

Customer_churn

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```
library(plyr)
## Warning: package 'plyr' was built under R version 3.6.1
library(dplyr)
## Warning: package 'dplyr' was built under R version 3.6.1
##
## Attaching package: 'dplyr'
##
## The following objects are masked from 'package:plyr':
##
##   arrange, count, desc, failwith, id, mutate, rename, summarise,
##   summarize
##
## The following objects are masked from 'package:stats':
##
##   filter, lag
##
## The following objects are masked from 'package:base':
##
##   intersect, setdiff, setequal, union
library(ggplot2)
## Warning: package 'ggplot2' was built under R version 3.6.1
library(ggthemes)
## Warning: package 'ggthemes' was built under R version 3.6.1
library(partitions)
## Warning: package 'partitions' was built under R version 3.6.1
library(caret)
## Warning: package 'caret' was built under R version 3.6.1
## Loading required package: lattice
## Registered S3 method overwritten by 'lava':
##   method           from
##   print.equivalence partitions
```

```

library(randomForest)

## Warning: package 'randomForest' was built under R version 3.6.1
## randomForest 4.6-14
## Type rfNews() to see new features/changes/bug fixes.
##
## Attaching package: 'randomForest'
##
## The following object is masked from 'package:ggplot2':
##
##     margin
##
## The following object is masked from 'package:dplyr':
##
##     combine

library(ROSE)

## Warning: package 'ROSE' was built under R version 3.6.1
## Loaded ROSE 0.0-3

library(naivebayes)

## Warning: package 'naivebayes' was built under R version 3.6.1
## naivebayes 0.9.6 loaded

library(psych)

## Warning: package 'psych' was built under R version 3.6.1
##
## Attaching package: 'psych'
##
## The following object is masked from 'package:randomForest':
##
##     outlier
##
## The following objects are masked from 'package:ggplot2':
##
##     %+%, alpha

cchurn <- read.csv("Customer-Churn.csv")
str(cchurn)

## 'data.frame':    7043 obs. of  21 variables:
## $ customerID      : Factor w/ 7043 levels "0002-ORFB0","0003-MKNFE",...:
## 5376 3963 2565 5536 6512 6552 1003 4771 5605 4535 ...
## $ gender          : Factor w/ 2 levels "Female","Male": 1 2 2 2 1 1 2 1 1
## 2 ...

```

```
## $ SeniorCitizen      : int   0 0 0 0 0 0 0 0 0 0 ...
## $ Partner            : Factor w/ 2 levels "No","Yes": 2 1 1 1 1 1 1 1 2 1
...
## $ Dependents         : Factor w/ 2 levels "No","Yes": 1 1 1 1 1 1 2 1 1 2
...
## $ tenure             : int    1 34 2 45 2 8 22 10 28 62 ...
## $ PhoneService       : Factor w/ 2 levels "No","Yes": 1 2 2 1 2 2 2 1 2 2
...
## $ MultipleLines      : Factor w/ 3 levels "No","No phone service",...: 2 1 1
2 1 3 3 2 3 1 ...
## $ InternetService    : Factor w/ 3 levels "DSL","Fiber optic",...: 1 1 1 1 2
2 2 1 2 1 ...
## $ OnlineSecurity     : Factor w/ 3 levels "No","No internet service",...: 1 3
3 3 1 1 1 3 1 3 ...
## $ OnlineBackup       : Factor w/ 3 levels "No","No internet service",...: 3 1
3 1 1 1 3 1 1 3 ...
## $ DeviceProtection   : Factor w/ 3 levels "No","No internet service",...: 1 3
1 3 1 3 1 1 3 1 ...
## $ TechSupport        : Factor w/ 3 levels "No","No internet service",...: 1 1
1 3 1 1 1 1 3 1 ...
## $ StreamingTV        : Factor w/ 3 levels "No","No internet service",...: 1 1
1 1 1 3 3 1 3 1 ...
## $ StreamingMovies    : Factor w/ 3 levels "No","No internet service",...: 1 1
1 1 1 3 1 1 3 1 ...
## $ Contract           : Factor w/ 3 levels "Month-to-month",...: 1 2 1 2 1 1 1
1 1 2 ...
## $ PaperlessBilling   : Factor w/ 2 levels "No","Yes": 2 1 2 1 2 2 2 1 2 1
...
## $ PaymentMethod      : Factor w/ 4 levels "Bank transfer (automatic)",...: 3
4 4 1 3 3 2 4 3 1 ...
## $ MonthlyCharges     : num    29.9 57 53.9 42.3 70.7 ...
## $ TotalCharges       : num    29.9 1889.5 108.2 1840.8 151.7 ...
## $ Churn              : Factor w/ 2 levels "No","Yes": 1 1 2 1 2 2 1 1 2 1
...
```

```
summary(cchurn)
```

##	customerID	gender	SeniorCitizen	Partner	Dependents
##	0002-ORFBO: 1	Female:3488	Min. :0.0000	No :3641	No :4933
##	0003-MKNFE: 1	Male :3555	1st Qu.:0.0000	Yes:3402	Yes:2110
##	0004-TLHLJ: 1		Median :0.0000		
##	0011-IGKFF: 1		Mean :0.1621		
##	0013-EXCHZ: 1		3rd Qu.:0.0000		
##	0013-MHZWF: 1		Max. :1.0000		
##	(Other) :7037				
##	tenure	PhoneService	MultipleLines	InternetService	
##	Min. : 0.00	No : 682	No :3390	DSL :2421	
##	1st Qu.: 9.00	Yes:6361	No phone service: 682	Fiber optic:3096	
##	Median :29.00		Yes :2971	No :1526	
##	Mean :32.37				

```

## 3rd Qu.:55.00
## Max.    :72.00
##
##           OnlineSecurity           OnlineBackup
## No           :3498   No           :3088
## No internet service:1526   No internet service:1526
## Yes           :2019   Yes           :2429
##
##
##
##           DeviceProtection           TechSupport
## No           :3095   No           :3473
## No internet service:1526   No internet service:1526
## Yes           :2422   Yes           :2044
##
##
##
##           StreamingTV           StreamingMovies
## No           :2810   No           :2785
## No internet service:1526   No internet service:1526
## Yes           :2707   Yes           :2732
##
##
##
##           Contract   PaperlessBilling           PaymentMethod
## Month-to-month:3875   No :2872           Bank transfer (automatic):1544
## One year           :1473   Yes:4171           Credit card (automatic) :1522
## Two year           :1695           Electronic check           :2365
##                               Mailed check           :1612
##
##
##
## MonthlyCharges   TotalCharges   Churn
## Min.    : 18.25   Min.    : 18.8   No :5174
## 1st Qu.: 35.50   1st Qu.: 401.4   Yes:1869
## Median : 70.35   Median :1397.5
## Mean    : 64.76   Mean    :2283.3
## 3rd Qu.: 89.85   3rd Qu.:3794.7
## Max.    :118.75   Max.    :8684.8
##                               NA's    :11

```

we notice that total charges the only attribute that has missing values (11 NAs)

#Dealing with the missing values

#when we take a look at the missing value in total charges attribute we notice that all the tenure for these customer is 0 which might mean that

these customers are new customers and they haven't been charged yet as they might have been with the company for less than a month

#I checked here if a customer has been with the company for a month. I noticed that monthly charge = total charge

