# Title Placeholder

## Load in Specific Packages

```
library(readr)
library(tidyr)
library(dplyr)
##
## Attaching package: 'dplyr'
## The following objects are masked from 'package:stats':
##
##
       filter, lag
## The following objects are masked from 'package:base':
##
##
       intersect, setdiff, setequal, union
library(here)
## here() starts at C:/Users/romin/ToyRepo
library(lemon)
## Warning: package 'lemon' was built under R version 4.4.2
library(kableExtra)
## Warning: package 'kableExtra' was built under R version 4.4.2
##
## Attaching package: 'kableExtra'
## The following object is masked from 'package:dplyr':
##
##
       group_rows
library(ggplot2)
## Warning: package 'ggplot2' was built under R version 4.4.2
library(reshape())
## Warning: package 'reshape' was built under R version 4.4.2
##
## Attaching package: 'reshape'
## The following object is masked from 'package:dplyr':
##
##
       rename
## The following objects are masked from 'package:tidyr':
##
##
       expand, smiths
```

```
library(hexbin)
## Warning: package 'hexbin' was built under R version 4.4.2
library(data.table)
##
## Attaching package: 'data.table'
## The following object is masked from 'package:reshape':
##
##
       melt
## The following objects are masked from 'package:dplyr':
##
##
       between, first, last
library(formattable)
## Warning: package 'formattable' was built under R version 4.4.2
Load in the data
cancerReg <- read.csv("C:\\Users\\romin\\ToyRepo\\Models\\cancerReg.csv")</pre>
```

#### Remove Uncessary Data for Analysis

cancerReg <- cancerReg %>% select(-area\_type,-period,-type\_definition,-indicator, -upper\_confidence\_int
cancerReg

```
##
      area_code
                                  area_name year numerator measure
## 1
      S08000015
                       NHS Ayrshire & Arran 2003
                                                    2122.7
                                                             649.7
## 2
      S08000016
                                NHS Borders 2003
                                                   650.0
                                                             614.6
## 3
      S08000017
                    NHS Dumfries & Galloway 2003
                                                    916.0
                                                            620.5
## 4
      S08000019
                           NHS Forth Valley 2003
                                                    1504.7
                                                             651.8
## 5
      S08000020
                               NHS Grampian 2003
                                                    2651.7
                                                            617.8
## 6
      S08000022
                               NHS Highland 2003
                                                 1661.7
                                                            602.9
## 7
      S08000024
                                NHS Lothian 2003
                                                    3986.0
                                                            655.1
## 8
      S08000025
                                 NHS Orkney 2003
                                                   105.0
                                                            589.0
## 9
                               NHS Shetland 2003
                                                    109.0
      S08000026
                                                            616.0
## 10 S08000028
                          NHS Western Isles 2003
                                                    167.7
                                                            652.0
## 11 S08000029
                                   NHS Fife 2003
                                                    1832.3
                                                            611.4
## 12 S08000030
                                NHS Tayside 2003
                                                    2197.3
                                                            611.2
## 13 S08000031 NHS Greater Glasgow & Clyde 2003
                                                    6229.3
                                                            697.3
## 14 S08000032
                            NHS Lanarkshire 2003
                                                   3118.0
                                                            633.7
## 15 S08000015
                       NHS Ayrshire & Arran 2004
                                                    2150.0
                                                            642.8
## 16 S08000016
                                NHS Borders 2004
                                                             616.8
                                                     662.7
## 17 S08000017
                    NHS Dumfries & Galloway 2004
                                                    964.3
                                                            645.2
## 18 S08000019
                           NHS Forth Valley 2004
                                                    1520.7
                                                             648.2
## 19 S08000020
                               NHS Grampian 2004
                                                    2625.0
                                                            601.5
## 20 S08000022
                               NHS Highland 2004
                                                    1687.3
                                                            594.5
## 21 S08000024
                                NHS Lothian 2004
                                                    4059.0
                                                            660.8
## 22 S08000025
                                 NHS Orkney 2004
                                                    107.3
                                                             582.4
## 23 S08000026
                               NHS Shetland 2004
                                                    116.0
                                                             636.7
## 24 S08000028
                          NHS Western Isles 2004
                                                    165.3
                                                             628.1
                                   NHS Fife 2004 1862.3
## 25 S08000029
                                                            614.0
```

```
S08000030
                                   NHS Tayside 2004
                                                         2209.0
                                                                  607.3
## 27
       S08000031 NHS Greater Glasgow & Clyde 2004
                                                         6212.0
                                                                  693.9
##
       S08000032
                               NHS Lanarkshire 2004
                                                         3166.3
                                                                  632.7
##
  29
                         NHS Ayrshire & Arran 2005
                                                         2140.0
       S08000015
                                                                  631.6
##
   30
       S08000016
                                   NHS Borders 2005
                                                          694.3
                                                                  632.7
   31
##
       S08000017
                      NHS Dumfries & Galloway 2005
                                                          967.7
                                                                  639.4
                              NHS Forth Valley 2005
   32
       S08000019
                                                         1532.7
                                                                  642.8
## 33
       S08000020
                                  NHS Grampian 2005
                                                         2614.7
                                                                  589.7
##
   34
       S08000022
                                  NHS Highland 2005
                                                         1731.7
                                                                  598.9
##
  35
       S08000024
                                   NHS Lothian 2005
                                                         4102.0
                                                                  659.4
   36
       S08000025
                                    NHS Orkney 2005
                                                          110.0
                                                                  587.1
   37
##
       S08000026
                                  NHS Shetland 2005
                                                          105.0
                                                                  571.8
##
   38
       S08000028
                             NHS Western Isles 2005
                                                          164.7
                                                                  610.3
                                      NHS Fife 2005
                                                         1938.7
##
   39
       S08000029
                                                                  630.7
##
  40
                                                         2207.0
                                                                  600.6
       S08000030
                                   NHS Tayside 2005
## 41
       S08000031 NHS Greater Glasgow & Clyde 2005
                                                         6252.7
                                                                  695.0
##
   42
       S08000032
                               NHS Lanarkshire 2005
                                                         3264.7
                                                                  643.5
##
  43
       S08000015
                         NHS Ayrshire & Arran 2006
                                                         2143.7
                                                                  626.1
##
  44
       S08000016
                                   NHS Borders 2006
                                                         715.7
                                                                  641.5
##
  45
       S08000017
                      NHS Dumfries & Galloway 2006
                                                          990.7
                                                                  642.1
##
   46
       S08000019
                              NHS Forth Valley 2006
                                                         1497.7
                                                                  618.3
   47
                                  NHS Grampian 2006
                                                         2653.7
                                                                  586.6
       S08000020
