

DS670 Capstone Project

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```
#Set Working Directory
setwd('C:/Users/Rhon/Desktop/Capstone/Weather_Data')

# Get the data
weather = read.csv("combinedata1.csv", header=TRUE)

View(weather)
```

```
str(weather)           #Structure of an object
```

```
## 'data.frame':    12563 obs. of  11 variables:
## $ DATE.TIME       : Factor w/ 12563 levels " 2014-02-13T00:00:00",...: 1 2 3 4 5 6 7 8 9 10 ...
## $ Date            : Factor w/ 177 levels " 2014-02-13",...: 1 1 1 1 1 1 1 1 1 1 ...
## $ time            : Factor w/ 77 levels "0:00:00","0:20:00",...: 1 2 3 4 5 6 39 40 41 54 ...
## $ tmpm_celsius    : int  4 4 4 4 4 4 3 3 3 3 ...
## $ tmpm_Fahrenheit: num  39.2 39.2 39.2 39.2 39.2 39.2 37.4 37.4 37.4 37.4 ...
## $ Dewptm         : int  0 0 0 0 0 0 0 1 1 1 ...
## $ hum            : int  66 75 75 65 75 75 73 87 87 84 ...
## $ Pressurem      : int  995 994 993 994 993 993 993 992 991 992 ...
## $ wdir           : int  160 160 160 160 170 170 160 160 160 150 ...
## $ wspdm          : num  18.5 20.4 22.2 24.1 22.2 22.2 22.2 18.5 20.4 20.4 ...
## $ vism           : num  29 10 10 30 10 10 7 10 10 8 ...
```

```
class(weather)         #Vlass or type of an object
```

```
## [1] "data.frame"
```

```
length(weather)        #Find how many vectors in the data set
```

```
## [1] 11
```

```
head(names(weather))   #Names of the columns
```

```
## [1] "DATE.TIME"          "Date"                "time"                "tmpm_celsius"
## [5] "tmpm_Fahrenheit"    "Dewptm"
```

```
dim(weather)           #Find the dimension of our data
```

```
## [1] 12563    11
```

```
##Find the Warmest day
```

```
Warmest.day <- max(weather$tmpm_Fahrenheit)
Warmest.day
```

```
## [1] 80.6
```

```
##Find the coldest day
```

```
coldest.day <- min(weather$tmpm_Fahrenheit)
coldest.day
```

```
## [1] 26.6
```

```
number <- dim((weather$tmpm_Fahrenheit) )
```

```
# Add classification to Y
```

```
library(ISLR)
attach(weather)
result1=(weather$tmpm_Fahrenheit)
Yresults=ifelse(result1>=65,"warm","cold")
```

```
# Add to the table the result of Yresults, if cold or warm
```

```
data1=data.frame(weather, Yresults)
```

```
View(data1)
```

```
# Split data into testing and training
```

```
set.seed(1)
train=sample(1: nrow(data1), nrow(data1)/2)
test=-train
```

```
training_data=data1[train,]
testing_data=data1[test,]
testing_Yresults=Yresults[test]
```

```
# Full Logistic Model using Temperature, Dew Point, Humidity, Pressure, and Wind Direction
```

```
logistic_model=glm(Yresults~tmpm_Fahrenheit+Dewptm+hum+Pressurem+wdir, data=data1, family=binomial)
logistic_model
```

```
##
```

```
## Call: glm(formula = Yresults ~ tmpm_Fahrenheit + Dewptm + hum + Pressurem +
```

```
## wdir, family = binomial, data = data1)
```

```
##
```

```
## Coefficients:
```

```
## (Intercept) tmpm_Fahrenheit Dewptm hum
## -1.426e+03 2.194e+01 -2.256e-02 5.211e-03
## Pressurem wdir
## -6.332e-03 -2.184e-04
```

```
##
```

```
## Degrees of Freedom: 12457 Total (i.e. Null); 12452 Residual
```

```
## (105 observations deleted due to missingness)
```

```
## Null Deviance: 8266
```

```
## Residual Deviance: 5.084e-06 AIC: 12
```

```
summary(logistic_model)
```

```
##
## Call:
## glm(formula = Yresults ~ tmpm_Fahrenheit + Dewptm + hum + Pressurem +
##       wdir, family = binomial, data = data1)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -7.538e-05 -2.100e-08 -2.100e-08 -2.100e-08  8.103e-05
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -1.426e+03  7.072e+04  -0.020   0.984
## tmpm_Fahrenheit  2.194e+01  4.553e+02   0.048   0.962
## Dewptm        -2.256e-02  3.201e+02   0.000   1.000
## hum           5.211e-03  7.466e+01   0.000   1.000
## Pressurem     -6.332e-03  6.169e+01   0.000   1.000
## wdir          -2.184e-04  4.268e+00   0.000   1.000
##
## (Dispersion parameter for binomial family taken to be 1)
##
## Null deviance: 8.2663e+03 on 12457 degrees of freedom
## Residual deviance: 5.0839e-06 on 12452 degrees of freedom
## (105 observations deleted due to missingness)
## AIC: 12
##
## Number of Fisher Scoring iterations: 25
```

```
# Predict Direction on testing data
```

```
logistic_prob=predict(logistic_model, testing_data, type="response")
summary(logistic_model)
```

```
##
## Call:
## glm(formula = Yresults ~ tmpm_Fahrenheit + Dewptm + hum + Pressurem +
##       wdir, family = binomial, data = data1)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -7.538e-05 -2.100e-08 -2.100e-08 -2.100e-08  8.103e-05
##
## Coefficients:
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)   -1.426e+03  7.072e+04  -0.020   0.984
## tmpm_Fahrenheit  2.194e+01  4.553e+02   0.048   0.962
## Dewptm        -2.256e-02  3.201e+02   0.000   1.000
## hum           5.211e-03  7.466e+01   0.000   1.000
## Pressurem     -6.332e-03  6.169e+01   0.000   1.000
## wdir          -2.184e-04  4.268e+00   0.000   1.000
##
## (Dispersion parameter for binomial family taken to be 1)
```

```
##
## Null deviance: 8.2663e+03 on 12457 degrees of freedom
## Residual deviance: 5.0839e-06 on 12452 degrees of freedom
## (105 observations deleted due to missingness)
## AIC: 12
##
## Number of Fisher Scoring iterations: 25
```

```
test_prob=predict(logistic_model, type="response")
test_prob[1:10]
```

```
##          1          2          3          4          5
## 2.220446e-16 2.220446e-16 2.220446e-16 2.220446e-16 2.220446e-16
##          6          7          8          9         10
## 2.220446e-16 2.220446e-16 2.220446e-16 2.220446e-16 2.220446e-16
```

```
# Create the Direction on testing data based on probability
logistic_pred=ifelse(logistic_prob>65, "warm", "cold")
logistic_pred
```

```
##      1      3      4      5      8      9     12     14     20     21
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##    22    25    27    31    35    39    42    43    44    46
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##    47    49    51    55    56    58    61    62    63    65
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##    68    69    73    74    75    77    78    79    80    81
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##    83    86    87    90    91    94    95   101   103   107
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   110   111   115   119   120   121   123   125   126   127
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   128   129   130   131   132   135   139   141   142   143
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   146   150   157   160   164   165   170   172   175   176
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   177   178   181   184   185   186   193   194   195   199
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   200   201   202   203   204   205   208   213   216   217
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   218   220   221   224   227   229   231   237   238   240
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   241   243   245   248   249   250   251   252   253   254
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   259   261   266   267   268   270   272   277   279   280
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   281   285   286   287   289   290   291   294   296   300
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   301   303   304   305   306   307   309   310   311   314
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   315   320   321   323   324   325   331   332   333   334
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##   337   338   340   345   347   350   352   356   357   360
```