```
cchurn[which(cchurn$tenure == 1), ]
```

##	customerID	gender	SeniorCitizen	Partner	Dependents	tenure
## 1	7590-VHVEG	Female	0	Yes	No	1
## 21	8779-QRDMV	Male	1	No	No	1
## 23	1066-JKSGK	Male	0	No	No	1
## 28	8665-UTDHZ	Male	0	Yes	Yes	1
## 34	7310-EGVHZ	Male	0	No	No	1
## 35	3413-BMNZE	Male	1	No	No	1
## 71	2273-QCKXA	Male	0	No	No	1
## 81	5919-TMRGD	Female	0	No	Yes	1
## 92	2424-WVHPL	Male	1	No	No	1
## 101	6380-ARCEH	Male	0	No	No	1
## 102	3679-XASPY	Female	0	Yes	Yes	1
## 129	3930-ZGWVE	Male	0	No	No	1
## 134	3091-FYHKI	Male	0	No	No	1
## 140	0390-DCFDQ	Female	1	Yes	No	1
## 148	2135-RXIHG	Male	0	No	No	1
## 181	6317-YPKDH	Female	0	No	No	1
## 182	6582-OIVSP	Female	0	No	No	1
## 186	1024-GUALD	Female	0	Yes	No	1
## 200	3645-DEYGF	Male	0	No	Yes	1
## 208	1285-OKIPP	Male	0	No	No	1
## 212	4195-NZGTA	Female	0	No	No	1
## 223	6469-MRVET	Male	0	Yes	Yes	1
## 228	2232-DMLXU	Female	0	Yes	No	1
## 233	8937-RDTHP	Male	0	No	No	1
## 249	0322-YINQP	Male	0	No	No	1
## 253	9514-JDSKI	Male	1	Yes	No	1
## 273	6366-ZGQGL	Male	0	No	No	1
## 275	5940-AHUHD	Male	0	No	No	1
## 283	2080-SRCDE	Female	0	No	Yes	1
## 288	5583-SXDAG	Male	0	Yes	No	1
## 296	8203-XJZRC	Male	0	No	No	1
## 300	6390-DSAZX	Female	0	No	Yes	1
## 311	1098-TDVUQ	Female	0	No	No	1
## 323	8705-WZCYL	Male	0	No	No	1
## 346	0021-IKXGC	Female	1	No	No	1
## 368	7302-ZHMHP	Female	0	No	No	1
## 377	6158-HDPXZ	Male	0	No	No	1
## 382	6905-NIQIN	Male	0	No	No	1
## 384	5167-ZFFMM	Male	0	No	No	1
## 390	5522-JBWMO	Male	0	No	Yes	1
## 409	4800-VHZKI	Female	0	No	No	1
## 410	7989-CHGTL	Male	0	No	No	1

## 420	5564-NEMQO	Female	1	No	No	1
## 440	3577-AMVUX	Male	0	No	No	1
## 447	4110-PFEUZ	Female	0	No	No	1
## 460	1452-VOQCH	Male	0	No	No	1
## 472	3583-EKAPL	Male	0	No	No	1
## 475	9399-APLBT	Female	0	Yes	Yes	1
## 490	8372-JUXUI	Male	0	No	Yes	1
## 495	6579-JPICP	Male	0	No	No	1
## 510	1135-LMECX	Female	0	No	No	1
## 535	9282-IZGQK	Female	0	No	No	1
## 543	2866-IKBTM	Female	0	No	No	1
## 557	2654-VBVPB	Female	0	No	No	1
## 560	3716-UVSPD	Male	0	No	No	1
## 582	3627-FHKBK	Female	0	No	No	1
## 584	1423-BMPBQ	Female	0	Yes	Yes	1
## 586	5192-EBGOV	Female	1	No	No	1
## 595	9244-ZVAPM	Male	0	No	No	1
## 643	0970-ETWGE	Male	0	No	No	1
## 647	0887-HJGAR	Male	0	No	No	1
## 652	2024-BASKD	Female	0	No	No	1
## 663	3030-ZKIWL	Male	0	No	No	1
## 673	3276-HDUEG	Female	0	No	No	1
## 681	1448-PWKYE	Male	0	Yes	Yes	1
## 685	8040-MNRTF	Female	0	No	No	1
## 686	1536-HBSWP	Female	0	No	No	1
## 691	8262-COGBB	Male	0	No	No	1
## 696	2480-JZOSN	Female	0	Yes	No	1
## 711	1029-QFBEN	Male	0	No	No	1
## 761	4013-GUXND	Male	0	No	No	1
## 773	3900-AQPHZ	Female	0	No	No	1
## 784	4678-DVQEO	Female	0	No	No	1
## 799	3807-XHCJH	Female	0	Yes	Yes	1
## 810	1820-TQVEV	Male	0	No	No	1
## 838	6982-SSHFK	Male	0	No	No	1
## 845	3027-ZTDHO	Male	0	No	No	1
## 858	2207-NHRJK	Male	0	No	No	1
## 886	4661-NJEUX	Male	0	No	No	1
## 894	9227-LUNBG	Female	0	No	No	1
## 916	6513-EECDB	Male	1	Yes	No	1
## 956	9448-REEVD	Male	0	Yes	No	1
## 965	9117-SHLZX	Male	0	No	No	1
## 971	7294-TMAOP	Female	0	No	No	1
## 977	5875-YPQFJ	Male	0	No	No	1
## 984	8603-IJWDN	Male	0	No	No	1
## 988	3717-OFRTN	Male	0	No	No	1
## 1014	4065-JJAVA	Female	0	No	No	1
## 1050	8329-IBCTI	Female	0	No	No	1
## 1075	2111-DWYHN	Male	0	No	No	1
## 1096	7439-DKZTW	Male	0	No	No	1
## 1145	0841-NULXI	Male	0	No	No	1

## 1152	8992-CEUEN	Female	0	No	No	1
## 1162	5868-CZJDR	Male	0	No	Yes	1
## 1169	5562-BETPV	Male	0	Yes	Yes	1
## 1174	0107-WESLM	Male	0	No	No	1
## 1186	5673-FSSMF	Female	0	No	No	1
## 1206	6358-LYNGM	Male	0	No	No	1
## 1209	5494-HECPR	Female	0	No	No	1
## 1225	3165-HDOEW	Male	0	Yes	Yes	1
## 1244	5552-ZNFSJ	Male	0	No	No	1
## 1250	2833-SLKDQ	Male	0	No	No	1
## 1252	7595-EUIVN	Female	0	No	No	1
## 1253	7617-EYGLW	Male	0	No	No	1
## 1283	6260-ONULR	Male	0	No	No	1
## 1287	8985-OOPOS	Female	0	No	No	1
## 1320	1725-MIMXW	Male	0	No	Yes	1
## 1326	7206-GZCDC	Female	1	No	No	1
## 1332	7537-RBWEA	Female	0	No	No	1
## 1335	1768-ZAIFU	Female	1	No	No	1
## 1339	1934-SJVJK	Male	0	No	No	1
## 1372	6567-HOOPW	Female	1	No	No	1
## 1374	4291-HPAXL	Male	0	No	Yes	1
## 1384	3334-CTHOL	Female	0	No	No	1
## 1394	2592-YKDIF	Female	0	No	No	1
## 1406	6960-HVYXR	Female	0	No	No	1
## 1429	7767-UXAGJ	Male	0	No	No	1
## 1447	8445-DNBAE	Male	0	No	Yes	1
## 1459	7893-IXHRQ	Male	0	No	No	1
## 1466	1866-OBPNR	Male	0	Yes	Yes	1
## 1489	8695-WDYEA	Male	0	No	No	1
## 1492	8605-ITULD	Female	0	No	No	1
## 1506	5240-IJOQT	Male	1	No	No	1
## 1514	0661-XEYAN	Female	1	No	No	1
## 1550	4237-RLAQD	Male	0	No	No	1
## 1557	3186-BAXNB	Female	0	No	No	1
## 1562	1157-BQCUW	Male	0	No	No	1
## 1572	2812-SFXMJ	Male	0	No	Yes	1
## 1601	3068-OMWZA	Male	1	No	No	1
## 1634	1478-VPOAD	Female	0	No	No	1
## 1651	3049-NDXFL	Female	0	No	No	1
## 1652	8580-AECUZ	Male	1	No	No	1
## 1655	2967-MXRAV	Male	0	Yes	Yes	1
## 1671	5047-LHVLY	Male	1	No	Yes	1
## 1695	0375-HVGXO	Female	0	No	No	1
## 1705	0107-YHINA	Male	0	No	Yes	1
## 1731	3877-JRJIP	Male	0	No	No	1
## 1732	8375-DKEBR	Female	1	No	No	1
## 1734	1015-OWJKI	Male	0	No	No	1
## 1737	7551-JOHTI	Female	0	No	No	1
## 1740	9804-ICWBG	Male	0	No	No	1
## 1775	5207-PLSTK	Male	0	Yes	Yes	1

## 1784	8380-PEFPE	Male	0	No	Yes	1
## 1801	6650-VJONK	Male	0	No	No	1
## 1808	6910-HADCM	Female	0	No	No	1
## 1814	0817-HSUSE	Male	0	No	No	1
## 1817	1663-MHLHE	Male	0	No	No	1
## 1834	8286-AFUYY	Male	0	No	No	1
## 1835	8080-DDEMJ	Male	1	No	No	1
## 1836	8356-WUAOJ	Female	0	Yes	No	1
## 1838	1349-WXNGG	Male	0	No	No	1
## 1853	3669-OYSJI	Male	0	No	No	1
## 1854	1612-EOHDH	Female	0	No	No	1
## 1855	6702-OHFWR	Male	1	No	No	1
## 1862	7054-LGEQW	Female	0	No	No	1
## 1869	3961-SXAXY	Male	0	No	No	1
## 1871	3566-HJGPK	Male	0	No	No	1
## 1880	3494-JCHRQ	Male	0	No	No	1
## 1891	6770-XUAGN	Female	0	Yes	Yes	1
## 1892	4193-ORFCL	Female	1	No	No	1
## 1920	3946-MHCZW	Male	0	No	No	1
## 1930	2018-QKYGT	Male	0	Yes	Yes	1
## 1933	3247-MHJKM	Male	0	No	No	1
## 1939	7243-LCGGZ	Female	0	No	No	1
## 1940	8267-KFGYD	Male	0	No	Yes	1
## 1944	7442-YGZFK	Male	0	No	No	1
## 1954	5054-IEXZT	Male	0	No	Yes	1
## 1955	5834-ASPWA	Male	0	No	No	1
## 1977	9497-QCMMS	Male	1	No	No	1
## 1994	9828-AOQLM	Female	0	Yes	Yes	1
## 1996	8000-REIQB	Female	1	No	No	1
## 2019	7065-YUNRY	Female	0	No	No	1
## 2034	8305-VHZBZ	Male	0	No	No	1
## 2037	8775-ERLNB	Male	1	Yes	No	1
## 2038	8309-IEYJD	Female	1	No	No	1
## 2047	2538-OIMXF	Female	0	No	Yes	1
## 2070	6356-ELRKD	Female	0	No	No	1
## 2078	3177-LASXD	Female	0	No	No	1
## 2084	4897-QSUYC	Female	0	No	No	1
## 2085	1084-UQCHV	Male	0	No	Yes	1
## 2096	9300-REND D	Male	0	No	No	1
## 2097	0761-AETCS	Female	0	No	No	1
## 2117	4349-GFQHK	Male	0	No	No	1
## 2122	0673-IGUQO	Male	0	No	No	1
## 2127	5858-EAFCZ	Male	0	No	No	1
## 2130	9787-XVQIU	Male	0	No	No	1
## 2134	8051-HJRLT	Female	1	No	No	1
## 2135	8974-OVACP	Female	0	No	No	1
## 2153	0248-IPDFW	Female	0	No	No	1
## 2173	1895-QTKDO	Female	0	No	No	1
## 2192	3988-RQIXO	Female	1	No	No	1
## 2195	2514-GINMM	Male	0	No	No	1

## 2209	7216-EWTRS	Female	1	Yes	No	1
## 2239	1393-IMKZG	Female	0	No	No	1
## 2247	7181-BQYBV	Female	0	Yes	Yes	1
## 2256	9537-VHDTA	Female	0	No	Yes	1
## 2270	0151-ONTOV	Female	0	No	No	1
## 2273	8064-RAVOH	Male	0	No	Yes	1
## 2276	7180-PISOG	Male	0	Yes	Yes	1
## 2284	6140-QNRQQ	Male	0	No	No	1
## 2296	2672-DZUOY	Male	0	No	No	1
## 2297	4706-DGAHW	Male	1	No	No	1
## 2362	5103-MHMHY	Female	0	No	Yes	1
## 2364	4373-VVHQL	Male	0	No	No	1
## 2367	1846-XWOQN	Female	1	No	No	1
## 2368	0235-KGSLC	Female	0	No	No	1
## 2372	2712-SYWAY	Female	0	No	No	1
## 2389	9822-OAOVB	Female	0	No	No	1
## 2398	3722-WPXTK	Male	0	No	No	1
## 2423	9603-OAIHC	Male	1	No	No	1
## 2428	7854-FOKSF	Male	0	No	No	1
## 2463	2585-KTFRE	Male	0	No	Yes	1
## 2465	2609-IAICY	Female	0	No	No	1
## 2466	1740-CSDJP	Male	0	No	No	1
## 2511	3707-GNWHM	Male	0	No	No	1
## 2518	5186-SAMNZ	Male	1	No	No	1
## 2527	5766-ZJYBB	Male	0	No	No	1
## 2574	4074-SJFFA	Female	0	No	No	1
## 2578	4910-GMJOT	Female	0	No	No	1
## 2601	2262-SLNVK	Female	0	No	No	1
## 2608	5539-TMZLF	Male	1	No	No	1
## 2614	0137-OCGAB	Female	0	No	No	1
## 2618	4588-YBNIB	Female	0	No	No	1
## 2629	2792-LSHWX	Female	0	No	No	1
## 2635	6877-TJMBR	Male	0	Yes	No	1
## 2646	8562-GHPPI	Female	0	No	No	1
## 2653	4727-MCYZG	Male	0	No	No	1
## 2655	2725-KXXWT	Male	0	Yes	No	1
## 2669	6849-WLEYG	Male	0	No	Yes	1
## 2703	1942-OQFRW	Male	0	No	No	1
## 2704	4749-VFKVB	Female	0	No	No	1
## 2714	5996-DAOQL	Male	0	No	No	1
## 2734	3518-PZXZQ	Female	0	Yes	No	1
## 2741	0415-MOSGF	Female	0	No	No	1
## 2746	4826-XTSOH	Male	1	Yes	No	1
## 2754	6857-VWJDT	Female	0	No	No	1
## 2757	5624-BQSSA	Female	0	No	No	1
## 2760	1194-SPVSP	Male	0	No	No	1
## 2822	4102-OQUPX	Male	1	Yes	No	1
## 2828	1845-ZLLIG	Male	0	No	No	1
## 2829	8559-WNQZS	Male	0	No	No	1
## 2838	2002-MZHWP	Female	0	No	No	1

## 2857	2740-TVLFN	Male	0	No	No	1
## 2862	2004-OCQXK	Female	0	No	No	1
## 2864	4146-SVFUD	Male	0	No	No	1
## 2888	5696-QURRL	Male	0	No	No	1
## 2889	7409-KIUTL	Female	1	No	Yes	1
## 2892	0495-RVCBF	Female	0	No	No	1
## 2893	2668-TZSPS	Male	0	No	No	1
## 2901	0679-IDSTG	Female	1	Yes	Yes	1
## 2912	9747-DDZOS	Female	0	No	No	1
## 2928	5542-TBBWB	Male	0	No	No	1
## 2959	2576-HXMPA	Female	0	No	No	1
## 2978	5906-BFOZT	Male	0	No	No	1
## 2990	3308-MHOOC	Male	0	No	Yes	1
## 2994	2239-CFOUJ	Male	0	Yes	Yes	1
## 2996	2209-XADXF	Female	0	No	No	1
## 3005	3801-HMYNL	Male	0	Yes	Yes	1
## 3010	8896-BQTTI	Male	0	No	No	1
## 3031	1761-AEZZR	Male	0	No	No	1
## 3035	7120-RFMVS	Male	0	No	No	1
## 3042	1406-PUQVY	Male	0	No	Yes	1
## 3045	5692-FPTAH	Female	0	No	No	1
## 3066	5133-POWUA	Male	0	No	No	1
## 3091	2386-LAHRK	Male	0	No	No	1
## 3093	6032-IGALN	Female	0	No	No	1
## 3104	9174-FKWZE	Female	1	No	No	1
## 3111	6569-KTMDU	Female	0	No	No	1
## 3133	2468-SJFLM	Male	0	No	No	1
## 3139	5077-DXTCG	Female	0	No	No	1
## 3143	4892-VLANZ	Male	0	No	No	1
## 3186	9907-SWKKF	Female	1	No	No	1
## 3203	5501-TVMGM	Male	0	No	No	1
## 3210	8149-RSOUN	Female	0	No	No	1
## 3217	7250-EQKIY	Female	0	Yes	Yes	1
## 3242	3148-BLQJT	Male	0	No	No	1
## 3259	7365-BVCJH	Male	0	No	No	1
## 3273	6772-KSATR	Male	0	No	No	1
## 3295	1086-LXKFY	Female	0	Yes	Yes	1
## 3302	2636-ALXXZ	Female	1	No	No	1
## 3311	9885-CSMWE	Female	1	No	No	1
## 3313	9122-UMROB	Male	0	No	No	1
## 3314	4232-JGKIY	Male	0	No	No	1
## 3325	5043-TRZWM	Female	0	No	No	1
## 3329	1640-PLFMP	Female	0	No	No	1
## 3333	7593-XFKDI	Male	0	No	No	1
## 3351	7663-RGWBC	Male	0	No	No	1
## 3353	9124-LHCJQ	Female	0	No	No	1
## 3358	3891-PUQOD	Female	0	No	Yes	1
## 3363	3658-KIBGF	Female	0	No	No	1
## 3377	9629-NHXFW	Female	0	Yes	Yes	1
## 3381	5178-LMXOP	Male	1	Yes	No	1

## 3390	9617-INGJY	Male	0	No	No	1
## 3424	2947-DOMLJ	Male	0	No	Yes	1
## 3427	4510-HIMLV	Male	0	No	No	1
## 3453	8950-MTZNV	Male	0	No	No	1
## 3456	7274-RTAPZ	Male	0	No	No	1
## 3458	8566-YPRGL	Female	0	No	No	1
## 3469	0247-SLUJI	Male	0	Yes	Yes	1
## 3496	4988-IQIGL	Male	1	No	No	1
## 3500	0426-TIRNE	Female	0	No	No	1
## 3510	8710-YGLWG	Male	0	No	No	1
## 3519	8393-JMVMB	Male	0	No	No	1
## 3528	3746-EUBYR	Male	0	Yes	No	1
## 3537	2254-DLXRI	Female	0	No	No	1
## 3552	7594-RQHXR	Female	0	No	Yes	1
## 3566	4317-VTEOA	Male	0	No	No	1
## 3575	4634-JLRJT	Female	0	No	No	1
## 3593	6128-CZOMY	Female	0	No	No	1
## 3599	6185-TASNN	Male	1	No	No	1
## 3632	2722-JMONI	Female	1	Yes	No	1
## 3634	3878-AVSOQ	Female	1	No	No	1
## 3653	0612-RTZZA	Female	1	No	No	1
## 3672	8816-VXNZD	Female	0	No	No	1
## 3675	7825-GKXMW	Female	0	No	No	1
## 3676	9753-OYLBX	Female	0	No	No	1
## 3678	6656-JWRQX	Female	0	No	No	1
## 3680	1240-KNSEZ	Male	0	No	No	1
## 3683	3716-BDVDB	Male	0	No	No	1
## 3690	9488-HGMJH	Female	1	No	No	1
## 3710	2103-ZRFXN	Male	0	No	No	1
## 3726	0968-GSIKN	Female	0	No	No	1
## 3747	4806-HIPDW	Female	0	Yes	No	1
## 3754	1816-FLZDK	Male	0	No	No	1
## 3755	7096-UCLNH	Male	0	No	No	1
## 3757	9136-ALYBR	Male	0	No	No	1
## 3759	8885-QSQBX	Female	0	No	No	1
## 3767	4201-JMNGR	Female	1	No	No	1
## 3772	5960-WPXQM	Male	0	No	No	1
## 3773	0684-AOSIH	Male	0	Yes	No	1
## 3774	8260-NGFNY	Female	0	No	No	1
## 3803	7698-YFGEZ	Male	0	No	No	1
## 3806	8644-XLFBW	Male	1	No	No	1
## 3811	2903-YYTBW	Male	0	Yes	Yes	1
## 3822	1833-VGRUM	Female	1	No	No	1
## 3844	0812-WUPTB	Male	1	Yes	No	1
## 3853	7291-CDTMJ	Male	0	No	No	1
## 3866	5701-SVCWR	Female	0	No	Yes	1
## 3880	7359-PTSXY	Male	0	No	No	1
## 3889	6086-ESGRL	Female	0	No	No	1
## 3903	5999-LCXAO	Female	0	No	No	1
## 3907	6372-RFVNS	Female	0	Yes	No	1

## 3918	3871-IKPYH	Male	1	No	No	1
## 3924	5275-SQEIZ	Male	0	No	No	1
## 3940	8945-GRKHX	Female	0	No	Yes	1
## 3943	6959-UWKHF	Male	0	No	No	1
## 3944	8720-RQSBJ	Male	1	No	No	1
## 3970	2920-RNCEZ	Male	0	Yes	Yes	1
## 3984	1334-FJSVR	Male	0	No	No	1
## 4006	2565-JSLRY	Male	0	No	No	1
## 4011	3727-JEZTU	Female	0	No	No	1
## 4013	6689-KXGBO	Female	0	No	No	1
## 4017	7754-IXRMC	Female	0	No	No	1
## 4022	4255-DDUOU	Female	0	Yes	Yes	1
## 4063	1915-IOFGU	Female	0	No	No	1
## 4065	0374-AACSZ	Female	0	No	No	1
## 4066	7239-HZZCX	Male	0	No	No	1
## 4082	7665-TOALD	Female	0	No	No	1
## 4085	2777-PHDEI	Female	0	No	No	1
## 4091	1453-RZFON	Female	0	No	Yes	1
## 4093	0670-KDOMA	Female	0	No	No	1
## 4095	8687-BAFGU	Male	0	No	No	1
## 4099	5356-RHIPP	Male	0	No	No	1
## 4132	2876-VBBBL	Female	0	No	No	1
## 4139	5597-GLBUC	Female	0	No	No	1
## 4157	2465-BLLEU	Male	0	No	No	1
## 4173	1905-OEILC	Female	0	No	No	1
## 4184	6917-IAYHD	Male	0	No	Yes	1
## 4186	8620-RJPZN	Female	0	No	No	1
## 4213	5797-APWZC	Female	0	No	No	1
## 4222	7926-IJOOU	Male	0	No	No	1
## 4229	6416-TVAIH	Male	0	Yes	Yes	1
## 4233	3066-RRJIO	Female	0	No	No	1
## 4237	2542-HYGIQ	Female	0	No	No	1
## 4243	6124-ACRHJ	Female	0	No	No	1
## 4276	2692-PFYTJ	Female	0	No	No	1
## 4291	7734-DBOAI	Female	0	Yes	Yes	1
## 4316	9019-QVLZD	Female	0	No	No	1
## 4326	2700-LUEVA	Male	0	No	No	1
## 4327	1455-ESIQH	Male	0	No	No	1
## 4349	6121-VZNQB	Female	0	No	No	1
## 4350	7903-CMPEY	Male	1	Yes	No	1
## 4354	6996-KNSML	Female	0	No	No	1
## 4373	4781-ZXYGU	Male	0	Yes	Yes	1
## 4388	5868-YTYKS	Male	0	No	Yes	1
## 4393	3373-YZZYM	Male	0	Yes	Yes	1
## 4397	0023-HGHWL	Male	1	No	No	1
## 4418	0515-YPMCW	Male	0	No	Yes	1
## 4425	4729-XKASR	Male	0	No	Yes	1
## 4444	2672-OJQZP	Female	0	No	No	1
## 4456	8280-MQRQN	Female	0	No	No	1
## 4460	3178-FESZO	Female	0	No	No	1

## 4464	4603-JANFB	Male	0	No	No	1
## 4477	7434-SHXL5	Female	0	No	No	1
## 4481	7908-QCBCA	Female	0	Yes	No	1
## 4485	7465-ZZRVX	Male	0	No	No	1
## 4492	7853-WNZSY	Male	0	No	No	1
## 4496	4702-IOQDC	Female	0	No	No	1
## 4510	2013-SGDXX	Female	0	No	No	1
## 4521	3506-LCJDC	Male	0	Yes	Yes	1
## 4535	2607-FBDFE	Male	0	No	No	1
## 4537	3428-XZMAZ	Male	0	No	No	1
## 4541	6728-WYQBC	Male	0	No	No	1
## 4542	9058-CBRE0	Female	1	No	No	1
## 4545	0318-QUUOB	Male	0	Yes	No	1
## 4546	6145-NNPNO	Female	0	No	No	1
## 4565	4877-EVATK	Male	0	No	No	1
## 4586	1069-XAIEM	Female	1	No	No	1
## 4608	2853-CWQFQ	Male	0	No	Yes	1
## 4633	4760-XOHVN	Female	0	Yes	Yes	1
## 4641	1853-UDXBW	Male	0	Yes	Yes	1
## 4642	9895-VFOXH	Female	0	No	No	1
## 4647	5032-MIYKT	Female	0	No	No	1
## 4705	1928-BXYIV	Male	0	No	No	1
## 4707	6595-COKXZ	Female	0	No	No	1
## 4722	4211-MMAZN	Male	0	No	No	1
## 4724	4274-OWWYO	Male	0	No	No	1
## 4726	1541-ETJZO	Male	0	No	No	1
## 4758	1582-RAFML	Male	0	No	No	1
## 4760	8740-CRYFY	Male	0	No	No	1
## 4768	1064-FBXNK	Male	0	Yes	Yes	1
## 4785	1622-HSHSF	Female	0	No	No	1
## 4790	0511-JTEOY	Female	0	No	No	1
## 4801	9300-AGZNL	Male	1	No	No	1
## 4810	7814-LEEVE	Female	0	Yes	No	1
## 4818	6654-QGBZZ	Female	0	No	No	1
## 4824	9732-KPKBW	Male	0	No	No	1
## 4838	5134-IKDAY	Female	0	Yes	Yes	1
## 4902	3765-JXVKY	Female	0	No	No	1
## 4925	5378-IKEEG	Female	0	No	No	1
## 4931	8180-AKMJV	Female	0	No	No	1
## 4940	9975-SKRNR	Male	0	No	No	1
## 4955	9725-SCPZG	Male	0	No	Yes	1
## 4956	5884-GCYMI	Male	0	No	No	1
## 4960	7853-GVUDZ	Female	0	Yes	Yes	1
## 4979	4855-SNKMY	Female	0	No	No	1
## 5024	6653-CBBOM	Female	0	No	No	1
## 5034	7298-IZWLY	Female	0	No	No	1
## 5047	7252-NTGSS	Female	0	No	No	1
## 5050	2955-PSXOE	Female	0	No	No	1
## 5072	1746-TGTWV	Male	0	Yes	No	1
## 5101	9940-RHLFB	Female	0	No	No	1

## 5117	4759-TRPLW	Male	0	No	No	1
## 5136	1156-ZFYDO	Female	0	No	No	1
## 5141	7577-SWIFR	Male	0	No	No	1
## 5161	9840-EFJQB	Female	0	No	No	1
## 5166	8062-YBDOE	Male	1	No	No	1
## 5171	7721-DVEKZ	Female	0	No	No	1
## 5187	3776-EKTKM	Female	1	No	No	1
## 5190	6907-FLBER	Male	0	No	No	1
## 5220	3976-NLDEZ	Male	0	No	No	1
## 5288	9708-KFDBY	Male	0	No	No	1
## 5289	8058-INTPH	Female	0	No	No	1
## 5301	8821-XNHVZ	Female	0	Yes	Yes	1
## 5308	1941-HOSAM	Male	0	Yes	Yes	1
## 5313	9564-KCLHR	Male	0	No	No	1
## 5316	2082-CEFLT	