                                  NHS Highland 2006
## 48
       S08000022
                                                         1812.3
                                                                  613.3
                                   NHS Lothian 2006
##
   49
       S08000024
                                                         4211.3
                                                                  666.1
## 50
       S08000025
                                    NHS Orkney 2006
                                                          113.7
                                                                  598.1
   51
       S08000026
                                  NHS Shetland 2006
                                                          107.3
                                                                  574.3
##
   52
                             NHS Western Isles 2006
                                                          182.3
                                                                  664.4
       S08000028
##
   53
       S08000029
                                      NHS Fife 2006
                                                         2001.3
                                                                  641.7
##
   54
                                   NHS Tayside 2006
       S08000030
                                                         2223.7
                                                                  596.0
   55
       S08000031 NHS Greater Glasgow & Clyde 2006
                                                         6233.7
                                                                  687.6
## 56
       S08000032
                               NHS Lanarkshire 2006
                                                         3301.0
                                                                  637.3
##
   57
       S08000015
                         NHS Ayrshire & Arran 2007
                                                         2204.7
                                                                  636.4
##
   58
       S08000016
                                   NHS Borders 2007
                                                          730.0
                                                                  643.5
##
  59
       S08000017
                      NHS Dumfries & Galloway 2007
                                                         963.7
                                                                  613.4
##
   60
                              NHS Forth Valley 2007
                                                         1552.3
                                                                  633.2
       S08000019
##
                                  NHS Grampian 2007
   61
       S08000020
                                                         2745.7
                                                                  595.9
   62
       S08000022
                                  NHS Highland 2007
                                                         1897.7
                                                                  627.4
## 63
                                   NHS Lothian 2007
                                                         4291.0
                                                                  668.7
       S08000024
##
  64
                                    NHS Orkney 2007
                                                                  587.4
       S08000025
                                                          113.3
##
  65
       S08000026
                                  NHS Shetland 2007
                                                          106.7
                                                                  562.6
   66
       S08000028
                             NHS Western Isles 2007
                                                         199.0
                                                                  707.2
##
  67
                                      NHS Fife 2007
                                                         2057.3
                                                                  648.9
       S08000029
##
   68
       S08000030
                                   NHS Tayside 2007
                                                         2340.7
                                                                  617.6
##
   69
       S08000031 NHS Greater Glasgow & Clyde 2007
                                                         6377.3
                                                                  698.1
   70
       S08000032
                               NHS Lanarkshire 2007
                                                         3378.3
                                                                  640.5
## 71
                                                                  648.2
       S08000015
                         NHS Ayrshire & Arran 2008
                                                         2283.0
##
   72
       S08000016
                                   NHS Borders 2008
                                                          725.0
                                                                  627.5
##
  73
       S08000017
                      NHS Dumfries & Galloway 2008
                                                          994.3
                                                                  619.8
##
  74
       S08000019
                              NHS Forth Valley 2008
                                                         1592.0
                                                                  638.9
##
  75
       S08000020
                                  NHS Grampian 2008
                                                         2847.0
                                                                  605.0
##
  76
                                  NHS Highland 2008
                                                         1951.3
       S08000022
                                                                  627.6
##
  77
       S08000024
                                   NHS Lothian 2008
                                                         4451.3
                                                                  683.4
## 78
       S08000025
                                    NHS Orkney 2008
                                                          119.0
                                                                  589.3
## 79
       S08000026
                                  NHS Shetland 2008
                                                          117.3
                                                                  594.9
```

```
## 80
       S08000028
                            NHS Western Isles 2008
                                                         209.3
                                                                 726.0
## 81
                                     NHS Fife 2008
                                                       2074.0
       S08000029
                                                                 643.9
## 82
       S08000030
                                  NHS Tayside 2008
                                                        2400.7
                                                                 621.1
##
  83
       S08000031 NHS Greater Glasgow & Clyde 2008
                                                        6556.0
                                                                 710.9
                                                                 649.8
##
   84
       S08000032
                              NHS Lanarkshire 2008
                                                        3491.7
##
   85
                         NHS Ayrshire & Arran 2009
       S08000015
                                                        2346.0
                                                                 652.2
                                  NHS Borders 2009
   86
       S08000016
                                                         751.3
                                                                 633.8
## 87
       S08000017
                      NHS Dumfries & Galloway 2009
                                                        993.3
                                                                 609.1
##
  88
       S08000019
                             NHS Forth Valley 2009
                                                       1644.3
                                                                 649.8
##
  89
       S08000020
                                 NHS Grampian 2009
                                                        2891.7
                                                                 605.4
  90
       S08000022
                                 NHS Highland 2009
                                                        1986.0
                                                                 625.8
## 91
                                  NHS Lothian 2009
                                                        4508.3
       S08000024
                                                                 681.6
##
  92
       S08000025
                                   NHS Orkney 2009
                                                         114.7
                                                                 543.0
## 93
       S08000026
                                 NHS Shetland 2009
                                                         119.3
                                                                 596.0
## 94
                            NHS Western Isles 2009
                                                         210.0
                                                                 715.0
       S08000028
## 95
       S08000029
                                      NHS Fife 2009
                                                        2108.0
                                                                 640.4
##
                                  NHS Tayside 2009
  96
       S08000030
                                                       2400.0
                                                                 613.7
       S08000031 NHS Greater Glasgow & Clyde 2009
                                                        6678.3
                                                                 715.4
## 98
                              NHS Lanarkshire 2009
                                                                 665.6
       S08000032
                                                       3629.0
## 99
       S08000015
                         NHS Ayrshire & Arran 2010
                                                        2352.7
                                                                 643.8
## 100 S08000016
                                  NHS Borders 2010
                                                        745.7
                                                                 614.8
## 101 S08000017
                      NHS Dumfries & Galloway 2010