```

## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      361      365      374      375      376      379      382      385      386      387
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      388      390      392      393      394      396      398      401      403      404
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      405      407      408      409      410      413      415      416      417      422
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      425      426      429      432      437      438      439      440      446      447
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      448      449      451      453      456      458      459      463      465      470
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      472      474      475      483      485      486      488      492      493      494
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      496      498      501      503      506      507      510      515      518      519
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      523      525      527      528      530      533      534      537      539      541
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      543      545      546      547      548      550      552      555      556      557
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      558      560      561      563      564      568      577      578      581      583
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      584      585      586      587      591      593      600      603      606      607
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      609      610      614      616      618      620      622      623      624      625
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      628      630      632      634      636      637      638      639      642      643
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      644      646      647      648      649      650      652      658      660      663
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      665      667      668      669      672      674      676      677      678      679
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      680      681      683      688      691      695      696      697      698      700
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      703      704      705      706      709      710      712      714      715      718
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      719      720      721      722      726      728      731      732      733      734
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      737      739      740      745      748      749      750      751      755      756
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      757      758      759      760      761      766      768      770      772      773
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      777      778      779      782      791      794      795      796      797      798
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      802      804      805      808      809      810      811      812      814      820
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      821      822      823      824      829      830      834      840      841      844
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      845      852      856      857      859      861      863      870      871      873
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      874      876      878      879      881      884      886      888      889      890
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      891      892      893      894      899      900      902      904      906      907
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      909      910      911      912      914      916      917      920      922      925

```

