**APPENDIX**

DROP VIEW IF EXISTS forestation;

CREATE VIEW Forestation AS

SELECT

r.country\_name,

f.year,

r.income\_group,

r.region,

l.total\_area\_sq\_mi,

f.forest\_area\_sqkm,

(

(

Sum(forest\_area\_sqkm) / Sum(total\_area\_sq\_mi \* 2.59)

) \* 100

) percentage\_forest

FROM

forest\_area f

JOIN land\_area l ON f.country\_code = l.country\_code

AND f.year = l.year

JOIN regions r ON r.country\_code = f.country\_code

GROUP BY

r.country\_name,

f.year,

r.income\_group,

r.region,

l.total\_area\_sq\_mi,

f.forest\_area\_sqkm;

SELECT \* FROM forestation;

**-- 1A & 1B**

SELECT

\*

FROM

forest\_area

WHERE

country\_name = 'World'

AND (

year = 2016

OR year = 1990

);

**-- 1C**

SELECT

previous.forest\_area\_sqkm - current.forest\_area\_sqkm As difference

FROM

forest\_area AS previous

JOIN forest\_area AS current ON

(

current.year = 2016

AND previous.year = 1990

AND current.country\_name = 'World'

AND previous.country\_name = 'World'

);

**-- 1D**

SELECT

ROUND(

(

(

(

previous.forest\_area\_sqkm - current.forest\_area\_sqkm

) \* 100

) / previous.forest\_area\_sqkm

):: Numeric, 2

) AS percentage

FROM

forest\_area AS current

JOIN forest\_area AS previous ON

(

current.year = '2016'

AND previous.year = '1990'

AND current.country\_name = 'World'

AND previous.country\_name = 'World'

);

**-- 1E & 1F**

SELECT

l.country\_name,

l.total\_area\_sq\_mi \* 2.59 AS total\_area\_sqkm,

ABS(

(l.total\_area\_sq\_mi \* 2.59) - (

SELECT

sub1.forest\_area\_sqkm - sub2.forest\_area\_sqkm AS diff\_forest\_area\_sq\_km

FROM

(

SELECT

f.country\_code AS cc,

f.forest\_area\_sqkm

FROM

forest\_area f

WHERE

f.country\_name = 'World'

AND f.year = 1990

) AS sub1

JOIN (

SELECT

f.country\_code AS cc,

f.forest\_area\_sqkm

FROM

forest\_area f

WHERE

f.country\_name = 'World'

AND f.year = 2016

) AS sub2 ON sub1.cc = sub2.cc

)

) AS diff\_fa\_la\_sqkm

FROM

land\_area l

WHERE

l.year = 2016

ORDER BY 3

LIMIT 1;

**-- Part II Regional Outlook – 2A**

SELECT

country\_name,

ROUND(

(

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100

):: Numeric, 2

) AS percentage\_forest

FROM

forestation

WHERE

year = 2016 AND country\_name = 'World'

GROUP BY

country\_name;

**-- 2B-F**

SELECT

region,

ROUND(

(

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100

):: Numeric, 2

) AS percent\_forest

FROM

forestation

WHERE

year = 2016

GROUP BY

region

ORDER BY

percent\_forest DESC;

**-- 2F**

SELECT

country\_name,

ROUND(

(

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100

):: Numeric, 2

) AS percent\_forest

FROM

forestation

WHERE

year = 1990 AND country\_name = 'World'

GROUP BY

country\_name;

**-- 2G-J / Table 2.1 1990 data**

SELECT

region,

ROUND(

(

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100

):: Numeric, 2

) AS percent\_forest

FROM

forestation

WHERE

year = 1990

GROUP BY

region

ORDER BY

percent\_forest DESC;

**-- Table 2.1 2016 data**

SELECT

region,

Round(

(

(

Sum(forest\_area\_sqkm) / Sum(total\_area\_sq\_mi \* 2.59)

)\* 100

):: Numeric, 2

) AS percent\_forest

FROM

Forestation

WHERE

YEAR = 2016

GROUP BY

region

ORDER BY

percent\_forest DESC;

**-- 3A.1**

WITH t1 AS

(

SELECT

country\_name,

SUM(forest\_area\_sqkm) forest\_area\_1

FROM

forestation

WHERE

YEAR = 1990

GROUP BY

country\_name,

forest\_area\_sqkm

),

t2 AS

(

SELECT

country\_name,

SUM(forest\_area\_sqkm) forest\_area\_2

FROM

forestation

WHERE

YEAR = 2016

GROUP BY

country\_name,

forest\_area\_sqkm

)

SELECT

f.country\_name,

(

f.forest\_area\_1 - t.forest\_area\_2

) forest\_change

FROM

t1 f

JOIN t2 t ON f.country\_name = t.country\_name

ORDER BY

forest\_change

LIMIT 2;

