair and hair is related to brush"}, {"label": true, "statement": "brush is related to comb and comb is used for hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is used for combing and combing is related to brush<SEP>brush is related to hair and hair is used for combing and combing is related to brush<SEP>brush is related to comb and comb is used for hair and hair is related to brush<SEP>brush is considered as the location of hair and hair is used for brushing and brushing is related to brush<SEP>brush is related to hair and hair is used for brushing and brushing is related to brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is related to brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is at location of brush<SEP>brush is used for paint and paint is used for painting and painting has subevent brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is part of brush<SEP>brush is considered as the location of hair and hair is related to hairbrush and hairbrush is a brush<SEP>brush is a hairbrush and hairbrush is related to hair and hair is at location of brush<SEP>brush includes bristle and bristle is a hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is related to brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is related to brush<SEP>brush is used for painting and painting has subevent paint and paint is the antonym of brush<SEP>brush is related to hair and hair is a bristle and bristle is part of brush<SEP>hair is at location of hairbrush and hairbrush is related to comb and comb is used for hair<SEP>brush

is used for paint and paint is the subevent of painting and painting has subevent brush<SEP>brush is considered as the location of hair and hair is at location of hairbrush and hairbrush is a brush"}, {"label": false, "statement": "brush is related to comb and comb is used for hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is used for combing and combing is related to brush<SEP>brush is considered as the location of hair and hair is used for brushing and brushing is related to brush<SEP>brush is related to comb and comb is used for hair and hair is related to brush<SEP>brush is related to hair and hair is used for combing and combing is related to brush<SEP>brush is related to hair and hair is used for brushing and brushing is related to brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is related to brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is related to hairbrush and hairbrush is a brush<SEP>brush is related to comb and comb is used for grooming and grooming has subevent brush<SEP>brush is a hairbrush and hairbrush is related to hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is at location of hairbrush and hairbrush is a brush<SEP>brush is considered as the location of hair and hair is a filament and filament is related to brush<SEP>brush is related to hair and hair is at location of hairbrush and hairbrush is a brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is part of brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is related to brush<SEP>brush is considered as the location of hair and hair is a bristle and bristle is related to brush<SEP>brush is a hairbrush and hairbrush is related to hair and hair is related to brush<SEP>brush is related to hair and hair is related to hairbrush and hairbrush is a brush<SEP>hair is at location of hair_brush and hair_brush is related to comb and comb is used for hair"}, {"label": false, "statement": "brush is considered as the location of hair and hair is used for combing and combing is related to brush<SEP>brush is related to comb and comb is used for hair and hair is at location of brush<SEP>brush is considered as the location of hair and hair is used for brushing and brushing is related to brush<SEP>brush is related to hair and hair is used for combing and combing is related to brush<SEP>brush is related to comb and comb is used for hair and hair is related to brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is related to brush<SEP>brush is related to hair and hair is used for brushing and brushing is related to brush<SEP>brush is the subevent of grooming and grooming has subevent hair and hair is at location of brush<SEP>brush is a hairbrush and hairbrush is considered as the location of hair and hair is at location of

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그래프에서 노드는 단어, 에지는 관계를 나타낸다. ConceptNet(지식 그래프)에서 관계는 크게 19가지이며 양방향까지 고려해서 총 38개가 있다.

순환 논법이란 어떤 주장을 함에 있어 그 주장의 근거로 그 주장을 사용하는 오류이다.

ConceptNet으로부터 graph encoding을 위해 subgraph를 추출하는데 하나의 subgraph는 하나의 문제,그리고 그에 해당하는 다섯 가지 선택지(정답 후보) 중 하나를 의미한다.

즉, 그래프에서 길이 3의 사이클은 세가지의 단어와 세가지의 관계로 이루어진다. 이것을 triple로 나타내면

(A,r1,B),(B,r2,C), (C,r3,A)로 표현할 수 있다.

위 triple을 문장으로 나타내면 “A r1 B and B r2 C and C r3 A”로 나타낼 수 있으며 이 문장에서 순환 논법이 발생할 수 있는 경우는?

매우 많다고 할 수 있다.

예를 들어, “A is a B and B has subevent(is part of) C and C is used for A” , “A is a B and B h와 같은 형태는 순환 논법이 발생할 수 있다.