```

## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      926      928      929      931      932      935      936      937      939      940
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      942      945      946      947      950      951      953      954      955      956
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      957      963      965      967      968      969      971      972      973      974
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##      978      983      985      987      991      992      993      994      996      997
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1001     1002     1007     1010     1011     1012     1014     1017     1019     1020
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1021     1023     1025     1026     1029     1031     1032     1035     1037     1040
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1041     1043     1044     1045     1046     1047     1050     1051     1052     1055
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1056     1057     1061     1062     1064     1066     1069     1071     1072     1077
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1078     1080     1081     1082     1083     1084     1086     1089     1090     1092
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1093     1094     1095     1097     1098     1099     1101     1104     1106     1109
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1110     1111     1112     1114     1116     1117     1118     1119     1120     1123
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1124     1125     1126     1127     1128     1133     1135     1138     1139     1140
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1141     1144     1145     1146     1147     1148     1149     1151     1152     1153
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1154     1156     1157     1158     1166     1169     1172     1173     1174     1176
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1181     1182     1183     1186     1187     1189     1192     1193     1194     1195
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1196     1198     1200     1201     1202     1204     1205     1206     1207     1209
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1212     1213     1214     1215     1218     1221     1222     1223     1225     1226
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1229     1234     1235     1236     1242     1243     1244     1250     1251     1252
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1253     1255     1257     1259     1261     1262     1263     1265     1268     1270
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1271     1272     1273     1274     1279     1280     1282     1284     1286     1287
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1289     1290     1291     1294     1295     1296     1297     1298     1300     1302
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1305     1309     1312     1315     1316     1318     1319     1320     1321     1322
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1323     1324     1326     1333     1336     1337     1338     1342     1343     1344
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1345     1347     1349     1350     1352     1354     1355     1356     1357     1358
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1359     1360     1362     1363     1366     1367     1370     1371     1372     1373
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1374     1375     1379     1380     1381     1384     1385     1388     1389     1390
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
##     1394     1397     1398     1400     1402     1403     1404     1407     1411     1413

```

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1415	1417	1418	1420	1421	1422	1423	1425	1428	1429
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1430	1431	1432	1433	1440	1444	1445	1447	1448	1450
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1451	1454	1456	1457	1461	1462	1463	1464	1467	1470
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1477	1478	1480	1482	1484	1485	1487	1488	1489	1490
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1491	1492	1493	1494	1497	1502	1503	1504	1506	1508
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1509	1510	1512	1514	1515	1516	1517	1518	1521	1522
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1527	1529	1530	1532	1535	1536	1537	1538	1540	1543
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1544	1545	1547	1551	1554	1555	1557	1558	1560	1563
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1565	1568	1569	1570	1571	1572	1574	1576	1579	1580
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1583	1584	1587	1588	1591	1592	1593	1600	1601	1602
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1605	1606	1607	1609	1610	1611	1614	1615	1616	1625
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1628	1631	1632	1633	1636	1638	1639	1641	1643	1645
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1646	1647	1650	1651	1653	1654	1655	1658	1659	1660
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1661	1662	1664	1666	1669	1670	1672	1674	1675	1676
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1677	1681	1683	1684	1686	1687	1688	1689	1692	1694
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1695	1696	1698	1700	1701	1702	1704	1707	1708	1710
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1711	1712	1713	1714	1716	1718	1722	1723	1724	1728
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1729	1732	1734	1735	1738	1740	1742	1744	1746	1747
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1748	1752	1753	1754	1755	1758	1761	1763	1764	1766
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1767	1774	1775	1776	1778	1780	1783	1784	1785	1787
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1789	1791	1793	1795	1796	1798	1800	1802	1804	1808
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1811	1813	1815	1816	1817	1819	1821	1822	1824	1825
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1827	1828	1830	1832	1833	1834	1837	1840	1841	1842
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1844	1845	1850	1852	1853	1855	1858	1859	1860	1861
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1862	1866	1867	1869	1872	1875	1881	1883	1884	1886
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1887	1890	1892	1904	1905	1906	1907	1908	1909	1911
##	"cold"	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1914	1917	1919	1920	1922	1923	1925	1929	1934	1936

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1941	1943	1944	1950	1952	1954	1956	1958	1959	1960
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1962	1964	1965	1967	1968	1971	1972	1974	1975	1976
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1977	1978	1979	1981	1983	1987	1988	1989	1993	1994
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	1996	1998	1999	2002	2003	2005	2007	2008	2011	2014
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2017	2019	2022	2026	2028	2029	2031	2032	2033	2035
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2037	2040	2041	2045	2047	2048	2049	2050	2051	2053
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2056	2059	2060	2061	2063	2064	2069	2072	2073	2082
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2086	2087	2091	2093	2097	2101	2102	2104	2106	2109
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2112	2113	2114	2115	2116	2118	2119	2120	2121	2122
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2123	2125	2126	2127	2128	2131	2132	2134	2135	2137
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2138	2139	2141	2143	2144	2145	2159	2163	2164	2165
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2168	2169	2172	2173	2178	2180	2181	2182	2184	2185
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2187	2193	2195	2196	2201	2203	2205	2207	2209	2210
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2214	2216	2218	2219	2224	2226	2228	2231	2232	2233
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2234	2238	2239	2242	2244	2246	2248	2250	2252	2253
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2254	2255	2256	2258	2261	2262	2265	2268	2270	2272
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2274	2276	2277	2278	2280	2281	2282	2284	2285	2287
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2288	2293	2294	2297	2299	2301	2302	2304	2305	2311
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2312	2313	2315	2316	2317	2320	2322	2323	2324	2325
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2329	2330	2331	2335	2337	2338	2340	2343	2345	2346
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2347	2349	2350	2351	2352	2355	2356	2359	2360	2361
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2363	2365	2366	2367	2368	2372	2377	2378	2379	2380
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2382	2383	2384	2385	2387	2388	2389	2391	2393	2394
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2395	2396	2397	2399	2400	2401	2402	2403	2406	2407
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2409	2410	2411	2412	2415	2420	2421	2423	2424	2427
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2434	2435	2437	2439	2443	2444	2446	2447	2448	2450
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2452	2453	2456	2457	2460	2461	2463	2464	2469	2471

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2472	2473	2474	2475	2476	2477	2478	2479	2480	2482
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2483	2484	2486	2488	2490	2491	2492	2494	2495	2497
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2498	2503	2504	2505	2506	2507	2509	2512	2515	2517
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2519	2520	2521	2527	2528	2531	2535	2536	2539	2541
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2547	2548	2554	2555	2558	2559	2560	2561	2562	2563
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2564	2567	2568	2570	2571	2572	2573	2575	2577	2579
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2581	2584	2585	2587	2589	2590	2593	2595	2596	2597
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2602	2604	2608	2610	2612	2614	2617	2620	2623	2625
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2627	2629	2630	2632	2634	2635	2636	2637	2640	2641
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2643	2644	2645	2646	2648	2649	2651	2652	2654	2659
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2665	2670	2671	2672	2673	2674	2676	2679	2680	2684
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2685	2688	2691	2693	2694	2695	2699	2701	2702	2705
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2707	2708	2709	2710	2711	2713	2716	2718	2719	2720
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2723	2726	2727	2728	2732	2734	2739	2742	2743	2747
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2755	2756	2758	2760	2761	2762	2763	2768	2769	2771
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2773	2778	2781	2782	2784	2786	2787	2788	2791	2795
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2796	2797	2798	2805	2806	2815	2818	2819	2820	2823
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	NA	NA
##	2825	2826	2827	2829	2832	2833	2835	2836	2837	2838
##	"cold"	NA	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	NA
##	2840	2841	2845	2846	2848	2853	2854	2855	2856	2861
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2862	2863	2865	2866	2867	2869	2871	2872	2874	2876
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2879	2880	2882	2884	2886	2888	2891	2894	2896	2898
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2900	2904	2906	2907	2908	2911	2914	2915	2916	2917
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2918	2920	2921	2922	2923	2924	2925	2926	2927	2928
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2936	2937	2938	2943	2944	2945	2946	2953	2954	2955
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2956	2958	2959	2962	2963	2964	2966	2968	2969	2970
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2971	2972	2975	2976	2977	2978	2980	2983	2984	2985
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	2986	2987	2990	2991	2993	2994	2997	2998	2999	3001

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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3003 3007 3009 3011 3012 3013 3014 3016 3017 3018
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3019 3021 3024 3026 3027 3028 3029 3030 3031 3033
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## 3035 3036 3038 3040 3044 3045 3046 3050 3052 3055
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3057 3058 3060 3064 3065 3066 3068 3072 3074 3076
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3080 3083 3084 3087 3089 3090 3092 3093 3095 3096
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## 3098 3099 3100 3104 3105 3106 3107 3112 3113 3116
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## 3119 3125 3128 3129 3130 3132 3133 3134 3135 3138
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## 3144 3145 3148 3150 3152 3153 3154 3158 3159 3161
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3163 3164 3166 3167 3169 3170 3171 3174 3176 3177
## "cold" "cold" "cold" "cold" "cold" "cold" NA "cold" "cold" "cold"
## 3178 3180 3184 3186 3191 3192 3193 3194 3198 3202
## "cold" "cold" "cold" NA "cold" NA "cold" "cold" "cold" "cold"
## 3204 3210 3216 3217 3218 3220 3226 3231 3233 3235
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## 3236 3237 3238 3241 3242 3243 3245 3248 3250 3251