**-- 3A.2**

WITH forest\_percentage\_1990 AS

(

SELECT

country\_name,

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100 percent\_forestation\_1

FROM

forestation

WHERE

YEAR = 1990

GROUP BY

country\_name,

forest\_area\_sqkm

),

forest\_percentage\_2016 AS

(

SELECT

country\_name,

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100 percent\_forestation\_2

FROM

forestation

WHERE

YEAR = 2016

GROUP BY

country\_name,

forest\_area\_sqkm

)

SELECT

f.country\_name,

ROUND(

(

(

(

f.percent\_forestation\_1 - t.percent\_forestation\_2

)/(f.percent\_forestation\_1)

) \* 100

):: Numeric, 2

) percent\_change

FROM

forest\_percentage\_1990 f

JOIN forest\_percentage\_2016 t ON f.country\_name = t.country\_name

ORDER BY

percent\_change

LIMIT 1;

**-- 3B Table 3.1**

WITH t1 AS

(

SELECT

country\_name,

SUM(forest\_area\_sqkm) forest\_area\_1

FROM

forestation

WHERE

YEAR = 1990

GROUP BY

country\_name,

forest\_area\_sqkm

),

t2 AS

(

SELECT

country\_name,

SUM(forest\_area\_sqkm) forest\_area\_2

FROM

forestation

WHERE

YEAR = 2016

GROUP BY

country\_name,

forest\_area\_sqkm

)

SELECT

f.country\_name,

ROUND(

(

f.forest\_area\_1 - t.forest\_area\_2

):: Numeric, 2

) forest\_change

FROM

t1 f

JOIN t2 t ON f.country\_name = t.country\_name

WHERE

f.forest\_area\_1 IS NOT NULL

AND t.forest\_area\_2 IS NOT NULL

AND f.country\_name != 'World'

ORDER BY

forest\_change DESC

LIMIT 5;

**-- Table 3.2**

WITH forest\_percentage\_1990 AS

(

SELECT

country\_name,

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100 percent\_forestation\_1

FROM

forestation

WHERE

YEAR = 1990

GROUP BY

country\_name,

forest\_area\_sqkm

),

forest\_percentage\_2016 AS

(

SELECT

country\_name,

(

SUM(forest\_area\_sqkm) / SUM(total\_area\_sq\_mi \* 2.59)

) \* 100 percent\_forestation\_2

FROM

forestation

WHERE

YEAR = 2016

GROUP BY

country\_name,

forest\_area\_sqkm

)

SELECT

f.country\_name,

Round(

(

(

(

f.percent\_forestation\_1 - t.percent\_forestation\_2

) / (f.percent\_forestation\_1)

) \* 100

):: Numeric, 2

) percent\_change

FROM

forest\_percentage\_1990 f

JOIN forest\_percentage\_2016 t ON f.country\_name = t.country\_name

WHERE

f.percent\_forestation\_1 IS NOT NULL

AND t.percent\_forestation\_2 IS NOT NULL

AND f.country\_name != 'World'

ORDER BY

percent\_change DESC

LIMIT 5;

**-- 3C Table 3.3**

With table1 AS

(

SELECT

f.country\_code,

f.country\_name,

f.year,

f.forest\_area\_sqkm,

l.total\_area\_sq\_mi \* 2.59 AS total\_area\_sqkm,

(

f.forest\_area\_sqkm /(l.total\_area\_sq\_mi \* 2.59)

) \* 100 AS perc\_fa

FROM

forest\_area f

JOIN land\_area l ON f.country\_code = l.country\_code

AND (

f.country\_name != 'World'

AND f.forest\_area\_sqkm IS NOT NULL

AND l.total\_area\_sq\_mi IS NOT NULL

)

AND (

f.year = 2016

AND l.year = 2016

)

ORDER BY 6 DESC

),

table2 AS

(

SELECT

table1.country\_code,

table1.country\_name,

table1.year,

table1.perc\_fa,

CASE WHEN table1.perc\_fa >= 75 THEN '75-100%' WHEN table1.perc\_fa < 75

AND table1.perc\_fa >= 50 THEN '50-75%' WHEN table1.perc\_fa < 50

AND table1.perc\_fa >= 25 THEN '25-50%' ELSE '0-25%' END AS percentile

FROM table1

ORDER BY 5 DESC

)

SELECT

table2.percentile,

COUNT(table2.percentile)

FROM table2

GROUP BY 1

ORDER BY 2 DESC;

**-- Table 3.4**

SELECT

country\_name,

region,

percentage\_forest

FROM

forestation

WHERE

percentage\_forest > 75

AND percentage\_forest IS NOT NULL

AND year = 2016

ORDER BY 3 DESC;