1. **원형 논증 (Circular Argument):**
   - "왜냐하면 그것이 사실이기 때문에 맞다."
2. **자기 찬양 (Self-Praise):**
   - "내가 항상 옳다. 왜냐하면 나는 최고의 의견을 가지고 있기 때문이다."
3. **무한 루프 (Infinite Loop):**
   - "이 주장은 항상 참이다. 왜냐하면 이 주장이 항상 참이기 때문에 맞다."

4. **허구의 원리 (Principle of Fiction):**
    - "왜냐하면 마법이 존재하기 때문에 마법사들이 그런 행동을 할 수 있다."
5. **원초적 논증 (Begging the Question):**
    - "우주는 무한하다. 왜냐하면 우주는 절대 끝나지 않기 때문이다."

이러한 예시들은 주장이 자기 자신을 뒷받침하거나, 원형적인 논리 오류에 빠져 있는 경우를 나타냅니다. 순환 논법은 타당한 논리적 근거나 증거 없이 주장을 뒷받침하려고 할 때 발생할 수 있습니다.

1. **원형 논증 (Circular Argument):**
    - 이미 주장한 것을 다시 근거로 주장하는 형태의 순환 논법.
    - "나의 의견은 항상 옳다. 왜냐하면 나는 항상 옳은 의견만을 가지고 있다."
    - (r1, r2, r3) = (related to, related to, related to)
    - (r1, r2, r3) = (antonym, antonym, antonym)
    - (r1, r2, r3) = (related to, used for, receives action)
    - "Apple is related to Banana, Banana is related to Cherry, and Cherry is related to Apple." → 오류가 아님!
    - "Positive is an antonym of Negative, Negative is an antonym of Zero, and Zero is an antonym of Positive." → 오류가 아님!
    - "Book is related to Author, Author is used for Publisher, and Publisher receives action from Book." → 오류가 아님!

1. **자명성 논증 (Begging the Question):**
    - 주장이 이미 결론을 내포하고 있어서 실제로는 아무런 설명이나 근거를 제공하지 않는 논증.
    - "비합리적인 행동은 이유가 없다. 왜냐하면 비합리적인 행동이기 때문이다."
    - (r1, r2, r3) = (causes, causes, causes)
    - (r1, r2, r3) = (receives action, receives action, receives action)
    - (r1, r2, r3) = (26: isa, 32: madeof, 34: notdesires)
    - "Lying causes Suspicion, Suspicion causes Investigation, and Investigation causes Lying."

- "Dog receives action from cat, Cat receives action from Bird and Bird receives action from Dogs."
- "Sun is a Star, Star is made of Gas, and Gas does not desires Sun."

2. **시소로스의 논증 (Sorites Paradox):**
    - 작은 변화가 모여서 큰 변화가 되는 것에 대한 특이한 논증으로, 경계 설정의 모호성을 이용한 순환 논법.
    - "하나의 헤어는 머리카락이 아니다. 그러므로 수백 개의 헤어를 모아도 머리카락이 아니다."
    - (r1, r2, r3) = (has subevent, has subevent, has subevent)
    - (r1, r2, r3) = (used for, used for, uses)
    - (r1, r2, r3) = (has subevent, not desires, used for)
    - (r1, r2, r3) = (capable of, desires, 34: not desires)
    - "Small event has subevent Medium event, Medium event has subevent Large event, and Large event has subevent Small event."
    - "Knife is used for Cooking, Cooking is used for Eating, and Eating uses Knife."
    - "Laughing has subevent Joking, Joking does not desire Seriousness, and Seriousness is used for Laughing."
    - "Ant is capable of Carrying, Carrying desires Collection, and Collection does not desires Ant."
3. **파고라스의 함정 (Parmenides' Fallacy):**
    - 모순된 주장을 통해 변화가 불가능하다는 것을 주장하면서 순환 논법.
    - "이 세계에서는 변화가 없다. 왜냐하면 세계가 변하는 것을 관찰할 수 없기 때문이다."
    - (r1, r2, r3) = (not desires, not desires, not desires)
    - (r1, r2, r3) = (made of, made of, made of)
    - (r1, r2, r3) = (has property, has subevent, made of)
    - "Love does not desires Hate, Hate does not desires Indifference, and Indifference does not desires Love."

- "Water has property Liquid, Liquid has subevent Evaporation, and Evaporation causes Water."