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## 3252 3255 3259 3260 3261 3262 3265 3267 3269 3276
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## 3277 3279 3282 3284 3286 3288 3290 3293 3294 3296
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## 3300 3302 3303 3304 3306 3309 3310 3311 3312 3314
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3319 3321 3322 3323 3324 3327 3328 3329 3330 3335
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3337 3339 3344 3346 3348 3349 3352 3354 3356 3357
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## 3359 3363 3365 3366 3367 3372 3373 3376 3379 3381
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## 3382 3385 3386 3388 3389 3390 3391 3394 3396 3398
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## 3399 3402 3405 3406 3410 3413 3416 3417 3419 3421
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## 3426 3427 3428 3430 3431 3433 3436 3439 3441 3445
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## 3450 3451 3452 3455 3457 3459 3460 3463 3467 3468
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3471 3475 3477 3478 3479 3480 3481 3485 3486 3487
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## 3490 3493 3495 3496 3497 3498 3499 3503 3505 3507
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## 3509 3510 3513 3515 3518 3520 3521 3524 3528 3529
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## 3530 3534 3536 3538 3539 3540 3543 3546 3547 3548
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3549 3550 3551 3552 3553 3555 3556 3557 3559 3560

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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3563 3565 3566 3570 3571 3574 3576 3578 3579 3580
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3581 3585 3587 3590 3596 3598 3600 3601 3604 3605
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3606 3607 3608 3610 3613 3618 3619 3622 3624 3626
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## 3627 3629 3630 3632 3636 3639 3640 3641 3642 3643
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## 3644 3646 3649 3655 3656 3657 3658 3659 3660 3661
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## 3662 3663 3664 3667 3668 3669 3672 3673 3678 3684
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3685 3686 3687 3688 3689 3690 3692 3693 3694 3696
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## 3698 3699 3700 3701 3702 3703 3705 3707 3708 3709
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## 3710 3712 3714 3715 3716 3717 3719 3724 3725 3726
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3728 3732 3733 3734 3735 3736 3738 3739 3741 3744
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3747 3748 3750 3753 3756 3758 3759 3762 3763 3769
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3770 3772 3781 3784 3785 3787 3791 3792 3793 3796
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## 3801 3802 3803 3806 3809 3811 3813 3814 3816 3820
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3821 3823 3825 3827 3831 3832 3833 3834 3835 3837
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3838 3839 3840 3841 3842 3843 3844 3846 3847 3850
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3851 3852 3853 3854 3855 3862 3865 3866 3869 3870
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3872 3873 3874 3876 3878 3884 3885 3889 3891 3892
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3893 3894 3896 3899 3900 3901 3904 3907 3908 3909
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3910 3911 3913 3914 3916 3919 3920 3921 3926 3927
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
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## 3944 3946 3950 3953 3958 3961 3965 3966 3967 3968
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3971 3978 3983 3984 3985 3986 3988 3989 3990 3991
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 3993 3996 3999 4001 4002 4003 4004 4006 4007 4008
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4009 4012 4016 4017 4018 4024 4026 4027 4028 4030
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4032 4036 4037 4041 4042 4043 4044 4049 4050 4051
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4056 4057 4058 4060 4063 4068 4069 4070 4071 4073
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4074 4075 4078 4080 4082 4083 4084 4086 4088 4089

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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4092 4094 4095 4096 4099 4100 4101 4102 4106 4112
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4114 4115 4116 4117 4119 4121 4122 4125 4126 4130
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4133 4139 4143 4147 4149 4150 4151 4153 4158 4163
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4166 4167 4168 4170 4171 4172 4174 4176 4178 4184
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4191 4192 4194 4198 4199 4200 4202 4203 4205 4206
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4208 4210 4212 4213 4214 4216 4218 4220 4221 4222
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4223 4224 4227 4231 4232 4234 4235 4240 4241 4242
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4246 4251 4252 4253 4257 4258 4260 4262 4264 4267
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4270 4272 4275 4278 4279 4280 4285 4290 4291 4292
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4293 4296 4297 4298 4300 4302 4303 4306 4308 4310
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4312 4315 4319 4320 4325 4327 4328 4332 4333 4338
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4339 4342 4346 4347 4349 4351 4353 4355 4356 4357
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4361 4363 4364 4366 4367 4369 4370 4371 4372 4374
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4375 4378 4382 4383 4384 4386 4388 4389 4390 4392
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4393 4396 4397 4399 4400 4404 4406 4408 4409 4411
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4413 4414 4415 4420 4423 4428 4430 4431 4434 4435
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4436 4437 4439 4440 4441 4443 4445 4447 4452 4453
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4456 4457 4459 4460 4461 4464 4466 4468 4469 4472
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4473 4474 4477 4478 4479 4480 4481 4483 4484 4488
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4489 4491 4492 4494 4495 4496 4497 4499 4501 4506
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4508 4512 4513 4515 4517 4518 4519 4521 4522 4523
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4527 4531 4534 4535 4539 4541 4542 4543 4544 4545
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4552 4553 4556 4559 4560 4564 4565 4566 4567 4571
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4572 4574 4577 4578 4581 4584 4587 4591 4592 4596
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4598 4603 4607 4608 4609 4610 4612 4613 4615 4616
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4622 4627 4628 4633 4635 4638 4640 4641 4643 4644
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 4646 4647 4649 4650 4651 4656 4658 4660 4661 4664

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##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4665	4667	4668	4669	4670	4676	4678	4681	4682	4683
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4684	4686	4687	4690	4693	4696	4700	4701	4705	4706
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4709	4712	4713	4717	4721	4722	4724	4726	4727	4730
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4731	4732	4734	4735	4736	4737	4739	4744	4745	4746
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4747	4749	4751	4755	4756	4757	4759	4762	4763	4764
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4765	4766	4767	4769	4773	4774	4775	4779	4780	4782
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4783	4787	4788	4789	4795	4796	4797	4798	4799	4803
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4804	4805	4806	4807	4811	4814	4815	4816	4818	4819
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4820	4824	4825	4828	4829	4830	4831	4834	4839	4840
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4845	4846	4847	4851	4854	4855	4856	4857	4858	4859
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4860	4861	4863	4864	4866	4867	4871	4872	4873	4874
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4878	4881	4884	4886	4887	4888	4889	4890	4891	4892
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4893	4902	4903	4909	4911	4912	4914	4915	4917	4921
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4923	4924	4925	4930	4931	4933	4935	4936	4941	4942
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4944	4945	4946	4948	4949	4951	4955	4958	4959	4960
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4962	4964	4966	4968	4969	4970	4971	4972	4976	4977
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	4978	4979	4980	4981	4987	4988	4992	4995	4998	4999
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5000	5002	5004	5005	5008	5009	5010	5011	5012	5015
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5016	5018	5019	5021	5022	5024	5025	5027	5028	5031
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5032	5034	5036	5038	5039	5041	5042	5044	5048	5050
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5052	5054	5056	5059	5060	5062	5064	5065	5066	5067
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5070	5073	5074	5076	5077	5078	5079	5080	5082	5085
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5087	5089	5090	5091	5092	5093	5094	5095	5099	5101
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5102	5107	5109	5114	5115	5116	5117	5118	5119	5120
##	"cold"	"cold"	NA	"cold"	NA	"cold"	"cold"	NA	"cold"	"cold"
##	5121	5124	5126	5127	5132	5133	5136	5138	5139	5140
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5141	5144	5146	5148	5150	5153	5154	5156	5157	5158
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5159	5160	5161	5166	5168	5169	5170	5171	5172	5175

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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5178 5179 5181 5183 5186 5187 5188 5193 5194 5200
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5201 5204 5205 5206 5207 5208 5209 5215 5217 5221
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5222 5225 5226 5227 5231 5234 5235 5237 5239 5242
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5243 5244 5245 5246 5248 5250 5254 5257 5259 5261
## NA "cold" "cold" NA "cold" "cold" "cold" "cold" "cold" "cold"
## 5264 5265 5266 5269 5272 5274 5275 5277 5280 5282
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5283 5285 5287 5289 5290 5291 5295 5297 5298 5300
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" NA
## 5301 5310 5312 5318 5319 5321 5323 5324 5325 5326
## "cold" "cold" NA "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5329 5331 5335 5337 5338 5339 5340 5341 5344 5345
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5348 5350 5351 5352 5353 5354 5356 5359 5362 5363
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5364 5370 5373 5374 5375 5376 5377 5378 5381 5384
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5385 5386 5389 5392 5394 5397 5398 5399 5401 5402
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5405 5406 5410 5411 5414 5415 5417 5419 5420 5421
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5423 5424 5425 5429 5430 5431 5432 5433 5437 5440
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5441 5444 5445 5447 5448 5450 5451 5452 5454 5455
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5456 5457 5460 5461 5462 5464 5465 5466 5473 5478
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5480 5481 5483 5484 5485 5487 5488 5489 5490 5491
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5492 5493 5495 5497 5498 5499 5500 5501 5506 5507
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5509 5510 5511 5512 5513 5514 5515 5518 5525 5527
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5528 5529 5530 5531 5535 5536 5537 5540 5543 5546
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5548 5551 5554 5558 5560 5562 5563 5564 5567 5568
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5571 5573 5579 5582 5583 5584 5587 5588 5589 5590
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" NA "cold"
## 5591 5592 5594 5596 5597 5599 5600 5601 5602 5604
## "cold" NA "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5605 5606 5607 5608 5612 5613 5614 5616 5619 5620
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5622 5623 5626 5627 5629 5632 5633 5634 5635 5636
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5638 5639 5640 5641 5643 5644 5650 5655 5656 5657
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5661 5663 5664 5665 5666 5669 5673 5675 5677 5678
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 5680 5681 5682 5683 5685 5686 5687 5688 5689 5690

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##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5692	5693	5694	5696	5698	5699	5701	5705	5706	5707
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5708	5709	5715	5716	5718	5719	5720	5721	5723	5726