                                                        1035.3
                                                                 628.9
## 102 S08000019
                             NHS Forth Valley 2010
                                                        1648.0
                                                                 634.1
                                 NHS Grampian 2010
                                                        2948.3
## 103 S08000020
                                                                 608.5
## 104 S08000022
                                 NHS Highland 2010
                                                       2020.7
                                                                 625.4
## 105 S08000024
                                  NHS Lothian 2010
                                                        4648.7
                                                                 691.8
## 106 S08000025
                                   NHS Orkney 2010
                                                         122.0
                                                                 569.2
## 107 S08000026
                                 NHS Shetland 2010
                                                         134.7
                                                                 663.4
## 108 S08000028
                            NHS Western Isles 2010
                                                         201.3
                                                                 674.4
## 109 S08000029
                                     NHS Fife 2010
                                                       2164.7
                                                                 650.0
## 110 S08000030
                                  NHS Tayside 2010
                                                        2391.7
                                                                 603.1
## 111 S08000031 NHS Greater Glasgow & Clyde 2010
                                                       6744.3
                                                                 714.4
## 112 S08000032
                              NHS Lanarkshire 2010
                                                       3728.7
                                                                 675.0
## 113 S08000015
                                                        2386.7
                                                                 643.2
                         NHS Ayrshire & Arran 2011
## 114 S08000016
                                   NHS Borders 2011
                                                        760.3
                                                                 614.5
## 115 S08000017
                      NHS Dumfries & Galloway 2011
                                                       1027.3
                                                                 617.6
## 116 S08000019
                             NHS Forth Valley 2011
                                                        1649.0
                                                                 620.3
## 117 S08000020
                                 NHS Grampian 2011
                                                       2987.3
                                                                 606.2
## 118 S08000022
                                 NHS Highland 2011
                                                        2023.3
                                                                 616.8
## 119 S08000024
                                  NHS Lothian 2011
                                                        4682.3
                                                                 684.3
## 120 S08000025
                                   NHS Orkney 2011
                                                         114.7
                                                                 531.3
## 121 S08000026
                                 NHS Shetland 2011
                                                         140.0
                                                                 685.6
## 122 S08000028
                            NHS Western Isles 2011
                                                        194.0
                                                                 646.0
## 123 S08000029
                                     NHS Fife 2011
                                                                 651.3
                                                        2211.7
## 124 S08000030
                                  NHS Tayside 2011
                                                        2428.7
                                                                 606.9
## 125 S08000031 NHS Greater Glasgow & Clyde 2011
                                                                 712.3
                                                       6818.0
## 126 S08000032
                              NHS Lanarkshire 2011
                                                       3815.7
                                                                 677.5
## 127 S08000015
                         NHS Ayrshire & Arran 2012
                                                        2459.7
                                                                 654.3
## 128 S08000016
                                  NHS Borders 2012
                                                        763.7
                                                                 608.5
## 129 S08000017
                      NHS Dumfries & Galloway 2012
                                                        1016.0
                                                                 602.7
                             NHS Forth Valley 2012
## 130 S08000019
                                                        1671.7
                                                                 617.3
## 131 S08000020
                                 NHS Grampian 2012
                                                       3045.0
                                                                 606.8
## 132 S08000022
                                 NHS Highland 2012
                                                        2053.0
                                                                 614.3
## 133 S08000024
                                  NHS Lothian 2012
                                                        4817.3
                                                                 691.6
```

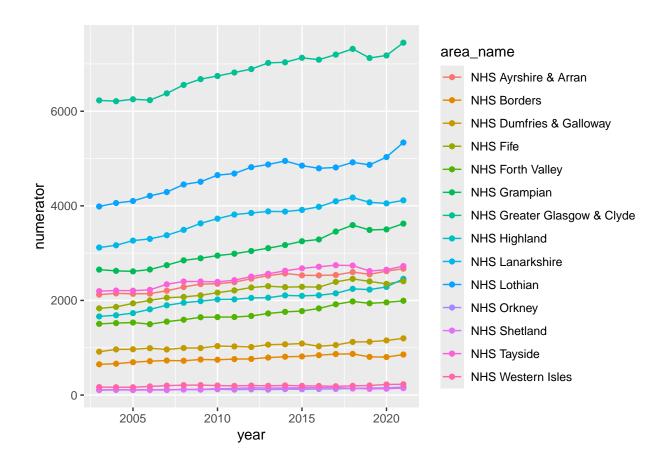
```
## 134 S08000025
                                   NHS Orkney 2012
                                                        121.3
                                                                 549.1
## 135 S08000026
                                 NHS Shetland 2012
                                                        154.0
                                                                 731.7
## 136 S08000028
                            NHS Western Isles 2012
                                                        200.7
                                                                 651.6
                                     NHS Fife 2012
## 137 S08000029
                                                       2273.3
                                                                 659.4
## 138 S08000030
                                  NHS Tayside 2012
                                                       2504.3
                                                                 616.1
## 139 S08000031 NHS Greater Glasgow & Clyde 2012
                                                       6891.0
                                                                 713.3
                              NHS Lanarkshire 2012
                                                       3849.0
## 140 S08000032
                                                                 672.7
## 141 S08000015
                         NHS Ayrshire & Arran 2013
                                                       2524.0
                                                                 659.6
## 142 S08000016
                                  NHS Borders 2013
                                                        791.7
                                                                 621.2
## 143 S08000017
                      NHS Dumfries & Galloway 2013
                                                       1064.7
                                                                 619.9
## 144 S08000019
                             NHS Forth Valley 2013
                                                       1725.0
                                                                 626.7
## 145 S08000020
                                 NHS Grampian 2013
                                                       3104.7
                                                                 607.1
## 146 S08000022
                                 NHS Highland 2013
                                                       2057.7
                                                                 604.8
## 147 S08000024
                                  NHS Lothian 2013
                                                       4873.3
                                                                 686.7
## 148 S08000025
                                   NHS Orkney 2013
                                                        114.7
                                                                 496.1
## 149 S08000026
                                 NHS Shetland 2013
                                                        148.0
                                                                 689.3
## 150 S08000028
                            NHS Western Isles 2013
                                                                 626.6
                                                        194.7
## 151 S08000029
                                     NHS Fife 2013
                                                       2301.3
                                                                 654.5
## 152 S08000030
                                  NHS Tayside 2013
                                                       2563.0
                                                                 622.6
## 153 S08000031 NHS Greater Glasgow & Clyde 2013
                                                       7021.3
                                                                 718.2
## 154 S08000032
                              NHS Lanarkshire 2013
                                                       3881.7
                                                                 666.5
## 155 S08000015
                         NHS Ayrshire & Arran 2014
                                                       2571.0
                                                                 662.1
## 156 S08000016
                                  NHS Borders 2014
                                                        810.0
