Retrieve the names of corals which are in **ALL** reefs

→ using double negation

→ the names of corals which have no reefs they are not in

REEF[reefname, latitude, longitude, 2006\_bleachedarea, summer\_maximum\_mounthly\_mean\_temperature]

CORAL[coralname, coralcode, thermalthreshold]

CORALSAMPLING[sampleno, coralcode, reefname, dateofsampling, bleachpercent]

1. What reefs is coral\_\_\_(a random coral) in?
2. What reefs is coral\_\_\_(a random coral) not in?
3. What did we get answer in 2?
4. What reefs is coral\_\_\_(a random coral) in?

SELECT reefname

FROM CORALSAMPLING B

~~WHERE coralcode = X~~

→ do the join:

WHERE B.coralcode = A.coralcode

1. What reefs is coral\_\_\_(a random coral) not in?

SELECT reefname

FROM REEF

WHERE reefname NOT IN (part 1)

1. What did we get answer in 2?

SELECT coralname

FROM CORAL A

WHERE NOT EXIST (part 2)

→ as NOT EXIST do not do the join, so need to do the join in part 1

SELECT coralname

FROM CORAL A

WHERE NOT EXIST (

SELECT reefname

FROM REEF

WHERE reefname NOT IN (

SELECT reefname

FROM CORALSAMPLING B

WHERE B.coralcode = A.coralcode))

Final question:

SELECT reefname

FROM REEF A

WHERE NOT EXISTS (Q2)

Q2.

SELECT coralcode

FROM CORALSAMPLING

WHERE reefname=’wrechk is’ AND coralcode NOT IN (Q1)

Q1.

SELECT coralcode

FROM CORALSAMPLING B

WHERE A.reefname = B.reefname

|  |  |  |  |
| --- | --- | --- | --- |
| wrech | x | Y |  |
| A | A | A |  |
| B | B | B |  |
| C | D | C |  |
| B | D | D |  |
| A | A | C |  |
| B |  | A |  |
| A |  |  |  |

DISTINCT

|  |  |  |
| --- | --- | --- |
| Wrech | X | Y |
| A | A | A |
| B | B | B |
| C | D | E |
|  |  | D |
|  |  | C |

REMOVE THINGS NOT IN WRECH

|  |  |  |
| --- | --- | --- |
| WRECH | X | Y |
| A | A | A |
| B | B | B |
| C |  | C |

SELECT reefname

FROM CORALSAMPLING

WHERE coralcode IN (SELECT coralcode

FROM CORALSAMPLING

WHERE reefname=’wreck is’)

GROUP BY reefname

HAVING COUNT(DISTINCT coralcode) = (SELECT COUNT(DISTINCT coralcode

FROM CORALSAMPLING

WHERE reefname = ’Wreck is’)