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5728	5729	5734	5740	5744	5745	5747	5748	5749	5751
##	"cold"	"cold"	"cold"	"cold"	"cold"	NA	"cold"	"cold"	"cold"	"cold"
##	5753	5762	5763	5765	5766	5769	5772	5775	5777	5783
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5784	5785	5786	5787	5788	5789	5791	5792	5793	5796
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5799	5800	5803	5805	5806	5809	5814	5815	5818	5819
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5820	5822	5825	5826	5827	5828	5829	5832	5836	5838
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5839	5844	5845	5850	5852	5854	5855	5856	5857	5859
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5861	5862	5863	5866	5869	5871	5873	5875	5876	5878
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5879	5880	5882	5886	5887	5888	5891	5896	5901	5903
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5905	5908	5909	5912	5916	5918	5922	5925	5928	5929
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5930	5931	5935	5936	5937	5939	5941	5942	5946	5948
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5952	5953	5954	5957	5958	5959	5960	5962	5963	5964
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5967	5971	5972	5973	5978	5980	5982	5983	5985	5989
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	5990	5992	5994	5995	5996	5997	5998	5999	6000	6001
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6004	6005	6006	6007	6008	6010	6013	6014	6025	6029
##	"cold"	"cold"	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6031	6034	6035	6036	6037	6038	6039	6044	6045	6046
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6047	6048	6049	6050	6053	6058	6059	6060	6064	6066
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6069	6072	6074	6078	6079	6080	6081	6082	6084	6085
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6088	6090	6091	6092	6093	6094	6095	6098	6099	6100
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6101	6102	6103	6104	6105	6106	6107	6108	6110	6111
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6112	6117	6119	6120	6123	6124	6126	6127	6129	6131
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6132	6133	6134	6137	6139	6140	6141	6145	6147	6148
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6149	6150	6151	6152	6154	6155	6157	6159	6162	6164
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6165	6168	6169	6174	6175	6176	6178	6181	6186	6189
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6192	6193	6194	6195	6197	6198	6199	6201	6203	6204
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6207	6209	6212	6214	6215	6216	6217	6218	6221	6222

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6223	6224	6227	6228	6230	6233	6235	6237	6238	6241
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6242	6243	6244	6245	6247	6249	6251	6256	6259	6260
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6261	6262	6263	6266	6270	6271	6272	6273	6275	6276
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6277	6279	6280	6284	6285	6286	6287	6293	6296	6297
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6300	6306	6308	6309	6310	6314	6315	6320	6321	6323
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6325	6329	6330	6331	6333	6336	6338	6339	6342	6343
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6346	6350	6352	6354	6355	6356	6357	6359	6362	6363
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6364	6367	6368	6369	6373	6375	6377	6380	6381	6386
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6387	6388	6390	6391	6395	6396	6397	6399	6401	6402
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6403	6413	6415	6416	6417	6421	6422	6423	6425	6426
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6427	6428	6429	6430	6431	6432	6433	6434	6435	6436
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6437	6441	6444	6445	6449	6450	6451	6456	6459	6462
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6463	6464	6465	6468	6472	6473	6475	6476	6478	6479
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6480	6481	6483	6484	6488	6489	6492	6493	6494	6496
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6497	6498	6499	6500	6505	6506	6507	6513	6514	6515
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6517	6519	6524	6527	6530	6532	6535	6536	6538	6541
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6543	6545	6546	6548	6551	6552	6553	6554	6555	6559
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6561	6564	6565	6569	6570	6571	6573	6576	6579	6580
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6582	6584	6585	6587	6588	6589	6591	6593	6594	6595
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6596	6597	6598	6599	6602	6604	6605	6608	6611	6612
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6614	6615	6616	6618	6619	6620	6622	6628	6630	6631
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6635	6637	6641	6642	6643	6644	6645	6646	6648	6649
##	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6653	6654	6656	6657	6658	6659	6660	6661	6662	6666
##	"cold"	"cold"	"cold"	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"
##	6670	6671	6672	6673	6674	6675	6676	6680	6682	6684
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6687	6688	6691	6693	6694	6695	6696	6697	6700	6702
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6703	6705	6706	6707	6710	6711	6712	6715	6717	6720
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6721	6723	6726	6727	6729	6730	6732	6736	6740	6741

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6745	6746	6747	6751	6752	6754	6755	6758	6759	6763
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6770	6771	6772	6773	6774	6775	6776	6778	6782	6783
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6784	6786	6788	6789	6792	6794	6795	6796	6797	6798
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	NA	"cold"	"cold"	"cold"
##	6799	6801	6802	6806	6810	6814	6815	6818	6820	6821
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6824	6827	6828	6829	6830	6831	6832	6833	6835	6836
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6838	6841	6842	6843	6847	6848	6849	6851	6853	6854
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6856	6857	6858	6859	6860	6862	6863	6864	6867	6869
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6871	6872	6878	6879	6882	6883	6884	6888	6890	6891
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6894	6896	6897	6899	6900	6901	6903	6904	6905	6907
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6908	6909	6910	6911	6912	6914	6917	6918	6919	6920
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6921	6922	6923	6928	6929	6931	6932	6933	6936	6938
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6939	6942	6945	6950	6952	6953	6956	6960	6969	6973
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6977	6978	6980	6981	6982	6985	6986	6987	6988	6989
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	6990	6993	6994	6995	6997	6998	7001	7003	7004	7005
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7007	7008	7009	7010	7011	7015	7016	7018	7022	7023
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7025	7026	7027	7034	7037	7038	7039	7045	7046	7047
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7048	7051	7052	7055	7056	7057	7060	7061	7062	7064
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7067	7069	7070	7072	7074	7075	7076	7081	7082	7084
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7085	7090	7091	7092	7093	7099	7100	7101	7102	7105
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7109	7110	7112	7114	7115	7119	7121	7122	7124	7128
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7130	7132	7134	7140	7142	7143	7144	7146	7147	7152
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7153	7158	7159	7160	7164	7165	7166	7167	7176	7177
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7178	7180	7183	7185	7187	7188	7191	7193	7194	7202
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7203	7204	7206	7208	7209	7210	7211	7212	7214	7215
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	NA
##	7216	7218	7220	7224	7225	7227	7228	7229	7232	7233
##	"cold"	NA	"cold"	"cold"	"cold"	NA	"cold"	"cold"	"cold"	"cold"
##	7235	7237	7238	7239	7240	7241	7242	7244	7245	7247
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7249	7250	7251	7252	7253	7256	7257	7258	7259	7263

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7264	7267	7268	7269	7270	7271	7272	7273	7274	7278
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7279	7280	7282	7283	7285	7287	7290	7291	7292	7294
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7297	7299	7303	7310	7312	7313	7314	7316	7317	7318
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7321	7323	7324	7329	7331	7332	7333	7336	7337	7339
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7340	7341	7342	7343	7344	7346	7349	7350	7351	7352
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7353	7354	7359	7360	7366	7367	7368	7369	7370	7372
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7373	7374	7375	7376	7377	7378	7379	7380	7384	7385
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7386	7387	7390	7392	7394	7395	7396	7400	7401	7402
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7404	7405	7406	7407	7410	7411	7412	7413	7414	7418
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7420	7421	7422	7424	7426	7427	7432	7436	7437	7439
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7442	7444	7447	7449	7450	7451	7452	7453	7454	7455
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7458	7459	7460	7462	7464	7466	7469	7470	7471	7475
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7476	7478	7479	7482	7483	7484	7487	7490	7495	7496
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7498	7499	7501	7504	7505	7506	7513	7517	7519	7523
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7525	7527	7531	7532	7533	7536	7538	7539	7542	7544
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7546	7554	7556	7557	7560	7561	7563	7566	7567	7569
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7571	7576	7579	7580	7581	7582	7583	7585	7586	7588
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7589	7591	7593	7596	7598	7599	7600	7601	7604	7606
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7607	7608	7611	7612	7613	7616	7617	7618	7619	7620
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7621	7625	7626	7629	7633	7634	7636	7638	7639	7641
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7644	7646	7651	7653	7656	7658	7662	7663	7664	7666
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7668	7669	7670	7677	7678	7680	7682	7684	7688	7689
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7692	7698	7699	7700	7702	7703	7707	7709	7711	7712
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7714	7715	7716	7718	7719	7720	7721	7724	7725	7726
##	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7728	7731	7738	7739	7740	7741	7742	7744	7745	7752
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7754	7755	7756	7760	7763	7766	7768	7769	7770	7772
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7775	7776	7778	7780	7781	7783	7785	7791	7792	7794

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7795	7796	7797	7801	7807	7809	7810	7811	7812	7814
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7816	7818	7825	7826	7828	7829	7830	7831	7834	7835
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7837	7838	7839	7840	7842	7844	7846	7847	7850	7851
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	NA
##	7852	7855	7858	7860	7861	7864	7868	7870	7872	7874
##	"cold"	"cold"	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7875	7876	7878	7879	7880	7882	7885	7887	7890	7892
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7895	7897	7900	7904	7905	7909	7910	7912	7913	7916
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7920	7921	7922	7923	7924	7926	7929	7930	7931	7932
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7936	7938	7939	7941	7942	7943	7945	7953	7954	7956
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7957	7958	7960	7964	7968	7969	7971	7972	7973	7974
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	7978	7980	7987	7988	7989	7991	7995	7996	7998	7999
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8001	8003	8004	8006	8009	8012	8013	8015	8018	8022
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8023	8024	8030	8037	8039	8040	8041	8042	8044	8045
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8046	8047	8053	8055	8057	8061	8062	8064	8066	8068
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8069	8070	8075	8076	8078	8079	8081	8082	8083	8086
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8089	8091	8093	8098	8104	8105	8106	8108	8110	8113
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8116	8117	8118	8119	8120	8123	8124	8125	8128	8129
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8130	8135	8138	8140	8142	8143	8145	8147	8149	8150
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8151	8153	8154	8158	8163	8166	8167	8168	8169	8170
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8171	8172	8181	8182	8187	8190	8195	8201	8204	8206
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8207	8208	8211	8212	8214	8216	8217	8218	8219	8224
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8225	8227	8230	8232	8233	8234	8235	8236	8238	8241
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8242	8243	8244	8247	8248	8253	8254	8255	8256	8257
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8258	8259	8261	8265	8269	8270	8271	8272	8273	8276