                                                                 625.5
                      NHS Dumfries & Galloway 2014
                                                       1073.0
## 157 S08000017
                                                                 616.1
## 158 S08000019
                             NHS Forth Valley 2014
                                                       1758.3
                                                                 630.4
## 159 S08000020
                                 NHS Grampian 2014
                                                       3170.7
                                                                 610.3
## 160 S08000022
                                 NHS Highland 2014
                                                       2106.7
                                                                 612.2
                                  NHS Lothian 2014
## 161 S08000024
                                                       4948.7
                                                                 684.5
## 162 S08000025
                                   NHS Orkney 2014
                                                        124.7
                                                                 529.1
## 163 S08000026
                                 NHS Shetland 2014
                                                        149.7
                                                                 683.1
## 164 S08000028
                            NHS Western Isles 2014
                                                        202.7
                                                                 641.8
## 165 S08000029
                                     NHS Fife 2014
                                                       2281.3
                                                                 638.3
## 166 S08000030
                                  NHS Tayside 2014
                                                       2626.3
                                                                 627.8
                                                       7034.3
## 167 S08000031 NHS Greater Glasgow & Clyde 2014
                                                                 712.0
## 168 S08000032
                              NHS Lanarkshire 2014
                                                       3878.3
                                                                 654.8
                                                                 643.4
## 169 S08000015
                         NHS Ayrshire & Arran 2015
                                                       2531.0
## 170 S08000016
                                  NHS Borders 2015
                                                        816.0
                                                                 618.9
## 171 S08000017
                      NHS Dumfries & Galloway 2015
                                                       1088.7
                                                                 617.9
## 172 S08000019
                             NHS Forth Valley 2015
                                                       1775.0
                                                                 628.9
## 173 S08000020
                                 NHS Grampian 2015
                                                       3251.3
                                                                 617.1
## 174 S08000022
                                 NHS Highland 2015
                                                       2097.0
                                                                 602.4
## 175 S08000024
                                  NHS Lothian 2015
                                                       4850.0
                                                                 659.9
## 176 S08000025
                                   NHS Orkney 2015
                                                        122.3
                                                                 508.0
## 177 S08000026
                                 NHS Shetland 2015
                                                        155.3
                                                                 693.4
## 178 S08000028
                            NHS Western Isles 2015
                                                        194.7
                                                                 614.6
## 179 S08000029
                                     NHS Fife 2015
                                                       2288.3
                                                                 628.3
## 180 S08000030
                                  NHS Tayside 2015
                                                       2678.3
                                                                 632.1
## 181 S08000031 NHS Greater Glasgow & Clyde 2015
                                                       7129.7
                                                                 711.5
## 182 S08000032
                              NHS Lanarkshire 2015
                                                       3914.0
                                                                 649.1
## 183 S08000015
                         NHS Ayrshire & Arran 2016
                                                       2529.0
                                                                 633.9
## 184 S08000016
                                  NHS Borders 2016
                                                        842.3
                                                                 628.1
## 185 S08000017
                      NHS Dumfries & Galloway 2016
                                                       1030.7
                                                                 580.9
## 186 S08000019
                             NHS Forth Valley 2016
                                                       1830.7
                                                                 638.2
                                 NHS Grampian 2016
## 187 S08000020
                                                       3289.0
                                                                 614.8
```

```
NHS Highland 2016
## 188 S08000022
                                                       2108.7
                                                                597.5
                                NHS Lothian 2016
## 189 S08000024
                                                       4793.0
                                                                641.4
                                 NHS Orkney 2016
## 190 S08000025
                                                        127.7
                                                                521.7
## 191 S08000026
                                 NHS Shetland 2016
                                                        158.0
                                                                697.4
## 192 S08000028
                            NHS Western Isles 2016
                                                        191.3
                                                                598.1
## 193 S08000029
                                     NHS Fife 2016
                                                       2281.7
                                                                617.1
                                  NHS Tayside 2016
## 194 S08000030
                                                       2711.7
                                                                631.2
## 195 S08000031 NHS Greater Glasgow & Clyde 2016
                                                       7088.7
                                                                699.3
## 196 S08000032
                              NHS Lanarkshire 2016
                                                       3979.3
                                                                650.3
## 197 S08000015
                         NHS Ayrshire & Arran 2017
                                                       2537.3
                                                                627.2
## 198 S08000016
                                  NHS Borders 2017
                                                        867.0
                                                                638.1
## 199 S08000017
                     NHS Dumfries & Galloway 2017
                                                                588.7
                                                       1057.0
## 200 S08000019
                             NHS Forth Valley 2017
                                                       1918.0
                                                                657.4
## 201 S08000020
                                 NHS Grampian 2017
                                                       3456.0
                                                                637.4
## 202 S08000022
                                 NHS Highland 2017
                                                       2150.0
                                                                598.8
## 203 S08000024
                                  NHS Lothian 2017
                                                       4811.3
                                                                632.7
## 204 S08000025
                                   NHS Orkney 2017
                                                        129.7
                                                                516.3
## 205 S08000026
                                 NHS Shetland 2017
                                                        160.3
                                                                696.2
## 206 S08000028
                            NHS Western Isles 2017
                                                                573.3
                                                        185.7
## 207 S08000029
                                     NHS Fife 2017
                                                       2391.3
                                                                637.5
                                  NHS Tayside 2017
## 208 S08000030
                                                       2744.3
                                                                632.1
## 209 S08000031 NHS Greater Glasgow & Clyde 2017
                                                       7196.7
                                                                700.2
## 210 S08000032
                              NHS Lanarkshire 2017
                                                       4096.7
                                                                659.8
                        NHS Ayrshire & Arran 2018
                                                       2598.7
## 211 S08000015
                                                                632.8
## 212 S08000016
                                  NHS Borders 2018
                                                        869.3