Male	0	No	No	1
## 5337	9441-QHEVC	Male	0	No	No	1
## 5342	2982-IHMFT	Female	1	No	No	1
## 5355	4273-MBHYA	Female	0	No	Yes	1
## 5376	9637-EIHEQ	Female	0	No	No	1
## 5389	5515-IDEJJ	Male	0	Yes	Yes	1
## 5394	5376-DEQCP	Female	0	No	No	1
## 5412	7932-WPTDS	Female	1	Yes	No	1
## 5437	7246-ZGQDF	Female	0	No	Yes	1
## 5447	6141-00XUQ	Male	0	No	No	1
## 5451	7503-ZGUZJ	Male	0	No	No	1
## 5455	2506-TNFCO	Female	1	Yes	No	1
## 5464	6142-VSJQO	Female	0	Yes	Yes	1
## 5475	4912-PIGUY	Female	0	No	No	1
## 5481	2275-RBYQS	Female	0	No	No	1
## 5482	8473-VUVJN	Male	1	No	No	1
## 5486	7794-JASDG	Male	0	No	No	1
## 5499	1976-CFOCS	Female	1	Yes	No	1
## 5507	8048-DSDFQ	Male	0	No	No	1
## 5515	0623-GDISB	Female	0	No	No	1
## 5520	2043-WVTQJ	Male	0	Yes	No	1
## 5523	2619-WFQWU	Female	0	No	No	1
## 5539	4614-NUVZD	Female	0	No	No	1
## 5541	3803-KMQFW	Female	0	Yes	Yes	1
## 5554	6629-CZTTH	Male	0	No	No	1
## 5562	5088-QZLRL	Male	0	No	No	1
## 5574	5550-VFRLC	Female	1	No	No	1
## 5577	4929-BSTRX	Female	0	No	No	1
## 5586	4667-OHGKG	Male	0	No	No	1
## 5589	1660-HSOOQ	Male	0	No	No	1
## 5604	1794-HBQTJ	Female	0	No	No	1
## 5616	1493-AMTIE	Male	0	No	No	1
## 5630	5028-HTLJB	Male	1	No	No	1
## 5635	2320-JRSDE	Female	0	Yes	Yes	1
## 5639	5143-WMWOG	Male	0	No	No	1
## 5641	5393-RXQSZ	Male	0	No	No	1

## 5644	0231-LXVAP	Male	0	No	No	1
## 5645	9444-JTXHZ	Male	0	Yes	No	1
## 5647	5510-BOIUJ	Male	0	No	Yes	1
## 5653	9752-ZNQUT	Female	0	No	No	1
## 5657	7312-XSBAT	Male	0	No	No	1
## 5663	3244-DCJWY	Female	0	No	No	1
## 5677	9103-CXVOK	Male	0	Yes	Yes	1
## 5679	4797-AXPKX	Female	0	No	Yes	1
## 5681	6982-UQZLY	Female	1	Yes	No	1
## 5683	3841-CONLJ	Female	0	Yes	No	1
## 5706	3785-NRHYR	Male	0	No	No	1
## 5707	5196-SGOAK	Female	0	No	No	1
## 5725	8042-JVNFH	Male	0	No	No	1
## 5737	8749-CLJXC	Male	0	No	No	1
## 5739	5049-GLYVG	Male	0	No	No	1
## 5760	9985-MWVIX	Female	0	No	No	1
## 5779	3090-QFUVD	Female	0	No	No	1
## 5783	4871-JTKJF	Female	1	No	No	1
## 5784	1415-YFWLT	Female	1	No	No	1
## 5813	3422-LYEPQ	Male	0	Yes	Yes	1
## 5818	4361-JEIVL	Male	0	No	Yes	1
## 5826	1363-TXLSL	Male	1	Yes	No	1
## 5827	9507-EXLTT	Female	0	Yes	No	1
## 5869	9214-EKVXR	Female	0	No	No	1
## 5873	4550-EVXNY	Female	0	No	Yes	1
## 5877	4844-JJWUY	Female	1	No	No	1
## 5906	1628-BIZYP	Male	0	No	No	1
## 5908	0082-LDZUE	Male	0	No	No	1
## 5909	4786-UKSNZ	Male	0	No	No	1
## 5944	2202-CUYXZ	Male	0	No	No	1
## 5951	2862-PFNIK	Male	0	No	Yes	1
## 5954	6888-SBYAI	Male	0	No	No	1
## 5962	2049-BAFNW	Female	0	No	No	1
## 5988	1099-GODLO	Female	0	Yes	Yes	1
## 6002	4367-NHWMM	Female	0	No	No	1
## 6041	0519-XUZJU	Female	0	No	No	1
## 6065	7568-PODML	Male	0	No	No	1
## 6075	3797-VTIDR	Male	0	Yes	No	1
## 6081	9526-BIHHD	Male	0	No	No	1
## 6082	8757-TFHHJ	Male	0	No	No	1
## 6089	3063-QFSZL	Female	0	No	No	1
## 6090	8775-LHDJH	Female	1	Yes	No	1
## 6097	9605-WGJVV	Female	1	No	No	1
## 6108	6286-SUUWT	Male	0	No	No	1
## 6150	3069-SSVSN	Female	0	No	No	1
## 6169	2868-MZAGQ	Male	0	No	No	1
## 6170	4847-QNOKA	Female	0	No	No	1
## 6171	2220-IAHLS	Female	0	No	No	1
## 6191	2867-UIMSS	Male	0	No	No	1
## 6220	1496-GGSUK	Female	1	No	No	1

## 6231	9962-BFPDU	Female	0	Yes	Yes	1
## 6232	3296-SILRA	Female	1	Yes	No	1
## 6238	7153-OANIO	Male	0	No	No	1
## 6241	6521-YYTYI	Male	0	No	Yes	1
## 6252	9374-YOLBJ	Female	0	Yes	Yes	1
## 6257	3751-KTZEL	Female	0	No	No	1
## 6258	1977-STDKI	Female	1	No	No	1
## 6268	0328-GRPMV	Female	0	No	No	1
## 6295	6615-ZGEDR	Male	0	No	No	1
## 6318	7493-TPUWZ	Male	0	No	No	1
## 6339	2081-KJSQF	Male	0	No	No	1
## 6340	7623-TRNQN	Male	0	No	Yes	1
## 6347	9661-MHUMO	Male	1	Yes	Yes	1
## 6361	8073-IJDCM	Female	0	No	No	1
## 6376	9894-EZEWG	Female	0	No	No	1
## 6378	7851-FLGGQ	Male	0	No	No	1
## 6382	0927-CNGRH	Male	0	No	Yes	1
## 6389	1963-VAUKV	Female	0	No	No	1
## 6435	6608-QQLVK	Male	0	No	No	1
## 6439	3551-HUAZH	Male	1	No	No	1
## 6450	7601-WFVZV	Male	0	No	No	1
## 6474	9223-UCPVT	Female	0	No	No	1
## 6480	4351-QLCSU	Female	0	No	No	1
## 6483	5419-JPRRN	Male	0	No	No	1
## 6489	0488-GSLFR	Female	0	No	No	1
## 6490	9318-NKNFC	Male	0	No	No	1
## 6492	9728-FTTVZ	Female	0	No	No	1
## 6496	7254-IQWOZ	Male	0	No	No	1
## 6499	0742-NXBGR	Female	0	No	No	1
## 6500	2676-ISHSF	Male	0	No	No	1
## 6510	0616-ATFGB	Male	1	Yes	No	1
## 6517	6876-ADESB	Male	0	No	Yes	1
## 6519	1963-SVUCV	Male	0	No	No	1
## 6537	3439-GVUSX	Male	0	No	No	1
## 6550	5909-ECHUI	Female	0	No	No	1
## 6555	2856-HYAPG	Female	0	No	No	1
## 6591	1031-IIDEO	Female	0	No	No	1
## 6608	7242-QZLXF	Male	0	No	Yes	1
## 6610	1000-AJS LD	Male	0	No	No	1
## 6613	1062-LHZOD	Male	0	Yes	Yes	1
## 6621	6457-USB ER	Male	0	No	No	1
## 6624	9248-OJYKK	Male	1	No	No	1
## 6634	4415-IJZTP	Female	0	No	No	1
## 6661	1447-GIQMR	Male	0	Yes	No	1
## 6664	0674-EYYZV	Female	0	No	No	1
## 6707	7878-RTCZG	Female	0	No	No	1
## 6739	3590-TCXTB	Male	0	No	No	1
## 6749	6230-BSUXY	Female	1	No	No	1
## 6762	2369-FEVNO	Male	0	No	No	1
## 6765	7660-HDPJV	Female	0	No	No	1

##	6775	0970-QXPXW	Female	0	No	No	1
##	6790	7839-QRKXN	Female	0	No	No	1
##	6812	8992-JQYUN	Male	0	Yes	No	1
##	6817	2446-PLQVO	Male	0	No	No	1
##	6841	1724-IQWNM	Male	0	No	Yes	1
##	6846	6127-IYJOZ	Male	1	No	No	1
##	6847	6618-RYATB	Female	0	No	No	1
##	6867	0295-PPHDO	Male	0	No	No	1
##	6878	4501-EQDRN	Female	0	No	No	1
##	6897	3085-QUOZK	Female	0	No	No	1
##	6900	3926-CUQZX	Male	0	No	No	1
##	6910	9108-EJFJP	Female	0	Yes	No	1
##	6925	6457-GIRWB	Male	0	No	No	1
##	6934	6502-MJQAE	Male	0	No	No	1
##	6944	0032-PGELS	Female	0	Yes	Yes	1
##	6970	4745-LSPLO	Male	0	No	No	1
##	6980	5351-QESIO	Male	0	No	Yes	1
##	7011	0723-DRCLG	Female	1	Yes	No	1
##	7017	1471-GIQKQ	Female	0	No	No	1
##	7019	1122-JWTJW	Male	0	Yes	Yes	1
##	7033	6894-LFHLY	Male	1	No	No	1
##		PhoneService	MultipleLines	InternetService		OnlineSecurity	
##	1	No	No phone service	DSL		No	
##	21	No	No phone service	DSL		No	
##	23	Yes	No	No	No internet service		
##	28	No	No phone service	DSL		No	
##	34	Yes	No	No	No internet service		
##	35	Yes	No	DSL		No	
##	71	Yes	No	DSL		No	
##	81	Yes	No	Fiber optic		No	
##	92	Yes	No	Fiber optic		No	
##	101	Yes	No	No	No internet service		
##	102	Yes	No	No	No internet service		
##	129	Yes	No	No	No internet service		
##	134	No	No phone service	DSL		No	
##	140	Yes	No	Fiber optic		No	
##	148	Yes	No	DSL		No	
##	181	No	No phone service	DSL		No	
##	182	Yes	No	DSL		No	
##	186	No	No phone service	DSL		No	
##	200	Yes	No	No	No internet service		
##	208	Yes	No	Fiber optic		No	
##	212	No	No phone service	DSL		No	
##	223	Yes	No	No	No internet service		
##	228	Yes	No	DSL		No	
##	233	Yes	No	Fiber optic		Yes	
##	249	Yes	No	DSL		Yes	
##	253	No	No phone service	DSL		No	
##	273	No	No phone service	DSL		No	
##	275	Yes	No	Fiber optic		No	

## 283	Yes	Yes	No	No internet service
## 288	Yes	No	Fiber optic	No
## 296	Yes	No	No	No internet service
## 300	Yes	No	Fiber optic	Yes
## 311	Yes	No	No	No internet service
## 323	Yes	No	DSL	No
## 346	Yes	Yes	Fiber optic	No
## 368	Yes	No	No	No internet service
## 377	No	No phone service	DSL	No
## 382	Yes	No	DSL	No
## 384	Yes	Yes	Fiber optic	No
## 390	Yes	No	DSL	No
## 409	Yes	No	No	No internet service
## 410	Yes	No	No	No internet service
## 420	Yes	No	Fiber optic	No
## 440	Yes	No	DSL	No
## 447	Yes	No	Fiber optic	No
## 460	Yes	Yes	Fiber optic	No
## 472	Yes	No	DSL	No
## 475	Yes	No	Fiber optic	No
## 490	Yes	Yes	Fiber optic	No
## 495	Yes	No	No	No internet service
## 510	Yes	No	No	No internet service
## 535	Yes	Yes	Fiber optic	No
## 543	Yes	No	No	No internet service
## 557	Yes	No	No	No internet service
## 560	Yes	No	DSL	No
## 582	Yes	No	Fiber optic	Yes
## 584	Yes	No	No	No internet service
## 586	Yes	Yes	Fiber optic	No
## 595	Yes	No	DSL	No
## 643	Yes	No	Fiber optic	No
## 647	Yes	No	DSL	No
## 652	Yes	No	Fiber optic	No
## 663	Yes	No	No	No internet service
## 673	Yes	Yes	Fiber optic	No
## 681	Yes	No	Fiber optic	No
## 685	Yes	No	Fiber optic	No
## 686	Yes	No	DSL	No
## 691	Yes	No	No	No internet service
## 696	Yes	No	No	No internet service
## 711	Yes	No	No	No internet service
## 761	Yes	No	No	No internet service
## 773	Yes	No	No	No internet service
## 784	Yes	No	DSL	No
## 799	Yes	No	No	No internet service
## 810	Yes	No	Fiber optic	No
## 838	Yes	No	DSL	No
## 845	Yes	No	Fiber optic	No
## 858	Yes	No	DSL	No

## 886	Yes	No	No	No internet service
## 894	No	No phone service	DSL	No
## 916	Yes	Yes	Fiber optic	No
## 956	Yes	No	DSL	No
## 965	Yes	No	DSL	No
## 971	Yes	No	Fiber optic	No
## 977	Yes	No	Fiber optic	No
## 984	Yes	Yes	Fiber optic	No
## 988	Yes	No	No	No internet service
## 1014	Yes	No	DSL	No
## 1050	Yes	No	No	No internet service
## 1075	Yes	No	No	No internet service
## 1096	Yes	No	Fiber optic	No
## 1145	No	No phone service	DSL	No
## 1152	Yes	No	No	No internet service
## 1162	No	No phone service	DSL	No
## 1169	Yes	No	No	No internet service
## 1174	Yes	No	No	No internet service
## 1186	Yes	Yes	DSL	No
## 1206	Yes	Yes	Fiber optic	No
## 1209	Yes	No	Fiber optic	No
## 1225	Yes	No	DSL	No
## 1244	Yes	No	DSL	No
## 1250	Yes	No	DSL	No
## 1252	Yes	No	Fiber optic	No
## 1253	Yes	No	No	No internet service
## 1283	Yes	No	DSL	No
## 1287	Yes	No	DSL	No
## 1320	Yes	No	No	No internet service
## 1326	Yes	No	Fiber optic	No
## 1332	No	No phone service	DSL	No
## 1335	No	No phone service	DSL	No
## 1339	Yes	No	No	No internet service
## 1372	Yes	No	Fiber optic	No
## 1374	Yes	No	No	No internet service
## 1384	Yes	Yes	DSL	No
## 1394	Yes	No	No	No internet service
## 1406	Yes	Yes	Fiber optic	No
## 1429	Yes	Yes	DSL	No
## 1447	Yes	Yes	DSL	No
## 1459	Yes	No	No	No internet service
## 1466	Yes	No	Fiber optic	No
## 1489	Yes	No	DSL	Yes
## 1492	Yes	No	No	No internet service
## 1506	Yes	Yes	Fiber optic	No
## 1514	No	No phone service	DSL	No
## 1550	Yes	No	DSL	No
## 1557	Yes	No	Fiber optic	No
## 1562	Yes	Yes	Fiber optic	No
## 1572	Yes	No	No	No internet service

## 1601	Yes	Yes	Fiber optic	No
## 1634	Yes	No	DSL	No
## 1651	Yes	Yes	Fiber optic	No
## 1652	Yes	No	Fiber optic	No
## 1655	Yes	No	No No internet service	
## 1671	Yes	No	DSL	No
## 1695	No	No phone service	DSL	No
## 1705	Yes	Yes	Fiber optic	No
## 1731	Yes	Yes	DSL	No
## 1732	Yes	No	Fiber optic	No
## 1734	Yes	No	No No internet service	
## 1737	Yes	No	No No internet service	
## 1740	Yes	No	Fiber optic	No
## 1775	Yes	No	DSL	Yes
## 1784	Yes	No	Fiber optic	No
## 1801	Yes	No	DSL	No
## 1808	Yes	No	Fiber optic	No
## 1814	Yes	No	DSL	No
## 1817	Yes	No	No No internet service	
## 1834	Yes	No	DSL	Yes
## 1835	Yes	No	DSL	No
## 1836	Yes	No	DSL	No
## 1838	Yes	No	No No internet service	
## 1853	Yes	No	DSL	No
## 1854	Yes	No	DSL	No
## 1855	No	No phone service	DSL	No
## 1862	Yes	No	DSL	No
## 1869	Yes	No	DSL	No
## 1871	Yes	No	DSL	No
## 1880	Yes	No	Fiber optic	No
## 1891	Yes	No	No No internet service	
## 1892	Yes	No	DSL	No
## 1920	Yes	No	DSL	No
## 1930	Yes	No	Fiber optic	No
## 1933	Yes	No	No No internet service	
## 1939	Yes	No	No No internet service	
## 1940	Yes	No	No No internet service	
## 1944	Yes	Yes	DSL	No
## 1954	Yes	No	Fiber optic	No
## 1955	Yes	Yes	Fiber optic	No
## 1977	Yes	Yes	Fiber optic	No
## 1994	Yes	No	DSL	No
## 1996	Yes	No	Fiber optic	No
## 2019	Yes	No	DSL	No
## 2034	Yes	No	No No internet service	
## 2037	Yes	Yes	Fiber optic	No
## 2038	Yes	No	Fiber optic	No
## 2047	No	No phone service	DSL	No
## 2070	Yes	No	Fiber optic	Yes
## 2078	Yes	No	Fiber optic	No

## 2084	Yes	No	No	No internet service
## 2085	Yes	No	Fiber optic	No
## 2096	Yes	No	Fiber optic	No
## 2097	Yes	No	No	No internet service
## 2117	Yes	Yes	DSL	No
## 2122	Yes	No	No	No internet service
## 2127	Yes	No	DSL	No
## 2130	Yes	Yes	Fiber optic	No
## 2134	Yes	No	Fiber optic	No
## 2135	Yes	No	No	No internet service
## 2153	Yes	Yes	DSL	No
## 2173	Yes	No	DSL	No
## 2192	Yes	No	Fiber optic	No
## 2195	Yes	No	Fiber optic	No
## 2209	Yes	Yes	Fiber optic	No
## 2239	Yes	No	Fiber optic	No
## 2247	Yes	Yes	Fiber optic	Yes
## 2256	Yes	No	DSL	Yes
## 2270	Yes	No	Fiber optic	No
## 2273	Yes	No	DSL	No
## 2276	Yes	Yes	Fiber optic	No
## 2284	Yes	No	Fiber optic	No
## 2296	No	No phone service	DSL	No
## 2297	Yes	No	DSL	No
## 2362	Yes	No	DSL	No
## 2364	Yes	No	DSL	No
## 2367	Yes	No	Fiber optic	No
## 2368	Yes	No	Fiber optic	No
## 2372	Yes	Yes	No	No internet service
## 2389	Yes	No	DSL	No
## 2398	Yes	No	Fiber optic	No
## 2423	Yes	No	Fiber optic	No
## 2428	No	No phone service	DSL	No
## 2463	Yes	No	DSL	Yes
## 2465	Yes	Yes	Fiber optic	No
## 2466	No	No phone service	DSL	No
## 2511	Yes	Yes	Fiber optic	No
## 2518	Yes	No	Fiber optic	No
## 2527	Yes	No	No	No internet service
## 2574	Yes	No	DSL	No
## 2578	Yes	Yes	Fiber optic	No
## 2601	Yes	No	Fiber optic	No
## 2608	Yes	No	Fiber optic	No
## 2614	Yes	Yes	Fiber optic	No
## 2618	Yes	No	No	No internet service
## 2629	Yes	No	Fiber optic	Yes
## 2635	Yes	No	Fiber optic	No
## 2646	Yes	No	No	No internet service
## 2653	Yes	No	DSL	No
## 2655	Yes	No	Fiber optic	No

## 2669	Yes	No	No	No internet service
## 2703	Yes	No	DSL	No
## 2704	Yes	Yes	DSL	No
## 2714	Yes	No	No	No internet service
## 2734	Yes	No	DSL	No
## 2741	Yes	No	DSL	No
## 2746	Yes	Yes	Fiber optic	No
## 2754	Yes	Yes	Fiber optic	No
## 2757	Yes	No	No	No internet service
## 2760	Yes	No	No	No internet service
## 2822	Yes	Yes	Fiber optic	No
## 2828	Yes	No	DSL	No
## 2829	Yes	No	No	No internet service
## 2838	Yes	No	No	No internet service
## 2857	Yes	Yes	DSL	No
## 2862	Yes	No	Fiber optic	No
## 2864	Yes	No	DSL	No
## 2888	Yes	No	DSL	No
## 2889	Yes	No	Fiber optic	No
## 2892	Yes	No	Fiber optic	No
## 2893	Yes	No	No	No internet service
## 2901	Yes	No	Fiber optic	No
## 2912	Yes	No	Fiber optic	No
## 2928	Yes	No	Fiber optic	No
## 2959	Yes	No	No	No internet service
## 2978	Yes	No	No	No internet service
## 2990	Yes	No	No	No internet service
## 2994	Yes	No	No	No internet service
## 2996	No	No phone service	DSL	No
## 3005	Yes	No	Fiber optic	No
## 3010	Yes	Yes	No	No internet service
## 3031	Yes	No	Fiber optic	No
## 3035	Yes	Yes	Fiber optic	No
## 3042	Yes	No	DSL	No
## 3045	Yes	No	DSL	No
## 3066	Yes	No	DSL	No
## 3091	Yes	No	DSL	No
## 3093	No	No phone service	DSL	No
## 3104	Yes	No	No	No internet service
## 3111	Yes	No	No	No internet service
## 3133	Yes	No	Fiber optic	No
## 3139	Yes	No	DSL	No
## 3143	Yes	No	No	No internet service
## 3186	No	No phone service	DSL	No
## 3203	Yes	No	DSL	No
## 3210	Yes	Yes	Fiber optic	No
## 3217	Yes	No	DSL	No
## 3242	Yes	No	No	No internet service
## 3259	No	No phone service	DSL	No
## 3273	Yes	Yes	Fiber optic	Yes

## 3295	Yes	No	Fiber optic	No
## 3302	Yes	No	Fiber optic	No
## 3311	Yes	No	Fiber optic	No
## 3313	Yes	No	No No internet service	
## 3314	Yes	No	No No internet service	
## 3325	Yes	No	Fiber optic	No
## 3329	Yes	No	Fiber optic	No
## 3333	Yes	No	DSL	No
## 3351	Yes	No	DSL	No
## 3353	Yes	Yes	Fiber optic	No
## 3358	Yes	No	DSL	No
## 3363	Yes	No	DSL	Yes
## 3377	Yes	No	No No internet service	
## 3381	Yes	Yes	Fiber optic	No
## 3390	Yes	No	Fiber optic	No
## 3424	Yes	No	DSL	Yes
## 3427	Yes	No	Fiber optic	No
## 3453	Yes	No	DSL	No
## 3456	Yes	No	Fiber optic	No
## 3458	Yes	No	No No internet service	
## 3469	Yes	No	No No internet service	
## 3496	Yes	Yes	Fiber optic	No
## 3500	Yes	No	No No internet service	
## 3510	Yes	No	DSL	No
## 3519	Yes	No	No No internet service	
## 3528	Yes	Yes	Fiber optic	No
## 3537	Yes	Yes	Fiber optic	No
## 3552	Yes	No	Fiber optic	No
## 3566	Yes	No	DSL	No
## 3575	Yes	No	No No internet service	
## 3593	Yes	No	DSL	No
## 3599	Yes	No	DSL	No
## 3632	Yes	No	DSL	Yes
## 3634	Yes	No	Fiber optic	No
## 3653	No No phone service		DSL	No
## 3672	Yes	Yes	Fiber optic	No
## 3675	Yes	No	DSL	No
## 3676	Yes	No	No No internet service	
## 3678	No No phone service		DSL	No
## 3680	Yes	No	No No internet service	
## 3683	Yes	No	Fiber optic	No
## 3690	Yes	No	Fiber optic	No
## 3710	Yes	Yes	DSL	No
## 3726	Yes	No	Fiber optic	No
## 3747	Yes	No	Fiber optic	No
## 3754	No No phone service		DSL	No
## 3755	Yes	No	No No internet service	
## 3757	No No phone service		DSL	No
## 3759	Yes	No	DSL	Yes
## 3767	Yes	No	DSL	Yes

## 3772	Yes	No	Fiber optic	No
## 3773	Yes	No	Fiber optic	Yes
## 3774	No	No phone service	DSL	No
## 3803	Yes	No	No	No internet service
## 3806	Yes	No	Fiber optic	No
## 3811	Yes	No	DSL	No
## 3822	Yes	Yes	Fiber optic	No
## 3844	Yes	No	Fiber optic	No
## 3853	Yes	No	No	No internet service
## 3866	Yes	Yes	No	No internet service
## 3880	Yes	No	DSL	No
## 3889	Yes	No	Fiber optic	No
## 3903	No	No phone service	DSL	Yes
## 3907	Yes	No	Fiber optic	No
## 3918	Yes	No	Fiber optic	No
## 3924	Yes	No	Fiber optic	No
## 3940	Yes	No	Fiber optic	