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8277	8280	8281	8282	8285	8286	8288	8290	8291	8293
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8295	8296	8307	8309	8312	8313	8314	8315	8316	8317
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8319	8320	8324	8325	8326	8327	8328	8329	8331	8333
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8339	8342	8343	8344	8347	8351	8352	8355	8363	8364

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8366	8368	8369	8378	8380	8381	8382	8384	8387	8389
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8390	8391	8393	8396	8397	8398	8401	8403	8404	8412
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8413	8415	8419	8423	8425	8427	8428	8430	8432	8433
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8435	8436	8437	8438	8440	8444	8446	8447	8448	8449
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8450	8451	8452	8454	8455	8460	8462	8464	8465	8466
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8467	8472	8473	8475	8476	8477	8478	8484	8485	8490
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8491	8496	8497	8500	8503	8504	8505	8506	8507	8508
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8509	8510	8512	8514	8515	8516	8519	8520	8521	8522
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8524	8526	8529	8530	8531	8537	8539	8544	8547	8551
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8553	8554	8555	8558	8559	8560	8561	8562	8564	8567
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8568	8570	8573	8574	8575	8580	8581	8582	8586	8589
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8593	8594	8597	8599	8603	8605	8607	8608	8609	8610
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8613	8620	8627	8629	8630	8632	8633	8637	8638	8639
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8641	8643	8644	8646	8650	8653	8654	8655	8657	8662
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8663	8664	8667	8668	8670	8671	8673	8674	8679	8681
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8682	8685	8686	8687	8689	8690	8695	8696	8697	8699
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8705	8707	8708	8711	8712	8715	8716	8719	8720	8721
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	NA
##	8722	8723	8726	8727	8729	8731	8738	8740	8742	8743
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8744	8745	8746	8747	8749	8752	8753	8754	8756	8757
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8758	8765	8766	8767	8768	8774	8782	8783	8784	8785
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8787	8791	8797	8800	8804	8805	8809	8810	8811	8812
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8817	8823	8828	8829	8830	8833	8834	8835	8838	8840
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8844	8845	8847	8848	8855	8856	8862	8863	8864	8872
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8874	8876	8877	8878	8881	8882	8883	8885	8886	8887
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8889	8891	8892	8893	8895	8897	8900	8905	8906	8909
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8913	8915	8918	8919	8922	8923	8925	8928	8930	8931
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8934	8936	8940	8942	8944	8945	8948	8950	8951	8952

##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8953	8954	8958	8962	8964	8965	8969	8972	8973	8975
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8976	8977	8978	8979	8980	8981	8982	8983	8985	8990
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	8992	8995	8996	8999	9001	9002	9007	9008	9009	9011
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9014	9020	9023	9024	9027	9029	9030	9035	9036	9038
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9039	9041	9043	9045	9047	9048	9050	9052	9056	9057
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9060	9061	9067	9069	9072	9074	9076	9078	9079	9081
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9082	9083	9088	9090	9094	9097	9100	9103	9104	9106
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9107	9108	9111	9115	9117	9118	9119	9120	9121	9125
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9130	9131	9135	9139	9140	9141	9144	9145	9149	9151
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9152	9157	9158	9159	9160	9161	9163	9166	9171	9172
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9178	9179	9182	9184	9185	9188	9192	9193	9194	9195
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9198	9199	9201	9203	9206	9207	9210	9212	9213	9216
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9218	9219	9220	9221	9225	9228	9229	9232	9233	9236
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9237	9238	9240	9241	9244	9248	9251	9252	9253	9254
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9257	9260	9261	9262	9263	9264	9266	9267	9269	9273
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9277	9279	9283	9284	9286	9287	9288	9291	9292	9294
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9295	9297	9298	9303	9304	9305	9306	9308	9309	9311
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9317	9318	9322	9323	9327	9330	9331	9332	9334	9336
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9337	9344	9345	9347	9348	9349	9350	9352	9353	9354
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9357	9359	9360	9361	9363	9368	9369	9370	9375	9377
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9380	9381	9382	9385	9387	9391	9394	9395	9397	9398
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9402	9403	9405	9407	9410	9412	9413	9414	9415	9416
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9417	9420	9421	9422	9424	9425	9426	9428	9429	9430
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9434	9435	9436	9438	9439	9441	9442	9443	9446	9449
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9453	9454	9455	9457	9459	9461	9462	9464	9466	9471
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9472	9473	9475	9476	9478	9479	9480	9481	9483	9484
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	9485	9488	9490	9491	9493	9496	9497	9498	9499	9501

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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9502 9503 9504 9506 9509 9510 9511 9512 9514 9517
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9519 9520 9524 9525 9526 9530 9531 9532 9534 9537
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9538 9540 9542 9543 9544 9545 9546 9547 9548 9549
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9551 9552 9554 9556 9557 9558 9559 9563 9569 9578
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9579 9580 9582 9587 9588 9593 9594 9596 9597 9600
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9602 9603 9604 9607 9612 9613 9614 9617 9620 9621
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9631 9636 9639 9641 9644 9645 9646 9647 9648 9650
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9651 9653 9655 9657 9658 9660 9663 9665 9669 9674
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9675 9676 9679 9681 9682 9685 9686 9689 9692 9695
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9696 9697 9700 9706 9707 9709 9710 9711 9712 9714
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9715 9716 9717 9718 9719 9720 9726 9728 9729 9732
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9735 9736 9739 9740 9742 9745 9747 9749 9755 9757
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9759 9761 9764 9765 9767 9768 9772 9774 9775 9776
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9777 9778 9780 9782 9783 9787 9788 9789 9790 9791
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9792 9794 9796 9798 9799 9800 9803 9808 9809 9811
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9812 9816 9817 9818 9819 9821 9825 9827 9828 9829
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9831 9832 9833 9834 9835 9837 9838 9840 9842 9843
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9844 9845 9848 9849 9851 9853 9854 9855 9860 9862
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9863 9864 9865 9867 9868 9869 9870 9871 9872 9875
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9876 9877 9880 9883 9884 9886 9888 9889 9894 9896
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9899 9901 9904 9905 9906 9908 9909 9910 9911 9912
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9913 9914 9915 9916 9918 9921 9922 9923 9925 9926
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9927 9929 9930 9931 9934 9936 9937 9939 9942 9944
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9948 9949 9951 9953 9954 9958 9961 9962 9963 9964
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9966 9967 9969 9971 9972 9973 9976 9977 9978 9979
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9983 9984 9985 9986 9989 9990 9991 9992 9994 9996
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 9998 10000 10001 10002 10004 10005 10007 10008 10009 10011

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##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10012	10013	10015	10017	10020	10022	10023	10027	10030	10031
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10033	10034	10036	10037	10038	10042	10046	10047	10053	10054
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10055	10060	10063	10066	10070	10072	10074	10077	10078	10079
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10080	10081	10082	10084	10085	10086	10087	10088	10091	10092
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10094	10097	10098	10100	10102	10103	10104	10109	10113	10117
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10118	10121	10122	10123	10125	10128	10132	10137	10138	10143
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10144	10145	10146	10147	10150	10152	10154	10156	10158	10159
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10161	10162	10165	10167	10169	10173	10176	10178	10179	10181
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10182	10185	10186	10190	10191	10193	10195	10196	10198	10199
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10201	10202	10203	10204	10206	10208	10211	10213	10217	10221
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10222	10224	10226	10229	10235	10238	10240	10241	10245	10247
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10248	10250	10251	10252	10253	10256	10260	10261	10269	10270
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10278	10279	10280	10283	10284	10285	10286	10287	10289	10291
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10294	10295	10297	10298	10299	10300	10305	10307	10310	10311
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10312	10314	10315	10318	10320	10321	10322	10323	10325	10330
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10334	10336	10337	10338	10339	10340	10348	10349	10350	10354
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10359	10361	10362	10368	10369	10370	10371	10373	10374	10376
##	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10377	10380	10383	10384	10385	10387	10390	10391	10393	10396
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10397	10405	10407	10408	10412	10414	10415	10420	10421	10422
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10423	10424	10425	10426	10427	10428	10429	10431	10434	10435
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10436	10437	10438	10440	10441	10442	10445	10452	10453	10454
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10455	10456	10457	10458	10459	10460	10465	10467	10468	10469
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10473	10474	10476	10477	10479	10483	10485	10486	10488	10489
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10491	10492	10495	10497	10498	10500	10501	10502	10505	10506
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10508	10512	10513	10516	10517	10519	10521	10523	10524	10527
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10529	10531	10541	10542	10543	10544	10546	10548	10549	10553
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10555	10556	10557	10558	10560	10561	10564	10565	10568	10569

##	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"	NA	"cold"	"cold"
##	10570	10571	10573	10576	10580	10582	10583	10585	10591	10592
##	"cold"	"cold"	"cold"	"cold"	NA	"cold"	"cold"	"cold"	"cold"	"cold"
##	10595	10599	10602	10603	10607	10608	10611	10612	10614	10616
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10617	10619	10621	10622	10623	10624	10625	10627	10629	10630
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10631	10633	10634	10635	10636	10640	10643	10646	10647	10651
##	NA	"cold"	NA	"cold"	"cold"	NA	NA	NA	"cold"	"cold"
##	10652	10653	10655	10657	10660	10662	10664	10667	10670	10674
##	NA	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10676	10678	10679	10680	10682	10683	10685	10686	10688	10690
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10692	10695	10698	10699	10700	10704	10705	10708	10709	10710
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	NA	"cold"
##	10711	10714	10716	10717	10721	10722	10724	10729	10730	10732
##	"cold"	"cold"	"cold"	"cold"	NA	"cold"	NA	"cold"	"cold"	"cold"
##	10734	10736	10737	10740	10741	10742	10743	10744	10746	10747
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10748	10749	10750	10751	10752	10753	10757	10759	10760	10763
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10767	10768	10772	10778	10779	10780	10781	10782	10783	10784
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10786	10787	10788	10790	10791	10792	10793	10795	10797	10801