                                                                629.3
                     NHS Dumfries & Galloway 2018
## 213 S08000017
                                                       1123.0
                                                                618.5
## 214 S08000019
                             NHS Forth Valley 2018
                                                       1978.7
                                                                664.7
                                 NHS Grampian 2018
                                                       3592.3
## 215 S08000020
                                                                651.1
## 216 S08000022
                                 NHS Highland 2018
                                                       2245.0
                                                                613.4
## 217 S08000024
                                  NHS Lothian 2018
                                                       4919.0
                                                                635.3
## 218 S08000025
                                   NHS Orkney 2018
                                                        139.7
                                                                550.7
## 219 S08000026
                                 NHS Shetland 2018
                                                        141.0
                                                                610.8
## 220 S08000028
                            NHS Western Isles 2018
                                                        193.7
                                                                588.7
                                                                645.9
## 221 S08000029
                                     NHS Fife 2018
                                                       2455.7
## 222 S08000030
                                  NHS Tayside 2018
                                                       2737.3
                                                                623.9
## 223 S08000031 NHS Greater Glasgow & Clyde 2018
                                                                702.0
                                                       7317.0
## 224 S08000032
                              NHS Lanarkshire 2018
                                                       4174.3
                                                                661.0
## 225 S08000015
                         NHS Ayrshire & Arran 2019
                                                       2552.7
                                                                616.0
## 226 S08000016
                                  NHS Borders 2019
                                                        807.0
                                                                575.6
                     NHS Dumfries & Galloway 2019
## 227 S08000017
                                                       1126.3
                                                                611.7
## 228 S08000019
                            NHS Forth Valley 2019
                                                       1939.0
                                                                643.7
## 229 S08000020
                                 NHS Grampian 2019
                                                       3490.3
                                                                623.3
                                 NHS Highland 2019
                                                       2229.3
## 230 S08000022
                                                                600.8
                                                       4866.0
## 231 S08000024
                                  NHS Lothian 2019
                                                                617.5
## 232 S08000025
                                   NHS Orkney 2019
                                                        148.3
                                                                575.9
## 233 S08000026
                                 NHS Shetland 2019
                                                        130.3
                                                                548.4
## 234 S08000028
                            NHS Western Isles 2019
                                                        202.0
                                                                609.0
## 235 S08000029
                                     NHS Fife 2019
                                                       2402.3
                                                                623.1
## 236 S08000030
                                  NHS Tayside 2019
                                                       2621.3
                                                                592.0
## 237 S08000031 NHS Greater Glasgow & Clyde 2019
                                                       7125.3
                                                                674.8
## 238 S08000032
                              NHS Lanarkshire 2019
                                                       4073.3
                                                                635.4
## 239 S08000015
                         NHS Ayrshire & Arran 2020
                                                       2619.0
                                                                625.5
## 240 S08000016
                                  NHS Borders 2020
                                                        803.3
                                                                560.1
## 241 S08000017
                     NHS Dumfries & Galloway 2020
                                                       1154.7
                                                                621.7
```

```
## 242 S08000019
                           NHS Forth Valley 2020
                                                    1958.7
                                                             642.4
                               NHS Grampian 2020
## 243 S08000020
                                                    3501.3
                                                             614.9
## 244 S08000022
                               NHS Highland 2020
                                                  2285.7
                                                             604.9
## 245 S08000024
                               NHS Lothian 2020
                                                    5030.7
                                                             628.9
## 246 S08000025
                                 NHS Orkney 2020
                                                    152.3
                                                             586.6
## 247 S08000026
                               NHS Shetland 2020
                                                     133.7
                                                             551.9
## 248 S08000028
                          NHS Western Isles 2020
                                                    223.0
                                                             665.8
## 249 S08000029
                                   NHS Fife 2020
                                                    2350.3
                                                             602.0
## 250 S08000030
                                NHS Tayside 2020
                                                    2649.0
                                                             590.5
## 251 S08000031 NHS Greater Glasgow & Clyde 2020
                                                   7178.7
                                                             673.5
## 252 S08000032
                            NHS Lanarkshire 2020
                                                    4052.3
                                                            624.1
## 253 S08000015
                       NHS Ayrshire & Arran 2021
                                                    2672.0
                                                               NA
## 254 S08000016
                                NHS Borders 2021
                                                    856.0
                                                                NA
## 255 S08000017
                    NHS Dumfries & Galloway 2021
                                                   1198.0
                                                                NA
## 256 S08000019
                           NHS Forth Valley 2021
                                                   1993.0
                                                                NA
## 257 S08000020
                               NHS Grampian 2021
                                                    3623.0
                                                                NA
## 258 S08000022
                               NHS Highland 2021
                                                    2457.0
                                                                NA
## 259 S08000024
                               NHS Lothian 2021
                                                                NA
                                                    5338.0
## 260 S08000025
                                NHS Orkney 2021
                                                    167.0
                                                                NA
## 261 S08000026
                               NHS Shetland 2021
                                                     147.0
                                                                NA
## 262 S08000028
                          NHS Western Isles 2021
                                                     228.0
                                                                NA
## 263 S08000029
                                   NHS Fife 2021
                                                    2406.0
                                                               NA
## 264 S08000030
                                NHS Tayside 2021
                                                    2726.0
                                                               NA
## 265 S08000031 NHS Greater Glasgow & Clyde 2021
                                                    7449.0
                                                                NA
## 266 S08000032
                            NHS Lanarkshire 2021
                                                                NA
                                                    4116.0
```

## Display Summary of All Data

```
ggplot(cancerReg,aes(x=year, y= numerator, col=area name)) + geom line() + geom point()
```



### Summary Table of Data Within Graph

```
customGreen0 = "#DeF7E9"

customGreen = "#71CA97"

customRed = "#ff7f7f"

healthBoard <- cancerReg %>%
    filter(area_name %in% c(
        "NHS Ayrshire & Arran", "NHS Borders", "NHS Dumfries & Galloway",
        "NHS Forth Valley", "NHS Grampian", "NHS Highland",
        "NHS Lothian", "NHS Orkney", "NHS Shetland",
        "NHS Western Isles"