4. **정체성 논증 (Identity Fallacy):**
    - 능력이 없다는 주장이 이미 주장하는 행위를 수행할 능력이 없다는 것으로 돌아가는 순환 논법.
    - "나는 이 과목을 이해할 수 없다. 왜냐하면 나는 이 과목을 이해할 능력이 없기 때문이다."
    - (r1, r2, r3) = (made of, made of, made of)
    - (r1, r2, r3) = (not desires, not desires, not desires)
    - (r1, r2, r3) = (used for, antonym, causes)
    - (r1, r2, r3) = (not desires, relatedto, usedfor)
    - "Paper is made of Wood, Wood is made of Fiber, and Fiber is made of Paper."
    - "Failure does not desires Success, Success does not desires Mediocrity, and Mediocrity does not desires Failure."
    - “Medicine is used for Healing, Healing is an antonym of Harming, Harming causes Medicine.”
    - "Fear does not desires Courage, Courage is related to Adventure, and Adventure is used for Fear."
5. **일부 사례의 일반화 (Hasty Generalization):**
    - 특정 사례나 소수의 데이터를 기반으로 전반적인 결론을 내리는 것이며, 일반적인 규칙을 확증하기 위해 이미 내린 결론을 근거로 하는 경우 순환 논법이 될 수 있음.
    - "이 한 사람이 운전 중에 사고를 냈으니까 모든 운전자는 위험하다."
    - (r1, r2, r3) = (capable of, capable of, capable of)
    - (r1, r2, r3) = (has subevent, has subevent, has subevent)
    - (r1, r2, r3) = (capableof, hassubevent, notdesires)
    - (r1, r2, r3) = (antonym, isa, notdesires)
    - "Student is capable of Learning, Learning is capable of Understanding, and Understanding is capable of Student."

- "Meeting has sub event Discussion, Discussion has sub event Decision, and Decision has sub event Meeting."
- "Fire is capableof Burning, Burning has sub event Destruction, and Destruction has subevent Fire."
- "Fast is an antonym of Slow, Slow isa Speed, and Speed has sub event Fast."

6. **원인과 결과의 역전 (Post Hoc Fallacy):**
    - 어떤 사건이 다른 사건의 결과라고 주장할 때, 이미 주장한 결과를 근거로 원인을 제시하는 형태의 순환 논법.
    - "내 감기는 콜드 음료수를 마셔서 생겼다. 왜냐하면 콜드 음료수를 마셨던 다음에 감기에 걸렸기 때문이다."
    - (r1, r2, r3) = (causes, causes, causes)
    - (r1, r2, r3) = (has property, has property, has property)
    - (r1, r2, r3) = (isa, hassubevent, receivesaction)
    - (r1, r2, r3) = (notcapableof, context to answer, capableof)
    - "Sun isa Star, Star has sub event Eclipse, and Eclipse receives action from sun"
    - "Human is not capable of Flying, Flying is context to answer Bird, and Bird is capable of Human."
    - "Stress causes Headache, Headache has property Pain, and Pain receives action fro stress"

이러한 종류의 순환 논법은 논리적으로 타당한 근거 없이 주장을 뒷받침하려는 시도로 인해 발생할 수 있습니다.

순환논법은 추론자가 논증할 명제를 논증의 근거로 하는 오류이다.

순환논증의 요소는 논리적으로 유효한데, 그 이유는 전제가 참일 경우 결론이 참이어야 하기 때문이다. 순환논법은 정규적인 논리적 오류는 아니지만 논증에 실용적 결함이 있기 때문에 논증의 설득은 실패하게 된다. 이미 결론을 믿고 있지 않거나 전제가 결론에 대한 독립적인 증거가 되지 못한다면 전제를 수락할 이유가 없다.

“snake is at location of garden and garden is at location of back yard and back yard is considered as the location of snake”

→ “뒷마당은 뱀이 있는 위치다”라는 부분에서 뱀의 위치가 뒷마당으로 정의되고, 동시에 뒷마당은 뱀ㅇ

특정한 의견을 주장하려다가 근거가 생각이 안 나는 상황에서 그 주장을 반복하는, 즉 생각 없이 말했더니 주장과 근거가 결국 동일한 의미인 오류이다. 즉 논증 자체가 오류라 다른 오류와 달리 반박할 문제점조차 없다