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10802	10803	10804	10809	10827	10829	10830	10833	10835	10838
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10839	10840	10844	10845	10846	10847	10851	10852	10853	10854
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10857	10859	10861	10866	10871	10873	10874	10882	10886	10888
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10891	10895	10898	10903	10904	10907	10908	10909	10911	10912
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10914	10915	10920	10921	10922	10923	10924	10926	10931	10932
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10936	10938	10940	10941	10942	10943	10944	10946	10947	10948
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10949	10951	10952	10953	10957	10958	10959	10960	10962	10965
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10966	10967	10968	10974	10975	10977	10978	10981	10983	10985
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	10986	10988	10991	10994	10995	10996	10997	10998	10999	11000
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	11001	11002	11004	11006	11007	11009	11011	11012	11013	11015
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	11016	11019	11021	11022	11024	11025	11029	11034	11035	11036
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	11042	11044	11045	11048	11050	11053	11054	11056	11062	11063
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	11064	11067	11070	11073	11074	11076	11077	11081	11082	11084
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	11085	11086	11091	11092	11094	11096	11098	11103	11106	11108
##	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"	"cold"
##	11109	11110	11113	11116	11122	11123	11126	11129	11131	11133


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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11136 11137 11139 11146 11148 11150 11151 11153 11154 11155
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11157 11162 11163 11164 11166 11168 11169 11172 11175 11177
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11180 11186 11187 11189 11193 11195 11196 11198 11199 11203
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11204 11207 11208 11209 11212 11214 11215 11218 11220 11222
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11225 11228 11231 11233 11234 11235 11237 11238 11239 11240
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11241 11242 11244 11245 11247 11249 11250 11251 11254 11256
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11257 11259 11260 11264 11267 11268 11269 11272 11273 11275
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11276 11278 11281 11283 11285 11286 11287 11288 11289 11290
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11294 11297 11299 11302 11303 11305 11306 11307 11308 11309
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11310 11311 11313 11314 11315 11321 11322 11323 11324 11326
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11328 11329 11330 11332 11333 11334 11340 11341 11345 11348
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11350 11351 11352 11354 11355 11356 11357 11361 11362 11363
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11364 11365 11366 11367 11368 11372 11373 11374 11378 11380
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11384 11386 11387 11388 11390 11394 11395 11396 11399 11402
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11405 11407 11412 11415 11417 11418 11419 11423 11424 11426
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11430 11433 11434 11435 11436 11437 11440 11441 11444 11446
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11447 11450 11451 11453 11454 11455 11456 11459 11460 11463
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11464 11466 11469 11472 11479 11480 11485 11488 11489 11491
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11494 11495 11496 11500 11506 11507 11509 11511 11512 11513
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11519 11523 11526 11528 11529 11530 11531 11533 11534 11535
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11536 11539 11543 11544 11545 11546 11548 11552 11553 11557
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11558 11559 11560 11562 11564 11565 11567 11573 11574 11576
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11577 11578 11580 11582 11584 11585 11586 11587 11588 11590
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11592 11598 11603 11604 11605 11606 11610 11615 11617 11618
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11620 11621 11623 11624 11625 11626 11627 11628 11631 11632
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11634 11637 11638 11640 11641 11643 11644 11646 11649 11652
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11653 11658 11660 11661 11663 11666 11667 11669 11671 11673

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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11674 11675 11678 11680 11682 11685 11686 11687 11688 11692
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11694 11695 11696 11697 11698 11703 11705 11710 11711 11713
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11716 11717 11718 11719 11722 11726 11727 11729 11731 11732
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11735 11736 11738 11741 11744 11746 11748 11750 11754 11755
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11756 11757 11759 11761 11766 11769 11770 11772 11773 11775
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11777 11780 11781 11782 11786 11787 11793 11794 11797 11799
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11802 11805 11806 11807 11809 11813 11815 11816 11818 11819
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11820 11821 11827 11829 11830 11831 11834 11836 11837 11838
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11843 11846 11847 11848 11850 11852 11853 11855 11856 11857
## "cold"      NA "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11865 11869 11871 11872 11873 11875 11878 11879 11880 11882
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11883 11888 11889 11890 11891 11892 11893 11896 11897 11898
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11900 11902 11903 11904 11905 11906 11908 11911 11913 11915
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11917 11918 11922 11926 11931 11933 11934 11936 11940 11943
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11945 11946 11947 11948 11951 11954 11955 11957 11958 11962
## "cold" "cold" "cold"      NA "cold" "cold" "cold" "cold" "cold" "cold"
## 11963 11964 11965 11971 11973 11977 11979 11982 11983 11985
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 11988 11991 11992 11994 11996 11997 11999 12000 12002 12005
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12006 12008 12013 12016 12018 12023 12025 12026 12027 12029
##      NA "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12030 12034 12035 12036 12037 12039 12040 12042 12043 12046
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12048 12049 12050 12051 12052 12054 12055 12056 12057 12058
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12059 12061 12065 12067 12070 12072 12074 12075 12076 12079
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12083 12086 12087 12088 12089 12090 12092 12099 12100 12102
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12104 12108 12109 12111 12112 12113 12114 12115 12118 12119
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12126 12130 12135 12136 12139 12140 12141 12145 12146 12150
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12152 12154 12155 12159 12160 12161 12162 12163 12167 12168
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12171 12175 12176 12177 12178 12180 12181 12182 12184 12186
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12189 12191 12194 12195 12196 12197 12198 12199 12203 12208
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12210 12214 12215 12216 12217 12218 12224 12226 12228 12231

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## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12232 12234 12235 12237 12238 12239 12242 12243 12245 12246
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12252 12254 12255 12257 12258 12259 12260 12262 12263 12264
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12265 12268 12269 12271 12272 12276 12277 12278 12279 12283
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12286 12289 12293 12294 12295 12300 12301 12303 12305 12306
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12307 12315 12316 12318 12321 12322 12326 12329 12330 12332
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12333 12335 12336 12340 12343 12345 12349 12353 12355 12357
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12358 12359 12360 12363 12364 12365 12367 12371 12373 12374
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12375 12376 12379 12381 12384 12385 12387 12388 12391 12392
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12393 12395 12396 12399 12401 12404 12405 12407 12408 12410
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12411 12412 12414 12415 12416 12418 12420 12421 12422 12423
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12425 12426 12427 12428 12430 12431 12432 12434 12436 12437
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12442 12443 12448 12452 12453 12457 12463 12467 12469 12471
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12472 12474 12477 12478 12479 12480 12483 12484 12485 12487
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12489 12490 12491 12493 12495 12497 12498 12499 12500 12504
## "cold" "cold" "cold" "cold" NA "cold" "cold" "cold" "cold" "cold"
## 12505 12506 12507 12511 12516 12517 12518 12520 12522 12523
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12525 12526 12529 12530 12531 12535 12536 12537 12539 12541
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12542 12545 12548 12550 12551 12552 12553 12555 12556 12559
## "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold" "cold"
## 12560 12562
## "cold" "cold"
```

```
# Confusion Matrix
table(logistic_pred, testing_Yresults)
```

```
##           testing_Yresults
## logistic_pred cold warm
##           cold 5631  602
```

```
# Logistic Model - Error Rate
mean(na.omit(logistic_pred!=testing_Yresults))
```

```
## [1] 0.0965827
```

```
# Logistic Model - Correct Classification Rate
mean(na.omit(logistic_pred==testing_Yresults))
```

```
## [1] 0.9034173

## LDA: Linear Discriminant Analysis
# Fit the LDA model on the training data

library(MASS)

# LDA using the variables
lda_model=lda(Yresults~tmpm_Fahrenheit+Dewptm+hum+Pressurem+wdir, data=data1, family=binomial)
lda_model

## Call:
## lda(Yresults ~ tmpm_Fahrenheit + Dewptm + hum + Pressurem + wdir,
##      data = data1, family = binomial)
##
## Prior probabilities of groups:
##      cold      warm
## 0.8969337 0.1030663
##
## Group means:
##      tmpm_Fahrenheit  Dewptm      hum Pressurem      wdir
## cold      50.52628  5.798908 72.72490  1013.561 185.7732
## warm      69.14953 11.330997 53.42757  1014.502 162.8972
##
## Coefficients of linear discriminants:
##              LD1
## tmpm_Fahrenheit  0.2546610145
## Dewptm          -0.2768810736
## hum              0.0364356686
## Pressurem       -0.0078344065
## wdir            -0.0006781351

# Validate the LDA model on the testing data
lda_pred=predict(lda_model, testing_data)
names(lda_pred)

## [1] "class"      "posterior" "x"

lda_pred_Direction=lda_pred$class
head(lda_pred_Direction)

## [1] cold cold cold cold cold cold
## Levels: cold warm

# LDA - Confusion Matrix
table(lda_pred_Direction, testing_Yresults)

##              testing_Yresults
## lda_pred_Direction cold warm
##              cold 5547  208
##              warm   84  394
```

```
# LDA - Misclassification Rate
mean(na.omit(lda_pred_Direction!=testing_Yresults))
```

```
## [1] 0.04684742
```

```
# LDA - Correct Classification Rate
mean(na.omit(lda_pred_Direction==testing_Yresults))
```

```
## [1] 0.9531526
```

```
## QDA: Quadratic Discriminant Analysis
# Fit the QDA model on the training data
# QDA using all variables
qda_model=qda(Yresults~tmpm_Fahrenheit+Dewptm+hum+Pressurem+wdir, data=data1, family=binomial)
qda_model
```

```
## Call:
## qda(Yresults ~ tmpm_Fahrenheit + Dewptm + hum + Pressurem + wdir,
##     data = data1, family = binomial)
##
## Prior probabilities of groups:
##      cold      warm
## 0.8969337 0.1030663
##
## Group means:
##      tmpm_Fahrenheit  Dewptm      hum Pressurem      wdir
## cold      50.52628  5.798908 72.72490 1013.561 185.7732
## warm      69.14953 11.330997 53.42757 1014.502 162.8972
```

```
# Validate the QDA model on the testing data
qda_pred=predict(qda_model, testing_data)
names(qda_pred)
```

```
## [1] "class"      "posterior"
```

```
qda_pred_results=qda_pred$class
head(qda_pred_results)
```

```
## [1] cold cold cold cold cold cold
## Levels: cold warm
```

```
# QDA - Confusion Matrix
table(qda_pred_results, testing_Yresults)
```

```
##           testing_Yresults
## qda_pred_results cold warm
##           cold 5570   85
##           warm  61   517
```

```
# QDA - Misclassification Rate
mean(na.omit(qda_pred_results!=testing_Yresults))
```

```
## [1] 0.02342371
```

```
# QDA - Correct Classification Rate
mean(na.omit(qda_pred_results==testing_Yresults))
```

```
## [1] 0.9765763
```