No
## 3943	Yes	No	DSL	No
## 3944	Yes	No	DSL	No
## 3970	Yes	No	Fiber optic	No
## 3984	No	No phone service	DSL	No
## 4006	Yes	Yes	No	No internet service
## 4011	Yes	No	No	No internet service
## 4013	Yes	No	DSL	No
## 4017	Yes	No	DSL	No
## 4022	Yes	No	No	No internet service
## 4063	Yes	No	Fiber optic	No
## 4065	Yes	No	DSL	Yes
## 4066	Yes	No	No	No internet service
## 4082	Yes	No	Fiber optic	No
## 4085	Yes	No	Fiber optic	No
## 4091	Yes	No	DSL	Yes
## 4093	Yes	No	No	No internet service
## 4095	Yes	No	Fiber optic	No
## 4099	Yes	No	No	No internet service
## 4132	Yes	No	No	No internet service
## 4139	Yes	No	Fiber optic	No
## 4157	Yes	No	No	No internet service
## 4173	Yes	No	No	No internet service
## 4184	No	No phone service	DSL	No
## 4186	Yes	No	No	No internet service
## 4213	Yes	No	Fiber optic	No
## 4222	Yes	No	No	No internet service
## 4229	Yes	No	Fiber optic	No
## 4233	Yes	No	Fiber optic	No
## 4237	Yes	No	No	No internet service
## 4243	Yes	No	No	No internet service
## 4276	Yes	Yes	No	No internet service
## 4291	No	No phone service	DSL	No
## 4316	Yes	No	Fiber optic	No

## 4326	Yes	No	No No internet service
## 4327	Yes	No	Fiber optic No
## 4349	Yes	No	No No internet service
## 4350	Yes	Yes	Fiber optic Yes
## 4354	Yes	No	Fiber optic No
## 4373	Yes	No	No No internet service
## 4388	Yes	No	No No internet service
## 4393	Yes	No	No No internet service
## 4397	No No phone service		DSL No
## 4418	Yes	No	Fiber optic No
## 4425	No No phone service		DSL No
## 4444	Yes	No	DSL No
## 4456	Yes	No	DSL No
## 4460	Yes	Yes	Fiber optic No
## 4464	Yes	No	Fiber optic No
## 4477	Yes	No	No No internet service
## 4481	Yes	No	Fiber optic No
## 4485	Yes	No	Fiber optic No
## 4492	Yes	No	No No internet service
## 4496	Yes	No	Fiber optic No
## 4510	Yes	No	Fiber optic No
## 4521	Yes	No	No No internet service
## 4535	Yes	No	DSL No
## 4537	Yes	No	Fiber optic No
## 4541	Yes	No	No No internet service
## 4542	Yes	Yes	DSL No
## 4545	Yes	No	Fiber optic No
## 4546	Yes	No	DSL No
## 4565	Yes	No	No No internet service
## 4586	Yes	Yes	Fiber optic No
## 4608	Yes	No	DSL No
## 4633	Yes	No	No No internet service
## 4641	Yes	No	Fiber optic No
## 4642	No No phone service		DSL No
## 4647	Yes	No	Fiber optic No
## 4705	Yes	Yes	DSL Yes
## 4707	Yes	No	DSL No
## 4722	Yes	No	No No internet service
## 4724	Yes	No	Fiber optic No
## 4726	Yes	Yes	DSL No
## 4758	Yes	Yes	DSL No
## 4760	Yes	No	Fiber optic No
## 4768	Yes	No	No No internet service
## 4785	Yes	No	No No internet service
## 4790	Yes	No	Fiber optic No
## 4801	Yes	Yes	Fiber optic No
## 4810	Yes	No	No No internet service
## 4818	Yes	No	No No internet service
## 4824	Yes	No	DSL Yes
## 4838	Yes	No	Fiber optic No

## 4902	Yes	No	Fiber optic	No
## 4925	No	No phone service	DSL	No
## 4931	Yes	No	DSL	No
## 4940	Yes	No	No	No internet service
## 4955	Yes	No	Fiber optic	No
## 4956	Yes	No	Fiber optic	No
## 4960	Yes	No	No	No internet service
## 4979	Yes	No	DSL	No
## 5024	Yes	No	Fiber optic	No
## 5034	Yes	No	No	No internet service
## 5047	Yes	No	DSL	No
## 5050	Yes	No	No	No internet service
## 5072	Yes	No	Fiber optic	No
## 5101	Yes	No	Fiber optic	No
## 5117	Yes	No	Fiber optic	No
## 5136	Yes	No	No	No internet service
## 5141	Yes	No	Fiber optic	No
## 5161	Yes	No	Fiber optic	No
## 5166	Yes	No	Fiber optic	No
## 5171	Yes	No	No	No internet service
## 5187	No	No phone service	DSL	No
## 5190	Yes	Yes	DSL	No
## 5220	Yes	No	No	No internet service
## 5288	Yes	No	No	No internet service
## 5289	Yes	No	Fiber optic	No
## 5301	Yes	No	Fiber optic	No
## 5308	Yes	No	Fiber optic	No
## 5313	Yes	No	DSL	No
## 5316	Yes	No	DSL	No
## 5337	Yes	No	No	No internet service
## 5342	Yes	Yes	Fiber optic	No
## 5355	Yes	No	Fiber optic	No
## 5376	Yes	No	DSL	No
## 5389	Yes	No	No	No internet service
## 5394	Yes	No	Fiber optic	No
## 5412	No	No phone service	DSL	No
## 5437	Yes	No	DSL	Yes
## 5447	Yes	No	No	No internet service
## 5451	Yes	Yes	Fiber optic	No
## 5455	Yes	No	Fiber optic	No
## 5464	Yes	No	DSL	No
## 5475	Yes	Yes	Fiber optic	No
## 5481	Yes	No	DSL	No
## 5482	Yes	Yes	Fiber optic	No
## 5486	Yes	No	DSL	Yes
## 5499	Yes	No	DSL	No
## 5507	Yes	No	No	No internet service
## 5515	Yes	No	DSL	Yes
## 5520	Yes	No	DSL	Yes
## 5523	Yes	No	Fiber optic	No

## 5539	Yes	No	Fiber optic	No
## 5541	Yes	No	No No internet service	
## 5554	Yes	No	DSL	No
## 5562	Yes	No	No No internet service	
## 5574	Yes	No	Fiber optic	No
## 5577	Yes	No	DSL	No
## 5586	Yes	No	No No internet service	
## 5589	Yes	No	DSL	No
## 5604	Yes	No	DSL	Yes
## 5616	Yes	No	No No internet service	
## 5630	Yes	No	No No internet service	
## 5635	Yes	No	No No internet service	
## 5639	Yes	No	No No internet service	
## 5641	Yes	No	Fiber optic	No
## 5644	Yes	No	Fiber optic	No
## 5645	Yes	No	Fiber optic	No
## 5647	Yes	No	No No internet service	
## 5653	Yes	No	DSL	No
## 5657	Yes	No	DSL	Yes
## 5663	Yes	No	Fiber optic	No
## 5677	Yes	No	No No internet service	
## 5679	Yes	No	DSL	Yes
## 5681	Yes	No	No No internet service	
## 5683	No No phone service		DSL	No
## 5706	Yes	No	No No internet service	
## 5707	Yes	No	Fiber optic	No
## 5725	Yes	No	Fiber optic	No
## 5737	Yes	No	No No internet service	
## 5739	Yes	No	No No internet service	
## 5760	Yes	No	Fiber optic	No
## 5779	Yes	No	No No internet service	
## 5783	Yes	No	Fiber optic	No
## 5784	Yes	No	Fiber optic	No
## 5813	Yes	No	Fiber optic	No
## 5818	Yes	No	DSL	No
## 5826	Yes	No	Fiber optic	No
## 5827	Yes	No	Fiber optic	No
## 5869	Yes	No	DSL	No
## 5873	Yes	No	Fiber optic	No
## 5877	Yes	No	Fiber optic	No
## 5906	Yes	No	Fiber optic	No
## 5908	Yes	No	DSL	No
## 5909	Yes	No	No No internet service	
## 5944	Yes	No	Fiber optic	No
## 5951	No No phone service		DSL	No
## 5954	Yes	No	DSL	Yes
## 5962	No No phone service		DSL	No
## 5988	Yes	No	No No internet service	
## 6002	No No phone service		DSL	No
## 6041	Yes	No	Fiber optic	No

## 6065	No	No phone service	DSL	No
## 6075	No	No phone service	DSL	No
## 6081	No	No phone service	DSL	Yes
## 6082	Yes	No	DSL	Yes
## 6089	Yes	No	DSL	No
## 6090	Yes	Yes	Fiber optic	No
## 6097	Yes	No	Fiber optic	No
## 6108	Yes	No	No	No internet service
## 6150	No	No phone service	DSL	No
## 6169	Yes	No	Fiber optic	No
## 6170	Yes	No	DSL	No
## 6171	Yes	No	No	No internet service
## 6191	Yes	No	Fiber optic	No
## 6220	No	No phone service	DSL	No
## 6231	Yes	No	No	No internet service
## 6232	Yes	No	Fiber optic	No
## 6238	Yes	No	Fiber optic	No
## 6241	Yes	Yes	Fiber optic	No
## 6252	Yes	No	No	No internet service
## 6257	No	No phone service	DSL	No
## 6258	Yes	No	Fiber optic	No
## 6268	Yes	No	Fiber optic	No
## 6295	Yes	No	No	No internet service
## 6318	Yes	Yes	Fiber optic	No
## 6339	Yes	No	No	No internet service
## 6340	Yes	No	DSL	No
## 6347	Yes	No	DSL	No
## 6361	Yes	No	No	No internet service
## 6376	Yes	No	Fiber optic	No
## 6378	No	No phone service	DSL	No
## 6382	Yes	No	No	No internet service
## 6389	Yes	No	No	No internet service
## 6435	Yes	No	DSL	No
## 6439	Yes	Yes	Fiber optic	No
## 6450	Yes	No	No	No internet service
## 6474	Yes	No	Fiber optic	No
## 6480	Yes	No	DSL	No
## 6483	Yes	Yes	Fiber optic	No
## 6489	Yes	No	Fiber optic	No
## 6490	Yes	No	No	No internet service
## 6492	Yes	No	Fiber optic	No
## 6496	Yes	No	Fiber optic	No
## 6499	Yes	No	Fiber optic	No
## 6500	Yes	No	No	No internet service
## 6510	No	No phone service	DSL	No
## 6517	Yes	No	DSL	No
## 6519	Yes	No	DSL	No
## 6537	No	No phone service	DSL	No
## 6550	Yes	No	DSL	No
## 6555	Yes	No	Fiber optic	No

## 6591	Yes	No	Fiber optic	No
## 6608	No	No phone service	DSL	No
## 6610	Yes	No	No	No internet service
## 6613	Yes	No	Fiber optic	No
## 6621	Yes	No	Fiber optic	No
## 6624	Yes	Yes	Fiber optic	No
## 6634	Yes	Yes	Fiber optic	No
## 6661	Yes	No	Fiber optic	No
## 6664	Yes	No	DSL	No
## 6707	Yes	No	No	No internet service
## 6739	Yes	No	No	No internet service
## 6749	Yes	No	Fiber optic	No
## 6762	Yes	No	No	No internet service
## 6765	Yes	No	Fiber optic	No
## 6775	Yes	No	No	No internet service
## 6790	Yes	No	No	No internet service
## 6812	No	No phone service	DSL	No
## 6817	Yes	No	Fiber optic	No
## 6841	Yes	No	No	No internet service
## 6846	Yes	No	DSL	No
## 6847	Yes	Yes	Fiber optic	No
## 6867	Yes	Yes	Fiber optic	No
## 6878	Yes	No	Fiber optic	No
## 6897	Yes	No	DSL	No
## 6900	Yes	No	DSL	No
## 6910	Yes	No	DSL	Yes
## 6925	Yes	No	Fiber optic	No
## 6934	Yes	No	Fiber optic	No
## 6944	No	No phone service	DSL	Yes
## 6970	Yes	No	No	No internet service
## 6980	No	No phone service	DSL	No
## 7011	Yes	Yes	Fiber optic	No
## 7017	Yes	No	DSL	No
## 7019	Yes	No	Fiber optic	No
## 7033	Yes	Yes	Fiber optic	No
##	OnlineBackup	DeviceProtection		TechSupport
## 1	Yes	No		No
## 21	No	Yes		No
## 23	No internet service	No internet service	No internet service	
## 28	Yes	No		No
## 34	No internet service	No internet service	No internet service	
## 35	No	No		No
## 71	No	No		Yes
## 81	No	No		No
## 92	No	No		Yes
## 101	No internet service	No internet service	No internet service	
## 102	No internet service	No internet service	No internet service	
## 129	No internet service	No internet service	No internet service	
## 134	No	No		No
## 140	No	No		No

## 148	No	No	No
## 181	Yes	No	No
## 182	No	No	No
## 186	No	No	No
## 200	No internet service	No internet service	No internet service
## 208	No	No	No
## 212	No	No	No
## 223	No internet service	No internet service	No internet service
## 228	No	No	No
## 233	No	No	No
## 249	No	No	No
## 253	Yes	No	No
## 273	No	No	No
## 275	No	No	No
## 283	No internet service	No internet service	No internet service
## 288	No	No	No
## 296	No internet service	No internet service	No internet service
## 300	No	No	No
## 311	No internet service	No internet service	No internet service
## 323	No	No	No
## 346	No	No	No
## 368	No internet service	No internet service	No internet service
## 377	No	No	No
## 382	Yes	No	No
## 384	Yes	No	No
## 390	No	No	No
## 409	No internet service	No internet service	No internet service
## 410	No internet service	No internet service	No internet service
## 420	No	Yes	No
## 440	No	Yes	Yes
## 447	No	No	No
## 460	No	No	No
## 472	No	No	No
## 475	Yes	No	No
## 490	No	No	No
## 495	No internet service	No internet service	No internet service
## 510	No internet service	No internet service	No internet service
## 535	No	No	No
## 543	No internet service	No internet service	No internet service
## 557	No internet service	No internet service	No internet service
## 560	No	No	Yes
## 582	No	No	No
## 584	No internet service	No internet service	No internet service
## 586	No	No	No
## 595	No	No	No
## 643	No	No	No
## 647	No	No	No
## 652	No	Yes	No
## 663	No internet service	No internet service	No internet service
## 673	No	No	No

## 681	No	No	No
## 685	No	No	No
## 686	No	No	Yes
## 691	No internet service	No internet service	No internet service
## 696	No internet service	No internet service	No internet service
## 711	No internet service	No internet service	No internet service
## 761	No internet service	No internet service	No internet service
## 773	No internet service	No internet service	No internet service
## 784	No	No	Yes
## 799	No internet service	No internet service	No internet service
## 810	No	No	No
## 838	No	No	No
## 845	No	No	No
## 858	Yes	No	No
## 886	No internet service	No internet service	No internet service
## 894	No	No	No
## 916	No	No	No
## 956	No	No	No
## 965	No	No	No
## 971	No	No	No
## 977	No	No	No
## 984	No	No	No
## 988	No internet service	No internet service	No internet service
## 1014	Yes	No	No
## 1050	No internet service	No internet service	No internet service
## 1075	No internet service	No internet service	No internet service
## 1096	No	No	No
## 1145	No	No	No
## 1152	No internet service	No internet service	No internet service
## 1162	Yes	No	No
## 1169	No internet service	No internet service	No internet service
## 1174	No internet service	No internet service	No internet service
## 1186	No	No	No
## 1206	No	No	No
## 1209	No	No	No
## 1225	No	No	No
## 1244	No	No	No
## 1250	No	No	No
## 1252	Yes	No	No
## 1253	No internet service	No internet service	No internet service
## 1283	No	No	No
## 1287	No	Yes	Yes
## 1320	No internet service	No internet service	No internet service
## 1326	No	No	No
## 1332	No	No	No
## 1335	No	No	No
## 1339	No internet service	No internet service	No internet service
## 1372	No	No	No
## 1374	No internet service	No internet service	No internet service
## 1384	No	No	No

## 1394	No internet service	No internet service	No internet service
## 1406	No	No	No
## 1429	No	No	No
## 1447	No	No	No
## 1459	No internet service	No internet service	No internet service
## 1466	Yes	No	No
## 1489	No	No	No
## 1492	No internet service	No internet service	No internet service
## 1506	No	No	No
## 1514	No	No	No
## 1550	No	No	No
## 1557	Yes	No	Yes
## 1562	No	No	No
## 1572	No internet service	No internet service	No internet service
## 1601	No	Yes	No
## 1634	No	No	No
## 1651	No	No	No
## 1652	No	No	No
## 1655	No internet service	No internet service	No internet service
## 1671	No	Yes	No
## 1695	No	No	No
## 1705	No	Yes	No
## 1731	No	No	No
## 1732	No	No	No
## 1734	No internet service	No internet service	No internet service
## 1737	No internet service	No internet service	No internet service
## 1740	No	No	No
## 1775	No	No	No
## 1784	No	No	No
## 1801	No	No	No
## 1808	No	Yes	No
## 1814	No	Yes	Yes
## 1817	No internet service	No internet service	No internet service
## 1834	No	No	No
## 1835	No	No	No
## 1836	No	No	No
## 1838	No internet service	No internet service	No internet service
## 1853	No	No	No
## 1854	No	No	No
## 1855	Yes	Yes	No
## 1862	No	No	No
## 1869	No	No	No
## 1871	No	No	No
## 1880	No	No	No
## 1891	No internet service	No internet service	No internet service
## 1892	No	No	No
## 1920	No	Yes	No
## 1930	No	No	No
## 1933	No internet service	No internet service	No internet service
## 1939	No internet service	No internet service	No internet service

## 1940	No internet service	No internet service	No internet service
## 1944	No	No	No
## 1954	Yes	No	No
## 1955	No	No	No
## 1977	No	No	No
## 1994	No	No	No
## 1996	No	No	No
## 2019	No	No	No
## 2034	No internet service	No internet service	No internet service
## 2037	No	No	No
## 2038	No	No	No
## 2047	No	No	No
## 2070	No	No	No
## 2078	No	No	No
## 2084	No internet service	No internet service	No internet service
## 2085	No	No	No
## 2096	No	No	No
## 2097	No internet service	No internet service	No internet service
## 2117	No	Yes	No
## 2122	No internet service	No internet service	No internet service
## 2127	No	No	No
## 2130	No	No	No
## 2134	No	No	No
## 2135	No internet service	No internet service	No internet service
## 2153	No	No	No
## 2173	No	No	No
## 2192	No	No	No
## 2195	No	No	No
## 2209	No	Yes	No
## 2239	No	No	Yes
## 2247	No	Yes	No
## 2256	No	No	No
## 2270	No	No	No
## 2273	No	Yes	No
## 2276	No	No	No
## 2284	No	No	No
## 2296	No	No	No
## 2297	No	No	No
## 2362	No	No	No
## 2364	No	No	No
## 2367	No	No	No
## 2368	No	Yes	No
## 2372	No internet service	No internet service	No internet service
## 2389	No	No	No
## 2398	No	No	No
## 2423	No	No	No
## 2428	No	No	No
## 2463	Yes	No	Yes
## 2465	No	No	No
## 2466	No	No	No

## 2511	No	No	No
## 2518	No	No	No
## 2527	No internet service	No internet service	No internet service
## 2574	No	No	No
## 2578	No	No	No
## 2601	No	No	No
## 2608	No	No	No
## 2614	Yes	No	No
## 2618	No internet service	No internet service	No internet service
## 2629	Yes	No	Yes
## 2635	No	No	Yes
## 2646	No internet service	No internet service	No internet service
## 2653	No	No	No
## 2655	No	No	No
## 2669	No internet service	No internet service	No internet service
## 2703	No	No	No
## 2704	No	No	No
## 2714	No internet service	No internet service	No internet service
## 2734	No	No	No
## 2741	No	No	No
## 2746	No	No	No
## 2754	No	No	No
## 2757	No internet service	No internet service	No internet service
## 2760	No internet service	No internet service	No internet service
## 2822	No	No	No
## 2828	Yes	No	No
## 2829	No internet service	No internet service	No internet service
## 2838	No internet service	No internet service	No internet service
## 2857	No	No	No
## 2862	No	No	No
## 2864	No	No	No
## 2888	No	No	No
## 2889	No	No	No
## 2892	No	No	No
## 2893	No internet service	No internet service	No internet service
## 2901	No	No	No
## 2912	No	Yes	No
## 2928	No	No	No
## 2959	No internet service	No internet service	No internet service
## 2978	No internet