    )) %>%
    filter(year %in% 2003:2021)
```

```
##
       area_code
                               area_name year numerator measure
## 1
       S08000015
                    NHS Ayrshire & Arran 2003
                                                  2122.7
                                                           649.7
## 2
       S08000016
                             NHS Borders 2003
                                                   650.0
                                                           614.6
## 3
       S08000017 NHS Dumfries & Galloway 2003
                                                   916.0
                                                           620.5
## 4
       S08000019
                        NHS Forth Valley 2003
                                                  1504.7
                                                           651.8
## 5
       S08000020
                            NHS Grampian 2003
                                                  2651.7
                                                           617.8
```

```
## 6
       S08000022
                              NHS Highland 2003
                                                    1661.7
                                                              602.9
## 7
                              NHS Lothian 2003
       S08000024
                                                    3986.0
                                                              655.1
## 8
       S08000025
                                NHS Orkney 2003
                                                     105.0
                                                              589.0
## 9
       S08000026
                              NHS Shetland 2003
                                                     109.0
                                                              616.0
## 10
       S08000028
                        NHS Western Isles 2003
                                                     167.7
                                                              652.0
## 11
                     NHS Ayrshire & Arran 2004
       S08000015
                                                    2150.0
                                                              642.8
                              NHS Borders 2004
## 12
       S08000016
                                                     662.7
                                                              616.8
## 13
       S08000017 NHS Dumfries & Galloway 2004
                                                     964.3
                                                              645.2
  14
       S08000019
                         NHS Forth Valley 2004
                                                    1520.7
                                                              648.2
## 15
       S08000020
                              NHS Grampian 2004
                                                    2625.0
                                                              601.5
                              NHS Highland 2004
  16
       S08000022
                                                    1687.3
                                                              594.5
##
                              NHS Lothian 2004
                                                    4059.0
  17
       S08000024
                                                              660.8
##
   18
       S08000025
                                NHS Orkney 2004
                                                     107.3
                                                              582.4
##
                              NHS Shetland 2004
  19
       S08000026
                                                     116.0
                                                              636.7
## 20
                                                     165.3
       S08000028
                        NHS Western Isles 2004
                                                              628.1
## 21
       S08000015
                     NHS Ayrshire & Arran 2005
                                                    2140.0
                                                              631.6
##
                                                     694.3
  22
       S08000016
                               NHS Borders 2005
                                                              632.7
##
       S08000017 NHS Dumfries & Galloway 2005
                                                     967.7
                                                              639.4
##
                         NHS Forth Valley 2005
                                                    1532.7
  24
       S08000019
                                                              642.8
##
  25
       S08000020
                              NHS Grampian 2005
                                                    2614.7
                                                              589.7
##
  26
       S08000022
                              NHS Highland 2005
                                                    1731.7
                                                              598.9
  27
       S08000024
                              NHS Lothian 2005
                                                    4102.0
                                                              659.4
## 28
                                NHS Orkney 2005
                                                     110.0
       S08000025
                                                              587.1
  29
                              NHS Shetland 2005
##
       S08000026
                                                     105.0
                                                              571.8
##
  30
       S08000028
                        NHS Western Isles 2005
                                                     164.7
                                                              610.3
   31
       S08000015
                     NHS Ayrshire & Arran 2006
                                                    2143.7
                                                              626.1
##
  32
                              NHS Borders 2006
                                                     715.7
                                                              641.5
       S08000016
##
   33
       S08000017 NHS Dumfries & Galloway 2006
                                                     990.7
                                                              642.1
##
   34
                         NHS Forth Valley 2006
       S08000019
                                                    1497.7
                                                              618.3
##
   35
       S08000020
                              NHS Grampian 2006
                                                    2653.7
                                                              586.6
##
  36
       S08000022
                              NHS Highland 2006
                                                    1812.3
                                                              613.3
##
   37
       S08000024
                              NHS Lothian 2006
                                                    4211.3
                                                              666.1
##
   38
       S08000025
                                NHS Orkney 2006
                                                     113.7
                                                              598.1
##
  39
       S08000026
                              NHS Shetland 2006
                                                     107.3
                                                              574.3
##
   40
       S08000028
                        NHS Western Isles 2006
                                                     182.3
                                                              664.4
##
  41
                     NHS Ayrshire & Arran 2007
       S08000015
                                                    2204.7
                                                              636.4
## 42
       S08000016
                               NHS Borders 2007
                                                     730.0
                                                              643.5
## 43
       S08000017 NHS Dumfries & Galloway 2007
                                                     963.7
                                                              613.4
## 44
                         NHS Forth Valley 2007
                                                    1552.3
                                                              633.2
       S08000019
##
  45
                              NHS Grampian 2007
       S08000020
                                                    2745.7
                                                              595.9
                              NHS Highland 2007
   46
       S08000022
                                                    1897.7
                                                              627.4
##
  47
                              NHS Lothian 2007
                                                    4291.0
                                                              668.7
       S08000024
##
   48
       S08000025
                                NHS Orkney 2007
                                                     113.3
                                                              587.4
##
   49
       S08000026
                              NHS Shetland 2007
                                                     106.7
                                                              562.6
## 50
       S08000028
                        NHS Western Isles 2007
                                                     199.0
                                                              707.2
## 51
                     NHS Ayrshire & Arran 2008
                                                    2283.0
                                                              648.2
       S08000015
##
  52
       S08000016
                               NHS Borders 2008
                                                     725.0
                                                              627.5
## 53
       S08000017 NHS Dumfries & Galloway 2008
                                                     994.3
                                                              619.8
                                                              638.9
##
  54
       S08000019
                         NHS Forth Valley 2008
                                                    1592.0
## 55
       S08000020
                              NHS Grampian 2008
                                                    2847.0
                                                              605.0
##
  56
                              NHS Highland 2008
                                                    1951.3
       S08000022
                                                              627.6