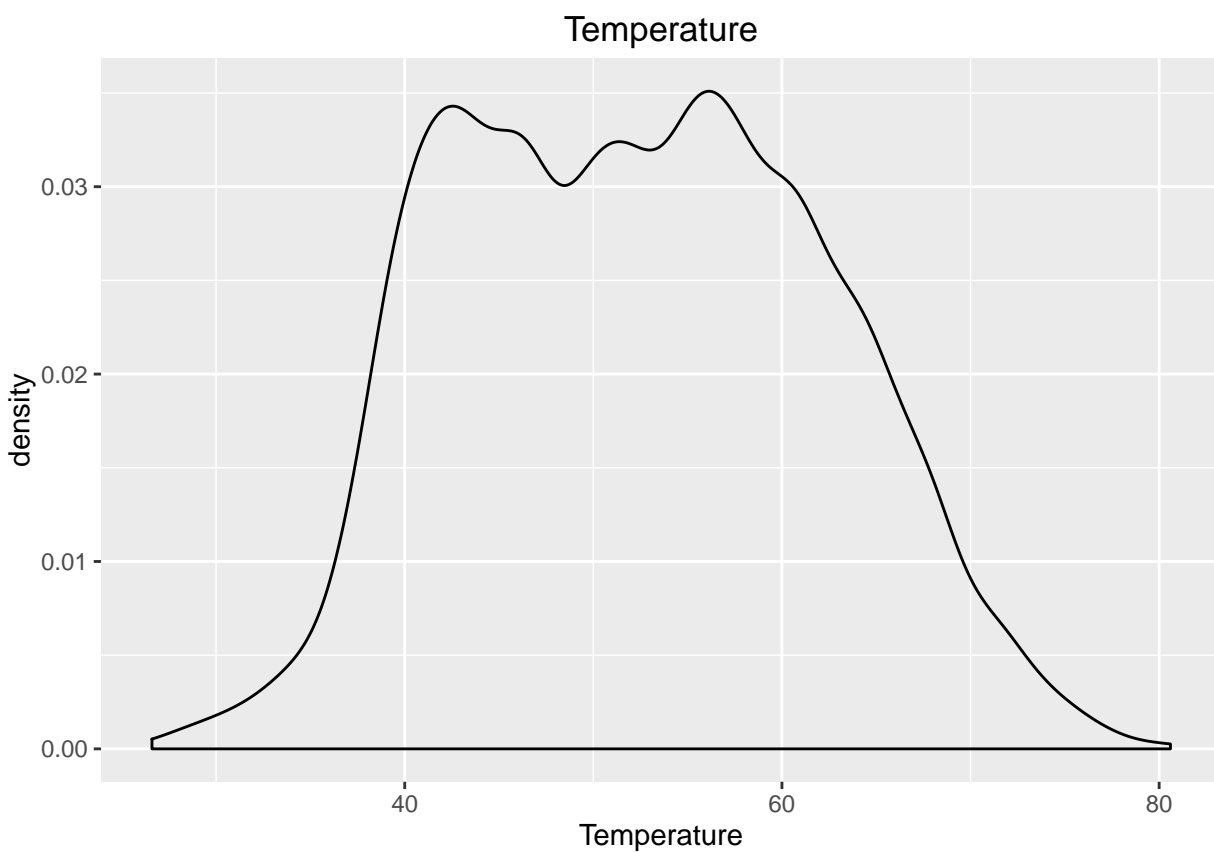
```
library(lattice)
```

```
## Warning: package 'lattice' was built under R version 3.1.2
```

```
library(ggplot2)
```

```
## Warning: package 'ggplot2' was built under R version 3.1.3
```

```
ggplot(weather, aes(x=tmpm_Fahrenheit)) +
  geom_density() +
  xlab("Temperature") +
  ggtitle("Temperature")
```



```

plot(weather$Date, weather$tmpm_Fahrenheit,
      ylab = "Temperature",           #Label of Y-Axis
      xlab = "Year",                 #Label of X-Axis
      main = "Temperature During 2014", #Label of Graph
      type = "l",                   #Turns dots to lines
      lwd = 1,                      #Makes line thicker
      col = "navy blue")            #Color of Line

```