service	No internet service	No internet service
## 2990	No internet service	No internet service	No internet service
## 2994	No internet service	No internet service	No internet service
## 2996	No	No	No
## 3005	No	No	No
## 3010	No internet service	No internet service	No internet service
## 3031	No	No	No
## 3035	No	No	No
## 3042	Yes	No	No
## 3045	No	No	No
## 3066	No	No	No

## 3091	No	No	No
## 3093	No	No	No
## 3104	No internet service	No internet service	No internet service
## 3111	No internet service	No internet service	No internet service
## 3133	No	No	Yes
## 3139	No	No	No
## 3143	No internet service	No internet service	No internet service
## 3186	No	No	No
## 3203	No	No	No
## 3210	No	No	No
## 3217	No	Yes	No
## 3242	No internet service	No internet service	No internet service
## 3259	No	No	No
## 3273	No	No	No
## 3295	No	No	No
## 3302	No	No	No
## 3311	No	No	No
## 3313	No internet service	No internet service	No internet service
## 3314	No internet service	No internet service	No internet service
## 3325	No	Yes	No
## 3329	No	No	No
## 3333	No	No	No
## 3351	No	No	No
## 3353	No	No	No
## 3358	No	Yes	No
## 3363	Yes	No	No
## 3377	No internet service	No internet service	No internet service
## 3381	No	No	No
## 3390	No	No	No
## 3424	No	No	No
## 3427	No	No	No
## 3453	No	No	No
## 3456	No	No	No
## 3458	No internet service	No internet service	No internet service
## 3469	No internet service	No internet service	No internet service
## 3496	No	No	No
## 3500	No internet service	No internet service	No internet service
## 3510	No	No	No
## 3519	No internet service	No internet service	No internet service
## 3528	No	No	No
## 3537	Yes	No	No
## 3552	No	No	No
## 3566	Yes	No	No
## 3575	No internet service	No internet service	No internet service
## 3593	No	No	No
## 3599	No	No	No
## 3632	No	No	No
## 3634	No	No	No
## 3653	No	No	No
## 3672	No	No	No

## 3675	No	No	No
## 3676	No internet service	No internet service	No internet service
## 3678	No	No	Yes
## 3680	No internet service	No internet service	No internet service
## 3683	No	No	No
## 3690	No	No	No
## 3710	No	No	No
## 3726	No	No	No
## 3747	No	No	No
## 3754	No	No	Yes
## 3755	No internet service	No internet service	No internet service
## 3757	No	No	No
## 3759	No	No	No
## 3767	No	Yes	No
## 3772	No	No	No
## 3773	No	No	No
## 3774	No	No	No
## 3803	No internet service	No internet service	No internet service
## 3806	No	No	No
## 3811	No	No	No
## 3822	No	No	No
## 3844	No	No	No
## 3853	No internet service	No internet service	No internet service
## 3866	No internet service	No internet service	No internet service
## 3880	No	No	No
## 3889	No	No	No
## 3903	No	No	No
## 3907	No	No	No
## 3918	No	No	No
## 3924	No	No	No
## 3940	No	No	No
## 3943	No	No	No
## 3944	No	No	No
## 3970	No	No	No
## 3984	No	No	No
## 4006	No internet service	No internet service	No internet service
## 4011	No internet service	No internet service	No internet service
## 4013	Yes	No	No
## 4017	No	No	No
## 4022	No internet service	No internet service	No internet service
## 4063	No	No	No
## 4065	No	No	No
## 4066	No internet service	No internet service	No internet service
## 4082	No	No	No
## 4085	No	No	No
## 4091	No	No	No
## 4093	No internet service	No internet service	No internet service
## 4095	No	No	Yes
## 4099	No internet service	No internet service	No internet service
## 4132	No internet service	No internet service	No internet service

## 4139	No	Yes	No
## 4157	No internet service	No internet service	No internet service
## 4173	No internet service	No internet service	No internet service
## 4184	Yes	No	Yes
## 4186	No internet service	No internet service	No internet service
## 4213	No	No	No
## 4222	No internet service	No internet service	No internet service
## 4229	No	No	No
## 4233	No	No	No
## 4237	No internet service	No internet service	No internet service
## 4243	No internet service	No internet service	No internet service
## 4276	No internet service	No internet service	No internet service
## 4291	No	No	Yes
## 4316	No	No	No
## 4326	No internet service	No internet service	No internet service
## 4327	No	No	No
## 4349	No internet service	No internet service	No internet service
## 4350	No	No	No
## 4354	No	Yes	No
## 4373	No internet service	No internet service	No internet service
## 4388	No internet service	No internet service	No internet service
## 4393	No internet service	No internet service	No internet service
## 4397	No	No	No
## 4418	No	No	No
## 4425	No	No	No
## 4444	No	No	No
## 4456	No	Yes	No
## 4460	Yes	No	No
## 4464	No	No	No
## 4477	No internet service	No internet service	No internet service
## 4481	No	No	No
## 4485	No	No	No
## 4492	No internet service	No internet service	No internet service
## 4496	No	No	No
## 4510	Yes	No	No
## 4521	No internet service	No internet service	No internet service
## 4535	No	No	Yes
## 4537	No	No	No
## 4541	No internet service	No internet service	No internet service
## 4542	No	No	No
## 4545	No	No	No
## 4546	No	No	No
## 4565	No internet service	No internet service	No internet service
## 4586	No	No	No
## 4608	No	No	Yes
## 4633	No internet service	No internet service	No internet service
## 4641	No	No	No
## 4642	No	No	No
## 4647	No	No	No
## 4705	Yes	No	No

## 4707	No	No	No
## 4722	No internet service	No internet service	No internet service
## 4724	Yes	No	No
## 4726	No	Yes	Yes
## 4758	Yes	No	Yes
## 4760	No	No	No
## 4768	No internet service	No internet service	No internet service
## 4785	No internet service	No internet service	No internet service
## 4790	No	No	No
## 4801	No	No	No
## 4810	No internet service	No internet service	No internet service
## 4818	No internet service	No internet service	No internet service
## 4824	No	No	Yes
## 4838	No	No	No
## 4902	Yes	No	No
## 4925	No	No	No
## 4931	No	No	No
## 4940	No internet service	No internet service	No internet service
## 4955	No	No	No
## 4956	No	No	No
## 4960	No internet service	No internet service	No internet service
## 4979	No	No	No
## 5024	No	No	No
## 5034	No internet service	No internet service	No internet service
## 5047	No	No	No
## 5050	No internet service	No internet service	No internet service
## 5072	No	Yes	No
## 5101	No	Yes	No
## 5117	No	No	No
## 5136	No internet service	No internet service	No internet service
## 5141	No	No	No
## 5161	Yes	No	No
## 5166	No	No	No
## 5171	No internet service	No internet service	No internet service
## 5187	No	No	No
## 5190	Yes	No	No
## 5220	No internet service	No internet service	No internet service
## 5288	No internet service	No internet service	No internet service
## 5289	No	No	No
## 5301	No	No	No
## 5308	No	No	No
## 5313	No	No	Yes
## 5316	No	No	No
## 5337	No internet service	No internet service	No internet service
## 5342	No	No	No
## 5355	No	No	No
## 5376	No	No	Yes
## 5389	No internet service	No internet service	No internet service
## 5394	No	No	No
## 5412	No	No	No

## 5437	No	No	Yes
## 5447	No internet service	No internet service	No internet service
## 5451	No	No	No
## 5455	No	No	No
## 5464	No	No	No
## 5475	No	No	No
## 5481	No	No	No
## 5482	No	No	No
## 5486	No	No	No
## 5499	No	No	No
## 5507	No internet service	No internet service	No internet service
## 5515	No	No	No
## 5520	No	Yes	No
## 5523	No	No	No
## 5539	No	No	No
## 5541	No internet service	No internet service	No internet service
## 5554	No	No	No
## 5562	No internet service	No internet service	No internet service
## 5574	No	No	No
## 5577	No	No	No
## 5586	No internet service	No internet service	No internet service
## 5589	No	Yes	No
## 5604	No	No	No
## 5616	No internet service	No internet service	No internet service
## 5630	No internet service	No internet service	No internet service
## 5635	No internet service	No internet service	No internet service
## 5639	No internet service	No internet service	No internet service
## 5641	No	No	No
## 5644	No	No	Yes
## 5645	No	Yes	No
## 5647	No internet service	No internet service	No internet service
## 5653	Yes	No	No
## 5657	No	No	No
## 5663	No	No	No
## 5677	No internet service	No internet service	No internet service
## 5679	Yes	No	Yes
## 5681	No internet service	No internet service	No internet service
## 5683	No	No	No
## 5706	No internet service	No internet service	No internet service
## 5707	Yes	No	No
## 5725	No	No	No
## 5737	No internet service	No internet service	No internet service
## 5739	No internet service	No internet service	No internet service
## 5760	No	No	No
## 5779	No internet service	No internet service	No internet service
## 5783	No	No	No
## 5784	No	No	No
## 5813	No	No	No
## 5818	No	No	No
## 5826	No	No	No

## 5827	No	No	No
## 5869	No	No	No
## 5873	No	No	No
## 5877	Yes	No	No
## 5906	Yes	No	No
## 5908	No	No	No
## 5909	No internet service	No internet service	No internet service
## 5944	No	Yes	No
## 5951	No	No	No
## 5954	No	No	No
## 5962	No	Yes	Yes
## 5988	No internet service	No internet service	No internet service
## 6002	No	No	No
## 6041	No	No	No
## 6065	No	No	No
## 6075	No	No	No
## 6081	No	No	No
## 6082	No	No	No
## 6089	No	No	No
## 6090	Yes	No	No
## 6097	No	No	No
## 6108	No internet service	No internet service	No internet service
## 6150	No	No	No
## 6169	No	No	No
## 6170	No	No	No
## 6171	No internet service	No internet service	No internet service
## 6191	No	No	No
## 6220	No	No	No
## 6231	No internet service	No internet service	No internet service
## 6232	Yes	No	No
## 6238	No	No	No
## 6241	No	No	No
## 6252	No internet service	No internet service	No internet service
## 6257	No	No	No
## 6258	Yes	No	No
## 6268	No	No	No
## 6295	No internet service	No internet service	No internet service
## 6318	Yes	No	No
## 6339	No internet service	No internet service	No internet service
## 6340	No	No	Yes
## 6347	No	No	Yes
## 6361	No internet service	No internet service	No internet service
## 6376	Yes	No	No
## 6378	Yes	No	Yes
## 6382	No internet service	No internet service	No internet service
## 6389	No internet service	No internet service	No internet service
## 6435	No	Yes	No
## 6439	No	No	No
## 6450	No internet service	No internet service	No internet service
## 6474	No	Yes	No

## 6480	No	No	No
## 6483	No	Yes	No
## 6489	No	No	No
## 6490	No internet service	No internet service	No internet service
## 6492	No	No	No
## 6496	No	No	No
## 6499	Yes	Yes	No
## 6500	No internet service	No internet service	No internet service
## 6510	No	No	No
## 6517	No	Yes	No
## 6519	No	No	No
## 6537	No	No	No
## 6550	No	No	No
## 6555	No	No	No
## 6591	No	No	No
## 6608	No	No	No
## 6610	No internet service	No internet service	No internet service
## 6613	No	No	No
## 6621	No	No	No
## 6624	No	No	No
## 6634	No	No	No
## 6661	No	No	No
## 6664	No	No	No
## 6707	No internet service	No internet service	No internet service
## 6739	No internet service	No internet service	No internet service
## 6749	No	Yes	No
## 6762	No internet service	No internet service	No internet service
## 6765	No	No	No
## 6775	No internet service	No internet service	No internet service
## 6790	No internet service	No internet service	No internet service
## 6812	No	Yes	No
## 6817	No	No	No
## 6841	No internet service	No internet service	No internet service
## 6846	No	No	No
## 6847	No	Yes	No
## 6867	No	No	No
## 6878	No	No	No
## 6897	No	No	No
## 6900	No	No	No
## 6910	Yes	No	No
## 6925	No	No	No
## 6934	No	No	No
## 6944	No	No	No
## 6970	No internet service	No internet service	No internet service
## 6980	No	No	No
## 7011	No	No	No
## 7017	Yes	No	No
## 7019	No	No	No
## 7033	No	No	No
##	StreamingTV	StreamingMovies	Contract

## 1	No	No	Month-to-month
## 21	No	Yes	Month-to-month
## 23	No internet service	No internet service	Month-to-month
## 28	No	No	Month-to-month
## 34	No internet service	No internet service	Month-to-month
## 35	No	No	Month-to-month
## 71	No	No	Month-to-month
## 81	Yes	No	Month-to-month
## 92	No	No	Month-to-month
## 101	No internet service	No internet service	Month-to-month
## 102	No internet service	No internet service	Month-to-month
## 129	No internet service	No internet service	Month-to-month
## 134	No	Yes	Month-to-month
## 140	No	No	Month-to-month
## 148	No	No	Month-to-month
## 181	No	No	Month-to-month
## 182	No	No	Month-to-month
## 186	No	No	Month-to-month
## 200	No internet service	No internet service	Month-to-month
## 208	No	Yes	Month-to-month
## 212	No	No	Month-to-month
## 223	No internet service	No internet service	One year
## 228	Yes	No	Month-to-month
## 233	No	Yes	Month-to-month
## 249	No	No	Month-to-month
## 253	Yes	No	Month-to-month
## 273	No	No	Month-to-month
## 275	No	No	Month-to-month
## 283	No internet service	No internet service	Month-to-month
## 288	No	No	Month-to-month
## 296	No internet service	No internet service	Month-to-month
## 300	No	No	Month-to-month
## 311	No internet service	No internet service	Month-to-month
## 323	No	No	Month-to-month
## 346	No	No	Month-to-month
## 368	No internet service	No internet service	Month-to-month
## 377	No	No	Month-to-month
## 382	No	No	Month-to-month
## 384	No	Yes	Month-to-month
## 390	No	No	Month-to-month
## 409	No internet service	No internet service	Month-to-month
## 410	No internet service	No internet service	Month-to-month
## 420	No	No	Month-to-month
## 440	No	No	Month-to-month
## 447	No	No	Month-to-month
## 460	No	No	Month-to-month
## 472	No	Yes	Month-to-month
## 475	No	No	Month-to-month
## 490	No	No	Month-to-month
## 495	No internet service	No internet service	Month-to-month

## 510	No internet service	No internet service	Month-to-month
## 535	No	Yes	Month-to-month
## 543	No internet service	No internet service	Month-to-month
## 557	No internet service	No internet service	Month-to-month
## 560	No	No	Month-to-month
## 582	No	No	Month-to-month
## 584	No internet service	No internet service	Month-to-month
## 586	Yes	No	Month-to-month
## 595	No	No	Month-to-month
## 643	Yes	Yes	Month-to-month
## 647	No	No	Month-to-month
## 652	No	No	Month-to-month
## 663	No internet service	No internet service	Month-to-month
## 673	No	No	Month-to-month
## 681	No	Yes	Month-to-month
## 685	No	No	Month-to-month
## 686	No	No	Month-to-month
## 691	No internet service	No internet service	Month-to-month
## 696	No internet service	No internet service	Month-to-month
## 711	No internet service	No internet service	Month-to-month
## 761	No internet service	No internet service	Month-to-month
## 773	No internet service	No internet service	Month-to-month
## 784	No	No	Month-to-month
## 799	No internet service	No internet service	Month-to-month
## 810	No	No	Month-to-month
## 838	No	No	Month-to-month
## 845	Yes	Yes	Month-to-month
## 858	No	No	Month-to-month
## 886	No internet service	No internet service	Month-to-month
## 894	No	No	Month-to-month
## 916	No	No	Month-to-month
## 956	No	No	Month-to-month
## 965	No	No	Month-to-month
## 971	Yes	Yes	Month-to-month
## 977	No	No	Month-to-month
## 984	No	Yes	Month-to-month
## 988	No internet service	No internet service	Month-to-month
## 1014	No	No	Month-to-month
## 1050	No internet service	No internet service	Month-to-month
## 1075	No internet service	No internet service	Month-to-month
## 1096	Yes	No	Month-to-month
## 1145	No	Yes	Month-to-month
## 1152	No internet service	No internet service	Month-to-month
## 1162	No	No	Month-to-month
## 1169	No internet service	No internet service	One year
## 1174	No internet service	No internet service	Month-to-month
## 1186	No	Yes	Month-to-month
## 1206	No	No	Month-to-month
## 1209	Yes	No	Month-to-month
## 1225	No	No	Month-to-month

## 1244	No	No	Month-to-month
## 1250	No	No	Month-to-month
## 1252	No	No	Month-to-month
## 1253	No internet service	No internet service	Month-to-month
## 1283	Yes	Yes	Month-to-month
## 1287	Yes	Yes	One year
## 1320	No internet service	No internet service	Month-to-month
## 1326	No	No	Month-to-month
## 1332	No	No	Month-to-month
## 1335	No	No	Month-to-month
## 1339	No internet service	No internet service	Month-to-month
## 1372	Yes	No	Month-to-month
## 1374	No internet service	No internet service	Month-to-month
## 1384	No	No	Month-to-month
## 1394	No internet service	No internet service	Month-to-month
## 1406	No	No	Month-to-month
## 1429	No	No	Month-to-month
## 1447	No	No	Month-to-month
## 1459	No internet service	No internet service	Month-to-month
## 1466	No	No	Month-to-month
## 1489	No	No	Month-to-month
## 1492	No internet service	No internet service	Month-to-month
## 