## 57
                              NHS Lothian 2008
       S08000024
                                                    4451.3
                                                              683.4
## 58
       S08000025
                                NHS Orkney 2008
                                                     119.0
                                                              589.3
## 59
       S08000026
                              NHS Shetland 2008
                                                     117.3
                                                              594.9
```

```
## 60
       S08000028
                        NHS Western Isles 2008
                                                     209.3
                                                             726.0
## 61
                     NHS Ayrshire & Arran 2009
                                                    2346.0
                                                             652.2
       S08000015
                              NHS Borders 2009
##
  62
       S08000016
                                                     751.3
                                                             633.8
##
  63
       S08000017 NHS Dumfries & Galloway 2009
                                                     993.3
                                                             609.1
##
   64
       S08000019
                         NHS Forth Valley 2009
                                                    1644.3
                                                             649.8
   65
                             NHS Grampian 2009
                                                    2891.7
##
       S08000020
                                                             605.4
                             NHS Highland 2009
   66
       S08000022
                                                    1986.0
                                                             625.8
                              NHS Lothian 2009
## 67
       S08000024
                                                    4508.3
                                                             681.6
##
   68
       S08000025
                               NHS Orkney 2009
                                                     114.7
                                                             543.0
##
   69
       S08000026
                             NHS Shetland 2009
                                                     119.3
                                                             596.0
   70
       S08000028
                        NHS Western Isles 2009
                                                     210.0
                                                             715.0
##
  71
                                                    2352.7
       S08000015
                     NHS Ayrshire & Arran 2010
                                                             643.8
##
   72
       S08000016
                              NHS Borders 2010
                                                     745.7
                                                             614.8
##
  73
                                                             628.9
       S08000017 NHS Dumfries & Galloway 2010
                                                    1035.3
## 74
                         NHS Forth Valley 2010
                                                    1648.0
       S08000019
                                                             634.1
## 75
       S08000020
                             NHS Grampian 2010
                                                    2948.3
                                                             608.5
##
  76
                             NHS Highland 2010
                                                    2020.7
       S08000022
                                                             625.4
##
  77
       S08000024
                              NHS Lothian 2010
                                                    4648.7
                                                             691.8
##
                               NHS Orkney 2010
  78
       S08000025
                                                     122.0
                                                             569.2
##
  79
       S08000026
                             NHS Shetland 2010
                                                     134.7
                                                             663.4
##
  80
       S08000028
                        NHS Western Isles 2010
                                                     201.3
                                                             674.4
  81
       S08000015
                     NHS Ayrshire & Arran 2011
                                                    2386.7
                                                             643.2
## 82
                              NHS Borders 2011
                                                     760.3
                                                             614.5
       S08000016
  83
       S08000017 NHS Dumfries & Galloway 2011
                                                    1027.3
                                                             617.6
##
## 84
                         NHS Forth Valley 2011
       S08000019
                                                    1649.0
                                                             620.3
   85
       S08000020
                             NHS Grampian 2011
                                                    2987.3
                                                             606.2
##
  86
       S08000022
                             NHS Highland 2011
                                                    2023.3
                                                             616.8
##
   87
       S08000024
                              NHS Lothian 2011
                                                    4682.3
                                                             684.3
##
   88
                               NHS Orkney 2011
                                                     114.7
       S08000025
                                                             531.3
   89
       S08000026
                             NHS Shetland 2011
                                                     140.0
                                                             685.6
## 90
       S08000028
                        NHS Western Isles 2011
                                                     194.0
                                                             646.0
##
  91
       S08000015
                     NHS Ayrshire & Arran 2012
                                                    2459.7
                                                             654.3
##
   92
       S08000016
                              NHS Borders 2012
                                                     763.7
                                                             608.5
## 93
       S08000017 NHS Dumfries & Galloway 2012
                                                    1016.0
                                                             602.7
##
  94
       S08000019
                         NHS Forth Valley 2012
                                                    1671.7
                                                             617.3
##
  95
                             NHS Grampian 2012
                                                    3045.0
       S08000020
                                                             606.8
  96
       S08000022
                             NHS Highland 2012
                                                    2053.0
                                                             614.3
## 97
       S08000024
                              NHS Lothian 2012
                                                    4817.3
                                                             691.6
## 98
       S08000025
                               NHS Orkney 2012
                                                     121.3
                                                             549.1
                                                     154.0
## 99
                             NHS Shetland 2012
       S08000026
                                                             731.7
                        NHS Western Isles 2012
  100 S08000028
                                                     200.7
                                                             651.6
## 101 S08000015
                     NHS Ayrshire & Arran 2013
                                                    2524.0
                                                             659.6
## 102 S08000016
                              NHS Borders 2013
                                                     791.7
                                                             621.2
## 103 S08000017 NHS Dumfries & Galloway 2013
                                                    1064.7
                                                             619.9
## 104 S08000019
                         NHS Forth Valley 2013
                                                    1725.0
                                                             626.7
## 105 S08000020
                             NHS Grampian 2013
                                                    3104.7
                                                             607.1
## 106 S08000022
                             NHS Highland 2013
                                                    2057.7
                                                             604.8
                              NHS Lothian 2013
## 107 S08000024
                                                    4873.3
                                                             686.7
## 108 S08000025
                               NHS Orkney 2013
                                                     114.7
                                                             496.1
## 109 S08000026
                             NHS Shetland 2013
                                                     148.0
                                                             689.3
## 110 S08000028
                        NHS Western Isles 2013
                                                     194.7
                                                             626.6
## 111 S08000015
                     NHS Ayrshire & Arran 2014
                                                    2571.0
                                                             662.1
## 112 S08000016
                              NHS Borders 2014
                                                     810.0
                                                             625.5
## 113 S08000017 NHS Dumfries & Galloway 2014
                                                    1073.0
                                                             616.1
```

```
## 114 S08000019
                         NHS Forth Valley 2014
                                                   1758.3