1506	No	No	Month-to-month
## 1514	No	No	Month-to-month
## 1550	No	No	Month-to-month
## 1557	Yes	No	Month-to-month
## 1562	No	No	Month-to-month
## 1572	No internet service	No internet service	Month-to-month
## 1601	Yes	No	Month-to-month
## 1634	No	No	Month-to-month
## 1651	No	Yes	Month-to-month
## 1652	Yes	No	Month-to-month
## 1655	No internet service	No internet service	One year
## 1671	No	No	Month-to-month
## 1695	Yes	No	Month-to-month
## 1705	Yes	Yes	Month-to-month
## 1731	Yes	No	Month-to-month
## 1732	No	No	Month-to-month
## 1734	No internet service	No internet service	Month-to-month
## 1737	No internet service	No internet service	Month-to-month
## 1740	No	No	Month-to-month
## 1775	No	No	Month-to-month
## 1784	No	No	Month-to-month
## 1801	No	No	Month-to-month
## 1808	No	No	Month-to-month
## 1814	Yes	Yes	Month-to-month
## 1817	No internet service	No internet service	Month-to-month
## 1834	No	No	Month-to-month
## 1835	No	No	Month-to-month
## 1836	No	No	Month-to-month

## 1838	No internet service	No internet service	Month-to-month
## 1853	No	No	Month-to-month
## 1854	No	No	Month-to-month
## 1855	No	Yes	Month-to-month
## 1862	No	No	Month-to-month
## 1869	No	No	Month-to-month
## 1871	No	No	Month-to-month
## 1880	No	No	Month-to-month
## 1891	No internet service	No internet service	Month-to-month
## 1892	No	No	Month-to-month
## 1920	No	No	Month-to-month
## 1930	No	Yes	Month-to-month
## 1933	No internet service	No internet service	Month-to-month
## 1939	No internet service	No internet service	Month-to-month
## 1940	No internet service	No internet service	Month-to-month
## 1944	No	No	Month-to-month
## 1954	No	No	Month-to-month
## 1955	No	No	Month-to-month
## 1977	Yes	Yes	Month-to-month
## 1994	No	No	Month-to-month
## 1996	No	No	Month-to-month
## 2019	No	No	Month-to-month
## 2034	No internet service	No internet service	Month-to-month
## 2037	No	No	Month-to-month
## 2038	No	No	Month-to-month
## 2047	No	No	Month-to-month
## 2070	Yes	Yes	Month-to-month
## 2078	No	No	Month-to-month
## 2084	No internet service	No internet service	Month-to-month
## 2085	No	No	Month-to-month
## 2096	Yes	No	Month-to-month
## 2097	No internet service	No internet service	Month-to-month
## 2117	No	No	Month-to-month
## 2122	No internet service	No internet service	Month-to-month
## 2127	No	No	Month-to-month
## 2130	No	No	Month-to-month
## 2134	No	No	Month-to-month
## 2135	No internet service	No internet service	Month-to-month
## 2153	No	No	Month-to-month
## 2173	No	No	Month-to-month
## 2192	Yes	Yes	Month-to-month
## 2195	Yes	No	Month-to-month
## 2209	Yes	Yes	Month-to-month
## 2239	Yes	Yes	Month-to-month
## 2247	Yes	Yes	Month-to-month
## 2256	No	No	Month-to-month
## 2270	No	No	Month-to-month
## 2273	No	No	Month-to-month
## 2276	No	No	Month-to-month
## 2284	No	No	Month-to-month

## 2296	No	No	Month-to-month
## 2297	No	No	Month-to-month
## 2362	No	No	Month-to-month
## 2364	No	No	Month-to-month
## 2367	No	No	Month-to-month
## 2368	Yes	No	Month-to-month
## 2372	No internet service	No internet service	Month-to-month
## 2389	No	Yes	Month-to-month
## 2398	Yes	Yes	Month-to-month
## 2423	No	No	Month-to-month
## 2428	No	Yes	Month-to-month
## 2463	No	Yes	Month-to-month
## 2465	No	No	Month-to-month
## 2466	No	Yes	Month-to-month
## 2511	No	No	Month-to-month
## 2518	No	No	Month-to-month
## 2527	No internet service	No internet service	Month-to-month
## 2574	No	Yes	Month-to-month
## 2578	Yes	Yes	Month-to-month
## 2601	No	No	Month-to-month
## 2608	No	No	Month-to-month
## 2614	No	No	Month-to-month
## 2618	No internet service	No internet service	Month-to-month
## 2629	No	No	Month-to-month
## 2635	Yes	No	Month-to-month
## 2646	No internet service	No internet service	Month-to-month
## 2653	No	Yes	Month-to-month
## 2655	Yes	Yes	Month-to-month
## 2669	No internet service	No internet service	Month-to-month
## 2703	No	No	Month-to-month
## 2704	No	No	Month-to-month
## 2714	No internet service	No internet service	Month-to-month
## 2734	Yes	No	Month-to-month
## 2741	No	No	Month-to-month
## 2746	Yes	No	Month-to-month
## 2754	Yes	Yes	Month-to-month
## 2757	No internet service	No internet service	Month-to-month
## 2760	No internet service	No internet service	Month-to-month
## 2822	No	No	Month-to-month
## 2828	No	No	Month-to-month
## 2829	No internet service	No internet service	Two year
## 2838	No internet service	No internet service	Month-to-month
## 2857	No	No	Month-to-month
## 2862	No	Yes	Month-to-month
## 2864	No	No	Month-to-month
## 2888	No	No	Month-to-month
## 2889	No	No	Month-to-month
## 2892	No	Yes	Month-to-month
## 2893	No internet service	No internet service	Month-to-month
## 2901	No	No	Month-to-month

## 2912	No	No	Month-to-month
## 2928	No	No	Month-to-month
## 2959	No internet service	No internet service	Month-to-month
## 2978	No internet service	No internet service	Month-to-month
## 2990	No internet service	No internet service	Month-to-month
## 2994	No internet service	No internet service	One year
## 2996	No	No	Month-to-month
## 3005	Yes	Yes	Month-to-month
## 3010	No internet service	No internet service	Month-to-month
## 3031	Yes	No	Month-to-month
## 3035	Yes	No	Month-to-month
## 3042	No	No	Month-to-month
## 3045	No	No	Month-to-month
## 3066	No	No	Month-to-month
## 3091	Yes	No	Month-to-month
## 3093	No	No	Month-to-month
## 3104	No internet service	No internet service	Month-to-month
## 3111	No internet service	No internet service	Month-to-month
## 3133	No	No	Month-to-month
## 3139	No	No	Month-to-month
## 3143	No internet service	No internet service	Month-to-month
## 3186	No	No	Month-to-month
## 3203	No	Yes	Month-to-month
## 3210	Yes	Yes	Month-to-month
## 3217	No	No	Month-to-month
## 3242	No internet service	No internet service	Month-to-month
## 3259	No	No	Month-to-month
## 3273	No	No	Month-to-month
## 3295	No	No	Month-to-month
## 3302	No	No	Month-to-month
## 3311	Yes	No	Month-to-month
## 3313	No internet service	No internet service	Month-to-month
## 3314	No internet service	No internet service	Month-to-month
## 3325	No	No	Month-to-month
## 3329	No	No	Month-to-month
## 3333	No	No	Month-to-month
## 3351	No	No	Month-to-month
## 3353	No	Yes	Month-to-month
## 3358	No	Yes	Month-to-month
## 3363	No	No	Month-to-month
## 3377	No internet service	No internet service	Month-to-month
## 3381	Yes	Yes	Month-to-month
## 3390	No	No	Month-to-month
## 3424	No	No	Month-to-month
## 3427	No	No	Month-to-month
## 3453	No	No	Month-to-month
## 3456	Yes	Yes	Month-to-month
## 3458	No internet service	No internet service	Month-to-month
## 3469	No internet service	No internet service	Month-to-month
## 3496	No	No	Month-to-month

## 3500	No internet service	No internet service	Month-to-month
## 3510		No	No Month-to-month
## 3519	No internet service	No internet service	Month-to-month
## 3528		No	No Month-to-month
## 3537		No	No Month-to-month
## 3552		No	Yes Month-to-month
## 3566		No	No Month-to-month
## 3575	No internet service	No internet service	Month-to-month
## 3593		No	No Month-to-month
## 3599		No	No Month-to-month
## 3632		No	No Month-to-month
## 3634		No	No Month-to-month
## 3653		No	No Month-to-month
## 3672		No	No Month-to-month
## 3675		No	No Month-to-month
## 3676	No internet service	No internet service	Month-to-month
## 3678		No	No Month-to-month
## 3680	No internet service	No internet service	Month-to-month
## 3683		No	No Month-to-month
## 3690		No	No Month-to-month
## 3710		No	No Month-to-month
## 3726		No	No Month-to-month
## 3747		No	No Month-to-month
## 3754		No	No Month-to-month
## 3755	No internet service	No internet service	Month-to-month
## 3757		No	No Month-to-month
## 3759		No	No Month-to-month
## 3767		No	No Month-to-month
## 3772		Yes	No Month-to-month
## 3773		Yes	Yes Month-to-month
## 3774		No	No Month-to-month
## 3803	No internet service	No internet service	Month-to-month
## 3806		No	No Month-to-month
## 3811		No	No Month-to-month
## 3822		No	No Month-to-month
## 3844		No	No Month-to-month
## 3853	No internet service	No internet service	Month-to-month
## 3866	No internet service	No internet service	Month-to-month
## 3880		No	No Month-to-month
## 3889		No	Yes Month-to-month
## 3903		No	No Month-to-month
## 3907		Yes	No Month-to-month
## 3918		No	No Month-to-month
## 3924		No	Yes Month-to-month
## 3940		No	Yes Month-to-month
## 3943		No	No Month-to-month
## 3944		No	No Month-to-month
## 3970		No	No Month-to-month
## 3984		No	No Month-to-month
## 4006	No internet service	No internet service	Month-to-month

## 4011	No internet service	No internet service	Month-to-month
## 4013	No	No	Month-to-month
## 4017	No	No	Month-to-month
## 4022	No internet service	No internet service	Month-to-month
## 4063	No	No	Month-to-month
## 4065	No	No	Month-to-month
## 4066	No internet service	No internet service	Month-to-month
## 4082	No	No	Month-to-month
## 4085	Yes	No	Month-to-month
## 4091	No	No	Month-to-month
## 4093	No internet service	No internet service	Month-to-month
## 4095	No	No	Month-to-month
## 4099	No internet service	No internet service	Month-to-month
## 4132	No internet service	No internet service	Month-to-month
## 4139	Yes	No	Month-to-month
## 4157	No internet service	No internet service	Month-to-month
## 4173	No internet service	No internet service	Month-to-month
## 4184	No	No	Month-to-month
## 4186	No internet service	No internet service	Month-to-month
## 4213	Yes	Yes	Month-to-month
## 4222	No internet service	No internet service	Month-to-month
## 4229	No	No	Month-to-month
## 4233	No	No	Month-to-month
## 4237	No internet service	No internet service	Month-to-month
## 4243	No internet service	No internet service	Month-to-month
## 4276	No internet service	No internet service	Month-to-month
## 4291	Yes	No	Month-to-month
## 4316	Yes	No	Month-to-month
## 4326	No internet service	No internet service	Month-to-month
## 4327	Yes	Yes	Month-to-month
## 4349	No internet service	No internet service	Month-to-month
## 4350	No	No	Month-to-month
## 4354	No	No	Month-to-month
## 4373	No internet service	No internet service	Month-to-month
## 4388	No internet service	No internet service	Month-to-month
## 4393	No internet service	No internet service	Month-to-month
## 4397	No	No	Month-to-month
## 4418	No	No	Month-to-month
## 4425	No	No	Month-to-month
## 4444	No	No	Month-to-month
## 4456	No	No	Month-to-month
## 4460	Yes	Yes	Month-to-month
## 4464	No	No	Month-to-month
## 4477	No internet service	No internet service	Month-to-month
## 4481	No	No	Month-to-month
## 4485	No	No	Month-to-month
## 4492	No internet service	No internet service	Month-to-month
## 4496	No	No	Month-to-month
## 4510	Yes	No	Month-to-month
## 4521	No internet service	No internet service	Month-to-month

## 4535	No	No	Month-to-month
## 4537	No	No	Month-to-month
## 4541	No internet service	No internet service	Month-to-month
## 4542	No	No	Month-to-month
## 4545	Yes	No	Month-to-month
## 4546	No	No	Month-to-month
## 4565	No internet service	No internet service	Month-to-month
## 4586	No	Yes	Month-to-month
## 4608	No	Yes	Month-to-month
## 4633	No internet service	No internet service	Month-to-month
## 4641	No	No	Month-to-month
## 4642	No	No	Month-to-month
## 4647	No	No	Month-to-month
## 4705	No	No	Month-to-month
## 4707	No	No	Month-to-month
## 4722	No internet service	No internet service	Month-to-month
## 4724	No	No	Month-to-month
## 4726	No	No	Month-to-month
## 4758	No	No	Month-to-month
## 4760	Yes	No	Month-to-month
## 4768	No internet service	No internet service	One year
## 4785	No internet service	No internet service	Month-to-month
## 4790	No	No	Month-to-month
## 4801	Yes	Yes	Month-to-month
## 4810	No internet service	No internet service	Month-to-month
## 4818	No internet service	No internet service	Month-to-month
## 4824	No	No	Month-to-month
## 4838	No	No	Month-to-month
## 4902	No	No	Month-to-month
## 4925	Yes	No	Month-to-month
## 4931	No	No	Month-to-month
## 4940	No internet service	No internet service	Month-to-month
## 4955	Yes	Yes	Month-to-month
## 4956	No	No	Month-to-month
## 4960	No internet service	No internet service	Month-to-month
## 4979	No	No	Month-to-month
## 5024	No	No	Month-to-month
## 5034	No internet service	No internet service	Month-to-month
## 5047	No	No	Month-to-month
## 5050	No internet service	No internet service	Month-to-month
## 5072	No	No	Month-to-month
## 5101	No	No	Month-to-month
## 5117	No	No	Month-to-month
## 5136	No internet service	No internet service	Month-to-month
## 5141	Yes	Yes	Month-to-month
## 5161	No	No	Month-to-month
## 5166	No	No	Month-to-month
## 5171	No internet service	No internet service	Month-to-month
## 5187	Yes	No	Month-to-month
## 5190	No	No	Month-to-month

## 5220	No internet service	No internet service	Month-to-month
## 5288	No internet service	No internet service	Month-to-month
## 5289	Yes	No	Month-to-month
## 5301	Yes	No	Month-to-month
## 5308	Yes	Yes	Month-to-month
## 5313	No	No	Month-to-month
## 5316	No	No	Month-to-month
## 5337	No internet service	No internet service	Month-to-month
## 5342	No	No	Month-to-month
## 5355	Yes	Yes	Month-to-month
## 5376	No	No	Month-to-month
## 5389	No internet service	No internet service	Month-to-month
## 5394	No	No	Month-to-month
## 5412	No	No	Month-to-month
## 5437	No	No	Month-to-month
## 5447	No internet service	No internet service	Month-to-month
## 5451	Yes	No	Month-to-month
## 5455	No	No	Month-to-month
## 5464	No	No	Month-to-month
## 5475	Yes	No	Month-to-month
## 5481	No	No	Month-to-month
## 5482	No	No	Month-to-month
## 5486	No	No	Month-to-month
## 5499	No	No	Month-to-month
## 5507	No internet service	No internet service	Month-to-month
## 5515	No	No	Month-to-month
## 5520	No	No	Month-to-month
## 5523	No	No	Month-to-month
## 5539	No	Yes	Month-to-month
## 5541	No internet service	No internet service	Month-to-month
## 5554	No	Yes	Month-to-month
## 5562	No internet service	No internet service	Month-to-month
## 5574	No	No	Month-to-month
## 5577	Yes	No	Month-to-month
## 5586	No internet service	No internet service	Month-to-month
## 5589	No	No	Month-to-month
## 5604	No	No	Month-to-month
## 5616	No internet service	No internet service	Month-to-month
## 5630	No internet service	No internet service	Month-to-month
## 5635	No internet service	No internet service	Month-to-month
## 5639	No internet service	No internet service	Month-to-month
## 5641	No	Yes	Month-to-month
## 5644	No	No	Month-to-month
## 5645	No	No	Month-to-month
## 5647	No internet service	No internet service	Month-to-month
## 5653	No	No	Month-to-month
## 5657	No	No	Month-to-month
## 5663	No	No	Month-to-month
## 5677	No internet service	No internet service	Month-to-month
## 5679	No	No	Month-to-month

## 5681	No internet service	No internet service	Month-to-month
## 5683	No	Yes	Month-to-month
## 5706	No internet service	No internet service	Month-to-month
## 5707	No	No	Month-to-month
## 5725	No	No	Month-to-month
## 5737	No internet service	No internet service	Month-to-month
## 5739	No internet service	No internet service	Month-to-month
## 5760	No	No	Month-to-month
## 5779	No internet service	No internet service	Month-to-month
## 5783	No	No	Month-to-month
## 5784	Yes	Yes	Month-to-month
## 5813	No	No	Month-to-month
## 5818	No	No	Month-to-month
## 5826	No	No	Month-to-month
## 5827	Yes	No	Month-to-month
## 5869	No	No	Month-to-month
## 5873	No	No	Month-to-month
## 5877	No	Yes	Month-to-month
## 5906	No	Yes	Month-to-month
## 5908	No	No	Month-to-month
## 5909	No internet service	No internet service	Month-to-month
## 5944	Yes	No	Month-to-month
## 5951	No	No	Month-to-month
## 5954	No	No	Month-to-month
## 5962	No	No	Month-to-month
## 5988	No internet service	No internet service	Two year
## 6002	No	No	Month-to-month
## 6041	No	No	Month-to-month
## 6065	Yes	Yes	Month-to-month
## 6075	No	No	Month-to-month
## 6081	No	No	Month-to-month
## 6082	No	No	Month-to-month
## 6089	No	Yes	Month-to-month
## 6090	Yes	No	Month-to-month
## 6097	No	No	Month-to-month
## 6108	No internet service	No internet service	Month-to-month
## 6150	No	No	One year
## 6169	No	Yes	Month-to-month
## 6170	No	No	Month-to-month
## 6171	No internet service	No internet service	Month-to-month
## 6191	No	Yes	Month-to-month
## 6220	No	No	Month-to-month
## 6231	No internet service	No internet service	Month-to-month
## 6232	No	No	Month-to-month
## 