                                                             630.4
## 115 S08000020
                             NHS Grampian 2014
                                                   3170.7
                                                             610.3
                             NHS Highland 2014
## 116 S08000022
                                                   2106.7
                                                             612.2
## 117 S08000024
                              NHS Lothian 2014
                                                   4948.7
                                                             684.5
## 118 S08000025
                               NHS Orkney 2014
                                                    124.7
                                                             529.1
## 119 S08000026
                                                    149.7
                             NHS Shetland 2014
                                                             683.1
                        NHS Western Isles 2014
## 120 S08000028
                                                    202.7
                                                             641.8
## 121 S08000015
                    NHS Ayrshire & Arran 2015
                                                   2531.0
                                                             643.4
## 122 S08000016
                              NHS Borders 2015
                                                    816.0
                                                             618.9
## 123 S08000017 NHS Dumfries & Galloway 2015
                                                   1088.7
                                                             617.9
## 124 S08000019
                         NHS Forth Valley 2015
                                                   1775.0
                                                             628.9
## 125 S08000020
                             NHS Grampian 2015
                                                   3251.3
                                                             617.1
## 126 S08000022
                             NHS Highland 2015
                                                   2097.0
                                                             602.4
## 127 S08000024
                              NHS Lothian 2015
                                                   4850.0
                                                             659.9
## 128 S08000025
                               NHS Orkney 2015
                                                    122.3
                                                             508.0
                                                    155.3
## 129 S08000026
                             NHS Shetland 2015
                                                             693.4
## 130 S08000028
                                                    194.7
                        NHS Western Isles 2015
                                                             614.6
## 131 S08000015
                    NHS Ayrshire & Arran 2016
                                                   2529.0
                                                             633.9
## 132 S08000016
                              NHS Borders 2016
                                                    842.3
                                                             628.1
## 133 S08000017 NHS Dumfries & Galloway 2016
                                                   1030.7
                                                             580.9
## 134 S08000019
                         NHS Forth Valley 2016
                                                   1830.7
                                                             638.2
## 135 S08000020
                             NHS Grampian 2016
                                                   3289.0
                                                             614.8
## 136 S08000022
                             NHS Highland 2016
                                                   2108.7
                                                             597.5
                              NHS Lothian 2016
                                                   4793.0
## 137 S08000024
                                                             641.4
## 138 S08000025
                               NHS Orkney 2016
                                                    127.7
                                                             521.7
## 139 S08000026
                             NHS Shetland 2016
                                                    158.0
                                                             697.4
## 140 S08000028
                       NHS Western Isles 2016
                                                    191.3
                                                             598.1
## 141 S08000015
                    NHS Ayrshire & Arran 2017
                                                   2537.3
                                                             627.2
## 142 S08000016
                                                    867.0
                              NHS Borders 2017
                                                             638.1
## 143 S08000017 NHS Dumfries & Galloway 2017
                                                   1057.0
                                                             588.7
                         NHS Forth Valley 2017
## 144 S08000019
                                                   1918.0
                                                             657.4
## 145 S08000020
                             NHS Grampian 2017
                                                   3456.0
                                                             637.4
## 146 S08000022
                             NHS Highland 2017
                                                   2150.0
                                                             598.8
                              NHS Lothian 2017
## 147 S08000024
                                                   4811.3
                                                             632.7
## 148 S08000025
                               NHS Orkney 2017
                                                    129.7
                                                             516.3
## 149 S08000026
                             NHS Shetland 2017
                                                    160.3
                                                             696.2
## 150 S08000028
                        NHS Western Isles 2017
                                                    185.7
                                                             573.3
## 151 S08000015
                    NHS Ayrshire & Arran 2018
                                                   2598.7
                                                             632.8
## 152 S08000016
                              NHS Borders 2018
                                                    869.3
                                                             629.3
## 153 S08000017 NHS Dumfries & Galloway 2018
                                                   1123.0
                                                             618.5
                         NHS Forth Valley 2018
## 154 S08000019
                                                   1978.7
                                                             664.7
## 155 S08000020
                             NHS Grampian 2018
                                                   3592.3
                                                             651.1
                             NHS Highland 2018
## 156 S08000022
                                                   2245.0
                                                             613.4
## 157 S08000024
                              NHS Lothian 2018
                                                   4919.0
                                                             635.3
## 158 S08000025
                               NHS Orkney 2018
                                                    139.7
                                                             550.7
## 159 S08000026
                             NHS Shetland 2018
                                                    141.0
                                                             610.8
## 160 S08000028
                        NHS Western Isles 2018
                                                    193.7
                                                             588.7
                    NHS Ayrshire & Arran 2019
## 161 S08000015
                                                   2552.7
                                                             616.0
## 162 S08000016
                              NHS Borders 2019
                                                    807.0
                                                             575.6
## 163 S08000017 NHS Dumfries & Galloway 2019
                                                   1126.3
                                                             611.7
## 164 S08000019
                         NHS Forth Valley 2019
                                                   1939.0
                                                             643.7
                                                   3490.3
## 165 S08000020
                             NHS Grampian 2019
                                                             623.3
## 166 S08000022
                             NHS Highland 2019
                                                   2229.3
                                                             600.8
                              NHS Lothian 2019
## 167 S08000024
                                                   4866.0
                                                             617.5
```

##	168	S08000025	NHS Orkney	2019	148.3	575.9
##	169	S08000026	NHS Shetland	2019	130.3	548.4
##	170	S08000028	NHS Western Isles	2019	202.0	609.0
##	171	S08000015	NHS Ayrshire & Arran	2020	2619.0	625.5
##	172	S08000016	NHS Borders	2020	803.3	560.1
##	173	S08000017	NHS Dumfries & Galloway	2020	1154.7	621.7
##	174	S08000019	NHS Forth Valley	2020	1958.7	642.4
##	175	S08000020	NHS Grampian	2020	3501.3	614.9
##	176	S08000022	NHS Highland	2020	2285.7	604.9
##	177	S08000024	NHS Lothian	2020	5030.7	628.9
##	178	\$08000025	NHS Orkney	2020	152.3	586.6
##	179	S08000026	NHS Shetland	2020	133.7	551.9
##	180	\$08000028	NHS Western Isles	2020	223.0	665.8
##	181	S08000015	NHS Ayrshire & Arran	2021	2672.0	NA
##	182	S08000016	NHS Borders	2021	856.0	NA
##	183	S08000017	NHS Dumfries & Galloway	2021	1198.0	NA
##	184	S08000019	NHS Forth Valley	2021	1993.0	NA
##	185	\$08000020	NHS Grampian	2021	3623.0	NA
##	186	S08000022	NHS Highland	2021	2457.0	NA
##	187	S08000024	NHS Lothian	2021	5338.0	NA
##	188	\$08000025	NHS Orkney	2021	167.0	NA
##	189	S08000026	NHS Shetland	2021	147.0	NA
##	190	S08000028	NHS Western Isles	2021	228.0	NA