6238	No	No	Month-to-month
## 6241	Yes	Yes	Month-to-month
## 6252	No internet service	No internet service	Month-to-month
## 6257	No	Yes	Month-to-month
## 6258	No	No	Month-to-month
## 6268	No	No	Month-to-month

## 6295	No internet service	No internet service	Month-to-month
## 6318	No	No	Month-to-month
## 6339	No internet service	No internet service	Month-to-month
## 6340	No	No	Month-to-month
## 6347	No	No	Month-to-month
## 6361	No internet service	No internet service	Month-to-month
## 6376	No	No	Month-to-month
## 6378	No	Yes	Month-to-month
## 6382	No internet service	No internet service	Month-to-month
## 6389	No internet service	No internet service	Month-to-month
## 6435	No	No	Month-to-month
## 6439	No	No	Month-to-month
## 6450	No internet service	No internet service	Month-to-month
## 6474	Yes	Yes	Month-to-month
## 6480	Yes	No	Month-to-month
## 6483	Yes	Yes	Month-to-month
## 6489	No	No	Month-to-month
## 6490	No internet service	No internet service	Month-to-month
## 6492	No	No	Month-to-month
## 6496	No	No	Month-to-month
## 6499	No	No	Month-to-month
## 6500	No internet service	No internet service	Month-to-month
## 6510	No	No	Month-to-month
## 6517	No	No	Month-to-month
## 6519	No	No	Month-to-month
## 6537	No	No	Month-to-month
## 6550	No	Yes	Month-to-month
## 6555	No	No	Month-to-month
## 6591	No	No	Month-to-month
## 6608	No	No	Month-to-month
## 6610	No internet service	No internet service	Month-to-month
## 6613	No	No	Month-to-month
## 6621	No	Yes	Month-to-month
## 6624	No	No	Month-to-month
## 6634	No	No	Month-to-month
## 6661	No	No	Month-to-month
## 6664	Yes	No	Month-to-month
## 6707	No internet service	No internet service	Month-to-month
## 6739	No internet service	No internet service	Month-to-month
## 6749	No	Yes	Month-to-month
## 6762	No internet service	No internet service	Month-to-month
## 6765	No	No	Month-to-month
## 6775	No internet service	No internet service	Month-to-month
## 6790	No internet service	No internet service	Month-to-month
## 6812	Yes	Yes	Month-to-month
## 6817	No	No	Month-to-month
## 6841	No internet service	No internet service	Month-to-month
## 6846	No	No	Month-to-month
## 6847	No	No	Month-to-month
## 6867	Yes	Yes	Month-to-month

## 6878	No	No	Month-to-month
## 6897	No	No	Month-to-month
## 6900	No	No	Month-to-month
## 6910	No	No	Month-to-month
## 6925	No	No	Month-to-month
## 6934	No	No	Month-to-month
## 6944	No	No	Month-to-month
## 6970	No internet service	No internet service	Month-to-month
## 6980	No	No	Month-to-month
## 7011	No	No	Month-to-month
## 7017	No	No	Month-to-month
## 7019	No	No	Month-to-month
## 7033	No	No	Month-to-month
##	PaperlessBilling	PaymentMethod	MonthlyCharges
## 1	Yes	Electronic check	29.85
## 21	Yes	Electronic check	39.65
## 23	No	Mailed check	20.15
## 28	No	Electronic check	30.20
## 34	No	Bank transfer (automatic)	20.20
## 35	No	Bank transfer (automatic)	45.25
## 71	No	Mailed check	49.05
## 81	Yes	Electronic check	79.35
## 92	No	Electronic check	74.70
## 101	No	Mailed check	20.20
## 102	No	Electronic check	19.45
## 129	No	Mailed check	19.75
## 134	Yes	Electronic check	35.45
## 140	Yes	Mailed check	70.45
## 148	Yes	Electronic check	45.65
## 181	No	Bank transfer (automatic)	29.95
## 182	No	Mailed check	45.30
## 186	Yes	Electronic check	24.80
## 200	No	Mailed check	20.75
## 208	No	Electronic check	79.90
## 212	No	Electronic check	25.25
## 223	Yes	Electronic check	20.20
## 228	No	Mailed check	55.20
## 233	Yes	Mailed check	84.60
## 249	Yes	Mailed check	48.55
## 253	No	Electronic check	40.20
## 273	No	Bank transfer (automatic)	24.80
## 275	No	Mailed check	70.60
## 283	No	Mailed check	25.40
## 288	No	Electronic check	70.00
## 296	No	Mailed check	20.25
## 300	Yes	Mailed check	73.60
## 311	Yes	Bank transfer (automatic)	19.25
## 323	Yes	Electronic check	44.80
## 346	Yes	Electronic check	72.10
## 368	No	Mailed check	19.15

## 377	No	Mailed check	25.35
## 382	No	Mailed check	50.65
## 384	Yes	Credit card (automatic)	90.85
## 390	No	Electronic check	44.00
## 409	Yes	Mailed check	19.90
## 410	Yes	Mailed check	19.60
## 420	Yes	Bank transfer (automatic)	75.30
## 440	No	Mailed check	55.05
## 447	No	Mailed check	69.55
## 460	Yes	Electronic check	75.10
## 472	Yes	Electronic check	55.00
## 475	Yes	Electronic check	74.70
## 490	Yes	Electronic check	74.35
## 495	No	Mailed check	20.40
## 510	No	Mailed check	19.85
## 535	Yes	Electronic check	85.00
## 543	No	Mailed check	19.55
## 557	No	Bank transfer (automatic)	19.90
## 560	Yes	Electronic check	49.30
## 582	No	Mailed check	75.30
## 584	Yes	Mailed check	19.00
## 586	Yes	Electronic check	85.70
## 595	No	Mailed check	45.60
## 643	Yes	Electronic check	89.55
## 647	Yes	Mailed check	45.70
## 652	Yes	Mailed check	74.60
## 663	No	Mailed check	20.05
## 673	Yes	Mailed check	75.05
## 681	No	Electronic check	80.00
## 685	No	Mailed check	71.10
## 686	Yes	Electronic check	49.90
## 691	Yes	Mailed check	20.45
## 696	Yes	Mailed check	20.65
## 711	No	Mailed check	19.55
## 761	No	Mailed check	20.80
## 773	No	Mailed check	19.90
## 784	Yes	Electronic check	52.20
## 799	No	Electronic check	20.00
## 810	Yes	Electronic check	69.55
## 838	No	Mailed check	44.40
## 845	Yes	Electronic check	89.90
## 858	No	Electronic check	50.80
## 886	Yes	Mailed check	20.05
## 894	No	Electronic check	24.60
## 916	Yes	Electronic check	73.55
## 956	No	Credit card (automatic)	44.70
## 965	Yes	Mailed check	45.70
## 971	No	Electronic check	90.55
## 977	Yes	Electronic check	69.90
## 984	Yes	Electronic check	86.60

## 988	No	Bank transfer (automatic)	19.75
## 1014	No	Electronic check	49.50
## 1050	No	Mailed check	19.65
## 1075	No	Mailed check	21.10
## 1096	Yes	Electronic check	80.55
## 1145	Yes	Electronic check	35.55
## 1152	No	Electronic check	18.85
## 1162	Yes	Mailed check	31.35
## 1169	No	Mailed check	19.65
## 1174	Yes	Electronic check	19.85
## 1186	Yes	Electronic check	60.15
## 1206	Yes	Electronic check	74.90
## 1209	Yes	Electronic check	80.25
## 1225	Yes	Mailed check	45.85
## 1244	No	Electronic check	45.30
## 1250	No	Mailed check	45.05
## 1252	No	Electronic check	75.80
## 1253	No	Electronic check	19.45
## 1283	Yes	Mailed check	62.80
## 1287	No	Credit card (automatic)	74.10
## 1320	Yes	Mailed check	19.45
## 1326	Yes	Electronic check	69.25
## 1332	Yes	Mailed check	25.15
## 1335	Yes	Electronic check	25.20
## 1339	No	Mailed check	20.15
## 1372	Yes	Electronic check	79.20
## 1374	No	Mailed check	19.85
## 1384	Yes	Bank transfer (automatic)	49.95
## 1394	No	Mailed check	20.35
## 1406	No	Electronic check	76.00
## 1429	Yes	Electronic check	50.45
## 1447	Yes	Electronic check	50.05
## 1459	No	Electronic check	20.55
## 1466	No	Credit card (automatic)	74.60
## 1489	No	Mailed check	51.25
## 1492	No	Mailed check	19.55
## 1506	Yes	Electronic check	74.70
## 1514	Yes	Mailed check	25.80
## 1550	Yes	Mailed check	45.85
## 1557	No	Electronic check	91.70
## 1562	Yes	Electronic check	74.95
## 1572	No	Mailed check	20.05
## 1601	Yes	Electronic check	88.80
## 1634	No	Electronic check	43.80
## 1651	No	Mailed check	85.80
## 1652	Yes	Electronic check	79.10
## 1655	No	Mailed check	18.80
## 1671	Yes	Mailed check	50.15
## 1695	Yes	Electronic check	34.70
## 1705	Yes	Electronic check	99.75

## 1731	Yes	Electronic check	59.85
## 1732	Yes	Electronic check	69.60
## 1734	No	Mailed check	19.05
## 1737	No	Mailed check	19.50
## 1740	Yes	Electronic check	69.90
## 1775	Yes	Mailed check	48.75
## 1784	Yes	Electronic check	71.65
## 1801	Yes	Bank transfer (automatic)	43.85
## 1808	No	Electronic check	76.35
## 1814	Yes	Electronic check	75.50
## 1817	No	Mailed check	19.20
## 1834	No	Electronic check	47.95
## 1835	No	Electronic check	45.10
## 1836	Yes	Electronic check	45.00
## 1838	No	Bank transfer (automatic)	20.05
## 1853	No	Credit card (automatic)	46.20
## 1854	No	Electronic check	45.15
## 1855	Yes	Electronic check	43.30
## 1862	No	Mailed check	45.95
## 1869	Yes	Bank transfer (automatic)	44.05
## 1871	Yes	Mailed check	45.55
## 1880	Yes	Electronic check	70.05
## 1891	Yes	Electronic check	21.00
## 1892	No	Mailed check	45.10
## 1920	No	Mailed check	50.90
## 1930	Yes	Electronic check	81.05
## 1933	No	Mailed check	20.20
## 1939	No	Mailed check	20.90
## 1940	Yes	Mailed check	21.05
## 1944	Yes	Credit card (automatic)	49.80
## 1954	Yes	Electronic check	75.35
## 1955	Yes	Electronic check	75.45
## 1977	Yes	Electronic check	93.55
## 1994	Yes	Electronic check	45.70
## 1996	Yes	Electronic check	69.95
## 2019	Yes	Mailed check	45.30
## 2034	Yes	Mailed check	20.20
## 2037	No	Electronic check	74.30
## 2038	Yes	Mailed check	70.60
## 2047	No	Mailed check	24.70
## 2070	Yes	Electronic check	95.60
## 2078	No	Electronic check	71.35
## 2084	Yes	Mailed check	20.15
## 2085	No	Bank transfer (automatic)	69.75
## 2096	Yes	Electronic check	79.95
## 2097	No	Electronic check	19.30
## 2117	No	Electronic check	54.35
## 2122	No	Mailed check	20.45
## 2127	No	Mailed check	44.45
## 2130	Yes	Electronic check	75.30

## 2134	Yes	Electronic check	70.55
## 2135	No	Mailed check	20.15
## 2153	Yes	Electronic check	50.10
## 2173	No	Credit card (automatic)	43.95
## 2192	Yes	Electronic check	91.30
## 2195	Yes	Electronic check	79.50
## 2209	Yes	Electronic check	100.80
## 2239	Yes	Electronic check	95.85
## 2247	Yes	Electronic check	102.45
## 2256	No	Mailed check	51.20
## 2270	No	Mailed check	70.90
## 2273	Yes	Electronic check	49.85
## 2276	Yes	Electronic check	74.50
## 2284	Yes	Mailed check	71.55
## 2296	Yes	Electronic check	25.15
## 2297	No	Electronic check	45.20
## 2362	No	Mailed check	45.95
## 2364	Yes	Electronic check	44.75
## 2367	Yes	Electronic check	70.15
## 2368	Yes	Credit card (automatic)	85.55
## 2372	Yes	Electronic check	25.70
## 2389	Yes	Electronic check	55.45
## 2398	Yes	Electronic check	88.35
## 2423	Yes	Electronic check	70.05
## 2428	No	Electronic check	35.90
## 2463	Yes	Bank transfer (automatic)	70.45
## 2465	Yes	Electronic check	77.15
## 2466	Yes	Bank transfer (automatic)	35.25
## 2511	Yes	Mailed check	74.25
## 2518	Yes	Bank transfer (automatic)	69.50
## 2527	No	Mailed check	19.40
## 2574	Yes	Mailed check	54.75
## 2578	Yes	Electronic check	94.60
## 2601	No	Electronic check	70.10
## 2608	Yes	Electronic check	69.75
## 2614	Yes	Mailed check	80.20
## 2618	Yes	Mailed check	19.60
## 2629	Yes	Mailed check	83.40
## 2635	Yes	Electronic check	84.80
## 2646	No	Credit card (automatic)	19.80
## 2653	No	Mailed check	55.55
## 2655	Yes	Electronic check	90.75
## 2669	No	Mailed check	19.75
## 2703	No	Electronic check	44.00
## 2704	Yes	Mailed check	50.10
## 2714	Yes	Mailed check	20.45
## 2734	Yes	Mailed check	55.30
## 2741	No	Mailed check	44.40
## 2746	Yes	Electronic check	86.05
## 2754	No	Mailed check	95.65

## 2757	No	Mailed check	20.95
## 2760	No	Bank transfer (automatic)	19.65
## 2822	Yes	Electronic check	74.40
## 2828	Yes	Mailed check	50.15
## 2829	No	Mailed check	20.45
## 2838	No	Mailed check	20.50
## 2857	Yes	Electronic check	50.15
## 2862	Yes	Electronic check	81.95
## 2864	No	Mailed check	44.60
## 2888	Yes	Mailed check	45.05
## 2889	Yes	Electronic check	71.00
## 2892	Yes	Electronic check	79.70
## 2893	No	Mailed check	20.45
## 2901	Yes	Electronic check	69.25
## 2912	No	Bank transfer (automatic)	73.50
## 2928	Yes	Electronic check	69.90
## 2959	No	Credit card (automatic)	19.55
## 2978	Yes	Mailed check	19.50
## 2990	Yes	Mailed check	19.20
## 2994	No	Mailed check	20.40
## 2996	No	Bank transfer (automatic)	25.25
## 3005	No	Mailed check	89.15
## 3010	Yes	Mailed check	25.00
## 3031	Yes	Electronic check	79.55
## 3035	No	Electronic check	84.50
## 3042	Yes	Electronic check	49.90
## 3045	Yes	Mailed check	45.40
## 3066	Yes	Mailed check	45.80
## 3091	Yes	Mailed check	53.50
## 3093	Yes	Mailed check	25.10
## 3104	Yes	Electronic check	19.45
## 3111	No	Mailed check	19.10
## 3133	Yes	Mailed check	74.30
## 3139	Yes	Electronic check	45.30
## 3143	No	Mailed check	19.80
## 3186	No	Mailed check	25.05
## 3203	Yes	Electronic check	55.25
## 3210	Yes	Electronic check	93.85
## 3217	No	Mailed check	50.45
## 3242	No	Mailed check	20.10
## 3259	Yes	Electronic check	24.40
## 3273	Yes	Electronic check	81.70
## 3295	Yes	Mailed check	69.10
## 3302	Yes	Electronic check	69.60
## 3311	No	Electronic check	78.45
## 3313	No	Mailed check	20.30
## 3314	No	Electronic check	19.20
## 3325	No	Electronic check	75.55
## 3329	Yes	Electronic check	70.25
## 3333	No	Mailed check	46.30

## 3351	Yes	Mailed check	44.15
## 3353	Yes	Mailed check	85.45
## 3358	No	Electronic check	59.20
## 3363	Yes	Electronic check	54.90
## 3377	Yes	Mailed check	19.40
## 3381	Yes	Electronic check	95.10
## 3390	Yes	Mailed check	70.60
## 3424	No	Mailed check	50.60
## 3427	Yes	Electronic check	69.80
## 3453	Yes	Mailed check	44.95
## 3456	Yes	Electronic check	90.55
## 3458	Yes	Mailed check	19.50
## 3469	No	Mailed check	19.70
## 3496	Yes	Electronic check	75.35
## 3500	No	Mailed check	20.90
## 3510	Yes	Mailed check	44.90
## 3519	No	Mailed check	19.45
## 3528	Yes	Bank transfer (automatic)	74.60
## 3537	Yes	Mailed check	79.15
## 3552	Yes	Electronic check	79.60
## 3566	Yes	Electronic check	50.75
## 3575	Yes	Mailed check	20.35
## 3593	Yes	Electronic check	45.65
## 3599	No	Electronic check	46.30
## 3632	Yes	Electronic check	49.55
## 3634	Yes	Electronic check	71.25
## 3653	No	Electronic check	25.25
## 3672	Yes	Electronic check	75.10
## 3675	No	Electronic check	45.80
## 3676	No	Mailed check	20.50
## 3678	No	Mailed check	30.55
## 3680	Yes	Mailed check	20.10
## 3683	Yes	Electronic check	69.10
## 3690	Yes	Electronic check	71.15
## 3710	No	Mailed check	50.75
## 3726	Yes	Mailed check	70.80
## 3747	Yes	Electronic check	68.95
## 3754	No	Mailed check	29.15
## 3755	No	Mailed check	20.05
## 3757	Yes	Mailed check	24.45
## 3759	No	Bank transfer (automatic)	49.55
## 3767	Yes	Electronic check	55.80
## 3772	Yes	Electronic check	79.05
## 3773	Yes	Electronic check	95.00
## 3774	No	Mailed check	25.20
## 3803	No	Mailed check	20.00
## 3806	Yes	Electronic check	71.65
## 3811	No	Electronic check	44.55
## 3822	Yes	Electronic check	74.20
## 3844	No	Mailed check	70.85

## 3853	Yes	Bank transfer (automatic)	19.65
## 3866	No	Mailed check	24.00
## 3880	No	Electronic check	45.75
## 3889	No	Credit card (automatic)	80.15
## 3903	No	Mailed check	29.90
## 3907	No	Electronic check	78.80
## 3918	No	Electronic check	69.10
## 3924	Yes	Mailed check	80.85
## 3940	No	Electronic check	78.65
## 3943	Yes	Electronic check	42.90
## 3944	No	Electronic check	44.00
## 3970	Yes	Credit card (automatic)	69.95
## 3984	Yes	Electronic check	24.25
## 4006	Yes	Mailed check	24.05
## 4011	No	Mailed check	20.40
## 4013	No	Electronic check	50.55
## 4017	No	Mailed check	45.35
## 4022	Yes	Mailed check	20.50
## 4063	No	Electronic check	70.50
## 4065	No	Electronic check	50.15
## 4066	No	Mailed check	19.75
## 4082	Yes	Electronic check	69.60
## 4085	No	Electronic check	78.05
## 4091	No	Mailed check	49.90
## 4093	Yes	Mailed check	20.25
## 4095	No	Electronic check	74.00
## 4099	Yes	Mailed check	20.20
## 4132	Yes	Mailed check	20.25
## 4139	Yes	Electronic check	85.45
## 4157	Yes	Mailed check	19.75
## 4173	No	Mailed check	19.50
## 4184	No	Mailed check	33.60
## 4186	No	Electronic check	20.70
## 4213	No	Electronic check	90.60
## 4222	No	Credit card (automatic)	19.30
## 4229	Yes	Electronic check	68.50
## 4233	Yes	Mailed check	69.95
## 4237	No	Credit card (automatic)	19.95
## 4243	No	Mailed check	19.75
## 4276	Yes	Mailed check	25.75
## 4291	No	Electronic check	40.10
## 4316	No	Electronic check	79.55
## 4326	No	Credit card (automatic)	20.75
## 4327	Yes	Electronic check	89.10
## 4349	Yes	Mailed check	19.10
## 4350	Yes	Electronic check	80.30
## 4354	Yes	Electronic check	74.90
## 4373	Yes	Bank transfer (automatic)	20.15
## 4388	Yes	Mailed check	20.25
## 4393	No	Mailed check	19.20

## 4397	Yes	Electronic check	25.10
## 4418	Yes	Mailed check	70.45
## 4425	No	Electronic check	24.75
## 4444	No	Mailed check	44.75
## 4456	Yes	Mailed check	50.45
## 4460	Yes	Credit card (automatic)	100.25
## 4464	Yes	Electronic check	69.85
## 4477	No	Mailed check	20.90
## 4481	Yes	Mailed check	69.40
## 4485	Yes	Electronic check	70.35
## 4492	Yes	Credit card (automatic)	19.75
## 4496	Yes	Electronic check	70.10
## 4510	No	Electronic check	84.30
## 4521	No	Bank transfer (automatic)	19.95
## 4535	No	Credit card (automatic)	49.00
## 4537	Yes	Electronic check	69.35
## 4541	No	Bank transfer (automatic)	20.95
## 4542	No	Mailed check	50.55
## 4545	Yes	Electronic check	80.55
## 4546	No	Bank transfer (automatic)	44.15
## 4565	No	Mailed check	20.00
## 4586	Yes	Electronic check	85.05
## 4608	Yes	Mailed check	59.55
## 4633	No	Mailed check	19.45
## 4641	Yes	Electronic check	70.00
## 4642	No	Mailed check	24.40
## 4647	Yes	Mailed check	70.70
## 4705	No	Electronic check	61.15
## 4707	Yes	Mailed check	44.45
## 4722	No	Mailed check	20.25
## 4724	Yes	Electronic check	74.35
## 4726	No	Mailed check	62.05
## 4758	No	Mailed check	60.10
## 4760	Yes	Electronic check	78.95
## 4768	No	Credit card (automatic)	19.85
## 4785	Yes	Mailed check	19.55
## 4790	No	Mailed check	71.10
## 4801	Yes	Electronic check	94.00
## 4810	Yes	Bank transfer (automatic)	20.30
## 4818	No	Mailed check	19.90
## 4824	Yes	Electronic check	53.95
## 4838	Yes	Electronic check	69.80
## 4902	Yes	Electronic check	74.70
## 4925	Yes	Electronic check	35.75
## 4931	Yes	Credit card (automatic)	44.55
## 4940	No	Mailed check	18.90
## 4955	Yes	Electronic check	90.85
## 4956	No	Mailed check	69.40
## 4960	Yes	Credit card (automatic)	20.15
## 4979	Yes	Electronic check	44.10

## 5024	Yes	Electronic check	70.30
## 5034	Yes	Mailed check	19.40
## 5047	No	Mailed check	45.15
## 5050	Yes	Bank transfer (automatic)	20.20
## 5072	No	Credit card (automatic)	75.35
## 5101	No	Electronic check	75.30
## 5117	No	Electronic check	70.40
## 5136	No	Electronic check	19.75
## 5141	Yes	Electronic check	89.25
## 5161	No	Electronic check	74.35
## 5166	Yes	Electronic check	69.65
## 5171	No	Mailed check	19.65
## 5187	Yes	Electronic check	36.45
## 5190	No	Electronic check	54.30
## 5220	No	Mailed check	20.60
## 5288	No	Credit card (automatic)	20.55
## 5289	Yes	Electronic check	79.65
## 5301	Yes	Mailed check	80.05
## 5308	Yes	Electronic check	90.10
## 5313	No	Mailed check	51.25
## 5316	Yes	Electronic check	45.60
## 5337	No	Mailed check	19.10
## 5342	Yes	Mailed check	74.45
## 5355	Yes	Electronic check	89.35
## 5376	Yes	Electronic check	50.80
## 5389	No	Mailed check	19.90
## 5394	Yes	Electronic check	70.60
## 5412	Yes	Electronic check	24.80
## 5437	No	Electronic check	54.50
## 5447	No	Mailed check	19.65
## 5451	Yes	Mailed check	84.65
## 5455	Yes	Electronic check	69.55
## 5464	Yes	Bank transfer (automatic)	44.35
## 5475	Yes	Electronic check	84.60
## 5481	Yes	Mailed check	45.40
## 5482	Yes	Electronic check	73.65
## 5486	Yes	Mailed check	50.75
## 5499	No	Electronic check	46.00
## 5507	No	Mailed check	20.20
## 5515	Yes	Bank transfer (automatic)	48.45
## 5520	No	Mailed check	55.70
## 5523	Yes	Mailed check	70.15
## 5539	Yes	Electronic check	81.10
## 5541	No	Mailed check	20.55
## 5554	Yes	Mailed check	55.70
## 5562	No	Electronic check	20.65
## 5574	Yes	Electronic check	69.85
## 5577	Yes	Mailed check	53.55
## 5586	Yes	Mailed check	19.30
## 5589	Yes	Mailed check	49.65

## 5604	Yes	Credit card (automatic)	48.60
## 5616	Yes	Bank transfer (automatic)	20.20
## 5630	No	Mailed check	20.05
## 5635	Yes	Electronic check	19.90
## 5639	No	Electronic check	19.95
## 5641	No	Electronic check	79.60
## 5644	Yes	Electronic check	75.90
## 5645	No	Electronic check	76.20
## 5647	No	Mailed check	19.25
## 5653	Yes	Electronic check	48.60
## 5657	No	Electronic check	49.75
## 5663	Yes	Electronic check	70.25
## 5677	No	Electronic check	19.75
## 5679	Yes	Electronic check	60.00
## 5681	Yes	Mailed check	20.85
## 5683	No	Electronic check	35.00
## 5706	No	Mailed check	19.65
## 5707	Yes	Electronic check	75.70
## 5725	Yes	Mailed check	71.35
## 5737	No	Mailed check	20.05
## 5739	No	Mailed check	20.60
## 5760	Yes	Mailed check	70.15
## 5779	No	Credit card (automatic)	20.30
## 5783	Yes	Electronic check	69.65
## 5784	Yes	Electronic check	89.30
## 5813	Yes	Electronic check	71.00
## 5818	Yes	Electronic check	44.40
## 5826	Yes	Electronic check	70.30
## 5827	Yes	Bank transfer (automatic)	79.35
## 5869	Yes	Mailed check	44.00
## 5873	Yes	Electronic check	69.65
## 5877	Yes	Electronic check	86.00
## 5906	Yes	Electronic check	85.00
## 5908	Yes	Mailed check	44.30
## 5909	No	Mailed check	20.20
## 5944	Yes	Electronic check	84.85
## 5951	Yes	Electronic check	24.70
## 5954	Yes	Mailed check	50.70
## 5962	No	Mailed check	35.90
## 5988	No	Mailed check	20.35
## 6002	Yes	Mailed check	24.90
## 6041	No	Mailed check	70.75
## 6065	Yes	Mailed check	45.30
## 6075	Yes	Electronic check	23.45
## 6081	No	Mailed check	29.70
## 6082	Yes	Credit card (automatic)	49.80
## 6089	Yes	Electronic check	55.40
## 6090	Yes	Electronic check	90.60
## 6097	Yes	Electronic check	70.20
## 6108	No	Mailed check	19.95

## 6150	No	Mailed check	25.85
## 6169	Yes	Electronic check	79.25
## 6170	Yes	Bank transfer (automatic)	44.90
## 6171	No	Credit card (automatic)	19.40
## 6191	No	Electronic check	80.50
## 6220	Yes	Mailed check	25.70
## 6231	No	Mailed check	20.05
## 6232	Yes	Mailed check	76.40
## 6238	No	Electronic check	69.95
## 6241	Yes	Electronic check	93.30
## 6252	No	Electronic check	19.25
## 6257	No	Mailed check	35.05
## 6258	Yes	Electronic check	73.00
## 6268	Yes	Electronic check	70.10
## 6295	No	Mailed check	19.70
## 6318	Yes	Electronic check	79.15
## 6339	Yes	Mailed check	20.25
## 6340	Yes	Mailed check	49.90
## 6347	Yes	Credit card (automatic)	49.25
## 6361	Yes	Mailed check	20.30
## 6376	Yes	Credit card (automatic)	74.30
## 6378	Yes	Mailed check	44.65
## 6382	No	Mailed check	19.55
## 6389	No	Mailed check	20.40
## 6435	Yes	Electronic check	50.50
## 6439	Yes	Electronic check	74.40
## 6450	No	Mailed check	19.55
## 6474	No	Electronic check	94.40
## 6480	Yes	Credit card (automatic)	55.00
## 6483	Yes	Electronic check	101.45
## 6489	Yes	Electronic check	69.50
## 6490	Yes	Mailed check	18.85
## 6492	Yes	Electronic check	69.20
## 6496	Yes	Electronic check	69.65
## 6499	Yes	Electronic check	82.30
## 6500	No	Mailed check	20.30
## 6510	No	Electronic check	25.05
## 6517	No	Electronic check	48.95
## 6519	No	Electronic check	45.30
## 6537	No	Mailed check	24.40
## 6550	Yes	Electronic check	56.25
## 6555	No	Electronic check	68.65
## 6591	Yes	Electronic check	70.85
## 6608	Yes	Electronic check	25.30
## 6610	Yes	Mailed check	20.10
## 6613	Yes	Mailed check	69.90
## 6621	Yes	Electronic check	80.80
## 6624	Yes	Electronic check	76.45
## 6634	Yes	Electronic check	74.50
## 6661	Yes	Electronic check	69.15

## 6664	Yes	Electronic check	54.65
## 6707	No	Mailed check	19.90
## 6739	No	Mailed check	20.35
## 6749	Yes	Electronic check	85.00
## 6762	Yes	Mailed check	19.90
## 6765	Yes	Electronic check	69.20
## 6775	No	Mailed check	19.65
## 6790	Yes	Mailed check	20.20
## 6812	Yes	Electronic check	50.35
## 6817	Yes	Electronic check	70.30
## 6841	Yes	Mailed check	19.30
## 6846	Yes	Mailed check	45.85
## 6847	Yes	Mailed check	79.55
## 6867	Yes	Electronic check	95.45
## 6878	No	Bank transfer (automatic)	69.70
## 6897	No	Mailed check	43.95
## 6900	Yes	Bank transfer (automatic)	45.10
## 6910	Yes	Mailed check	53.55
## 6925	Yes	Electronic check	69.35
## 6934	Yes	Electronic check	69.60
## 6944	No	Bank transfer (automatic)	30.50
## 6970	No	Mailed check	20.50
## 6980	No	Mailed check	24.20
## 7011	Yes	Electronic check	74.45
## 7017	No	Electronic check	49.95
## 7019	Yes	Mailed check	70.65
## 7033	Yes	Electronic check	75.75
##	TotalCharges	Churn	
## 1	29.85	No	
## 21	39.65	Yes	
## 23	20.15	Yes	
## 28	30.20	Yes	
## 34	20.20	No	
## 35	45.25	No	
## 71	49.05	No	
## 81	79.35	Yes	
## 92	74.70	No	
## 101	20.20	No	
## 102	19.45	No	
## 129	19.75	No	
## 134	35.45	Yes	
## 140	70.45	Yes	
## 148	45.65	Yes	
## 181	29.95	Yes	
## 182	45.30	No	
## 186	24.80	Yes	
## 200	20.75	No	
## 208	79.90	Yes	
## 212	25.25	No	
## 223	20.20	No	

## 228	55.20	Yes
## 233	84.60	Yes
## 249	48.55	Yes
## 253	40.20	Yes
## 273	24.80	Yes
## 275	70.60	Yes
## 283	25.40	No
## 288	70.00	Yes
## 296	20.25	No
## 300	73.60	Yes
## 311	19.25	No
## 323	44.80	No
## 346	72.10	No
## 368	19.15	No
## 377	25.35	No
## 382	50.65	Yes
## 384	90.85	Yes
## 390	44.00	No
## 409	19.90	Yes
## 410	19.60	Yes
## 420	75.30	Yes
## 440	55.05	No
## 447	69.55	Yes
## 460	75.10	No
## 472	55.00	Yes
## 475	74.70	Yes
## 490	74.35	Yes
## 495	20.40	No
## 510	19.85	No
## 535	85.00	Yes
## 543	19.55	No
## 557	19.90	No
## 560	49.30	No
## 582	75.30	Yes
## 584	19.00	No
## 586	85.70	Yes
## 595	45.60	No
## 643	89.55	Yes
## 647	45.70	Yes
## 652	74.60	Yes
## 663	20.05	No
## 673	75.05	Yes
## 681	80.00	Yes
## 685	71.10	No
## 686	49.90	No
## 691	20.45	No
## 696	20.65	No
## 711	19.55	Yes
## 761	20.80	No
## 773	19.90	Yes

## 784	52.20	Yes
## 799	20.00	No
## 810	69.55	Yes
## 838	44.40	Yes
## 845	89.90	Yes
## 858	50.80	Yes
## 886	20.05	No
## 894	24.60	Yes
## 916	73.55	Yes
## 956	44.70	Yes
## 965	45.70	Yes
## 971	90.55	Yes
## 977	69.90	Yes
## 984	86.60	Yes
## 988	19.75	No
## 1014	49.50	No
## 1050	19.65	Yes
## 1075	21.10	No
## 1096	80.55	No
## 1145	35.55	Yes
## 1152	18.85	No
## 1162	31.35	Yes
## 1169	19.65	No
## 1174	19.85	Yes
## 1186	60.15	Yes
## 1206	74.90	Yes
## 1209	80.25	Yes
## 1225	45.85	Yes
## 1244	45.30	Yes
## 1250	45.05	Yes
## 1252	75.80	Yes
## 1253	19.45	No
## 1283	62.80	No
## 1287	74.10	No
## 1320	19.45	Yes
## 1326	69.25	Yes
## 1332	25.15	No
## 1335	25.20	Yes
## 1339	20.15	Yes
## 1372	79.20	Yes
## 1374	19.85	No
## 1384	49.95	Yes
## 1394	20.35	No
## 1406	76.00	Yes
## 1429	50.45	Yes
## 1447	50.05	No
## 1459	20.55	Yes
## 1466	74.60	No
## 1489	51.25	No
## 1492	19.55	No

## 1506	74.70	Yes
## 1514	25.80	Yes
## 1550	45.85	Yes
## 1557	91.70	Yes
## 1562	74.95	Yes
## 1572	20.05	No
## 1601	88.80	Yes
## 1634	43.80	No
## 1651	85.80	Yes
## 1652	79.10	Yes
## 1655	18.80	No
## 1671	50.15	Yes
## 1695	34.70	Yes
## 1705	99.75	Yes
## 1731	59.85	Yes
## 1732	69.60	Yes
## 1734	19.05	No
## 1737	19.50	Yes
## 1740	69.90	Yes
## 1775	48.75	No
## 1784	71.65	Yes
## 1801	43.85	No
## 1808	76.35	Yes
## 1814	75.50	No
## 1817	19.20	No
## 1834	47.95	No
## 1835	45.10	Yes
## 1836	45.00	No
## 1838	20.05	Yes
## 1853	46.20	Yes
## 1854	45.15	Yes
## 1855	43.30	Yes
## 1862	45.95	Yes
## 1869	44.05	No
## 1871	45.55	No
## 1880	70.05	Yes
## 1891	21.00	Yes
## 1892	45.10	Yes
## 1920	50.90	Yes
## 1930	81.05	No
## 1933	20.20	No
## 1939	20.90	No
## 1940	21.05	No
## 1944	49.80	No
## 1954	75.35	Yes
## 1955	75.45	Yes
## 1977	93.55	Yes
## 1994	45.70	Yes
## 1996	69.95	Yes
## 2019	45.30	Yes

## 2034	20.20	Yes
## 2037	74.30	No
## 2038	70.60	No
## 2047	24.70	No
## 2070	95.60	Yes
## 2078	71.35	Yes
## 2084	20.15	Yes
## 2085	69.75	Yes
## 2096	79.95	Yes
## 2097	19.30	Yes
## 2117	54.35	Yes
## 2122	20.45	No
## 2127	44.45	No
## 2130	75.30	Yes
## 2134	70.55	Yes
## 2135	20.15	No
## 2153	50.10	No
## 2173	43.95	No
## 2192	91.30	Yes
## 2195	79.50	Yes
## 2209	100.80	Yes
## 2239	95.85	No
## 2247	102.45	Yes
## 2256	51.20	No
## 2270	70.90	Yes
## 2273	49.85	No
## 2276	74.50	Yes
## 2284	71.55	Yes
## 2296	25.15	Yes
## 2297	45.20	No
## 2362	45.95	Yes
## 2364	44.75	No
## 2367	70.15	Yes
## 2368	85.55	Yes
## 2372	25.70	No
## 2389	55.45	No
## 2398	88.35	Yes
## 2423	70.05	No
## 2428	35.90	Yes
## 2463	70.45	No
## 2465	77.15	Yes
## 2466	35.25	Yes
## 2511	74.25	Yes
## 2518	69.50	Yes
## 2527	19.40	Yes
## 2574	54.75	Yes
## 2578	94.60	Yes
## 2601	70.10	No
## 2608	69.75	Yes
## 2614	80.20	Yes

## 2618	19.60	Yes
## 2629	83.40	No
## 2635	84.80	Yes
## 2646	19.80	No
## 2653	55.55	No
## 2655	90.75	Yes
## 2669	19.75	Yes
## 2703	44.00	No
## 2704	50.10	Yes
## 2714	20.45	No
## 2734	55.30	No
## 2741	44.40	Yes
## 2746	86.05	Yes
## 2754	95.65	Yes
## 2757	20.95	Yes
## 2760	19.65	No
## 2822	74.40	Yes
## 2828	50.15	No
## 2829	20.45	No
## 2838	20.50	Yes
## 2857	50.15	No
## 2862	81.95	Yes
## 2864	44.60	No
## 2888	45.05	Yes
## 2889	71.00	Yes
## 2892	79.70	Yes
## 2893	20.45	No
## 2901	69.25	Yes
## 2912	73.50	Yes
## 2928	69.90	No
## 2959	19.55	No
## 2978	19.50	No
## 2990	19.20	No
## 2994	20.40	No
## 2996	25.25	No
## 3005	89.15	Yes
## 3010	25.00	No
## 3031	79.55	Yes
## 3035	84.50	Yes
## 3042	49.90	No
## 3045	45.40	Yes
## 3066	45.80	No
## 3091	53.50	Yes
## 3093	25.10	Yes
## 3104	19.45	Yes
## 3111	19.10	No
## 3133	74.30	No
## 3139	45.30	Yes
## 3143	19.80	Yes
## 3186	25.05	Yes

## 3203	55.25	No
## 3210	93.85	Yes
## 3217	50.45	Yes
## 3242	20.10	Yes
## 3259	24.40	No
## 3273	81.70	Yes
## 3295	69.10	Yes
## 3302	69.60	Yes
## 3311	78.45	Yes
## 3313	20.30	No
## 3314	19.20	No
## 3325	75.55	No
## 3329	70.25	No
## 3333	46.30	Yes
## 3351	44.15	Yes
## 3353	85.45	Yes
## 3358	59.20	Yes
## 3363	54.90	Yes
## 3377	19.40	No
## 3381	95.10	Yes
## 3390	70.60	No
## 3424	50.60	Yes
## 3427	69.80	Yes
## 3453	44.95	No
## 3456	90.55	Yes
## 3458	19.50	No
## 3469	19.70	No
## 3496	75.35	Yes
## 3500	20.90	Yes
## 3510	44.90	No
## 3519	19.45	No
## 3528	74.60	Yes
## 3537	79.15	No
## 3552	79.60	Yes
## 3566	50.75	Yes
## 3575	20.35	No
## 3593	45.65	Yes
## 3599	46.30	No
## 3632	49.55	Yes
## 3634	71.25	No
## 3653	25.25	Yes
## 3672	75.10	Yes
## 3675	45.80	Yes
## 3676	20.50	No
## 3678	30.55	No
## 3680	20.10	Yes
## 3683	69.10	Yes
## 3690	71.15	Yes
## 3710	50.75	No
## 3726	70.80	Yes

## 3747	68.95	Yes
## 3754	29.15	No
## 3755	20.05	No
## 3757	24.45	Yes
## 3759	49.55	No
## 3767	55.80	Yes
## 3772	79.05	Yes
## 3773	95.00	Yes
## 3774	25.20	Yes
## 3803	20.00	No
## 3806	71.65	Yes
## 3811	44.55	No
## 3822	74.20	Yes
## 3844	70.85	Yes
## 3853	19.65	No
## 3866	24.00	No
## 3880	45.75	Yes
## 3889	80.15	Yes
## 3903	29.90	No
## 3907	78.80	Yes
## 3918	69.10	Yes
## 3924	80.85	Yes
## 3940	78.65	Yes
## 3943	42.90	Yes
## 3944	44.00	No
## 3970	69.95	No
## 3984	24.25	Yes
## 4006	24.05	Yes
## 4011	20.40	No
## 4013	50.55	Yes
## 4017	45.35	No
## 4022	20.50	Yes
## 4063	70.50	Yes
## 4065	50.15	No
## 4066	19.75	Yes
## 4082	69.60	Yes
## 4085	78.05	Yes
## 4091	49.90	No
## 4093	20.25	No
## 4095	74.00	No
## 4099	20.20	Yes
## 4132	20.25	Yes
## 4139	85.45	Yes
## 4157	19.75	No
## 4173	19.50	No
## 4184	33.60	No
## 4186	20.70	No
## 4213	90.60	Yes
## 4222	19.30	No
## 4229	68.50	Yes

## 4233	69.95	Yes
## 4237	19.95	No
## 4243	19.75	No
## 4276	25.75	No
## 4291	40.10	Yes
## 4316	79.55	Yes
## 4326	20.75	No
## 4327	89.10	Yes
## 4349	19.10	Yes
## 4350	80.30	Yes
## 4354	74.90	Yes
## 4373	20.15	No
## 4388	20.25	No
## 4393	19.20	No
## 4397	25.10	Yes
## 4418	70.45	Yes
## 4425	24.75	Yes
## 4444	44.75	No
## 4456	50.45	Yes
## 4460	100.25	Yes
## 4464	69.85	Yes
## 4477	20.90	Yes
## 4481	69.40	Yes
## 4485	70.35	No
## 4492	19.75	No
## 4496	70.10	Yes
## 4510	84.30	Yes
## 4521	19.95	Yes
## 4535	49.00	No
## 4537	69.35	Yes
## 4541	20.95	No
## 4542	50.55	Yes
## 4545	80.55	Yes
## 4546	44.15	No
## 4565	20.00	Yes
## 4586	85.05	Yes
## 4608	59.55	No
## 4633	19.45	Yes
## 4641	70.00	Yes
## 4642	24.40	No
## 4647	70.70	No
## 4705	61.15	No
## 4707	44.45	Yes
## 4722	20.25	Yes
## 4724	74.35	Yes
## 4726	62.05	Yes
## 4758	60.10	Yes
## 4760	78.95	Yes
## 4768	19.85	No
## 4785	19.55	No

## 4790	71.10	Yes
## 4801	94.00	Yes
## 4810	20.30	No
## 4818	19.90	No
## 4824	53.95	Yes
## 4838	69.80	Yes
## 4902	74.70	Yes
## 4925	35.75	Yes
## 4931	44.55	No
## 4940	18.90	No
## 4955	90.85	Yes
## 4956	69.40	Yes
## 4960	20.15	Yes
## 4979	44.10	Yes
## 5024	70.30	Yes
## 5034	19.40	No
## 5047	45.15	No
## 5050	20.20	Yes
## 5072	75.35	No
## 5101	75.30	Yes
## 5117	70.40	Yes
## 5136	19.75	No
## 5141	89.25	No
## 5161	74.35	No
## 5166	69.65	Yes
## 5171	19.65	No
## 5187	36.45	Yes
## 5190	54.30	No
## 5220	20.60	No
## 5288	20.55	No
## 5289	79.65	Yes
## 5301	80.05	Yes
## 5308	90.10	No
## 5313	51.25	Yes
## 5316	45.60	Yes
## 5337	19.10	No
## 5342	74.45	Yes
## 5355	89.35	No
## 5376	50.80	Yes
## 5389	19.90	Yes
## 5394	70.60	Yes
## 5412	24.80	Yes
## 5437	54.50	No
## 5447	19.65	Yes
## 5451	84.65	Yes
## 5455	69.55	Yes
## 5464	44.35	Yes
## 5475	84.60	No
## 5481	45.40	No
## 5482	73.65	Yes

## 5486	50.75	No
## 5499	46.00	Yes
## 5507	20.20	No
## 5515	48.45	No
## 5520	55.70	No
## 5523	70.15	Yes
## 5539	81.10	Yes
## 5541	20.55	Yes
## 5554	55.70	Yes
## 5562	20.65	No
## 5574	69.85	Yes
## 5577	53.55	Yes
## 5586	19.30	Yes
## 5589	49.65	Yes
## 5604	48.60	Yes
## 5616	20.20	Yes
## 5630	20.05	Yes
## 5635	19.90	Yes
## 5639	19.95	Yes
## 5641	79.60	Yes
## 5644	75.90	Yes
## 5645	76.20	Yes
## 5647	19.25	Yes
## 5653	48.60	No
## 5657	49.75	No
## 5663	70.25	Yes
## 5677	19.75	No
## 5679	60.00	Yes
## 5681	20.85	Yes
## 5683	35.00	No
## 5706	19.65	No
## 5707	75.70	Yes
## 5725	71.35	Yes
## 5737	20.05	No
## 5739	20.60	Yes
## 5760	70.15	Yes
## 5779	20.30	No
## 5783	69.65	Yes
## 5784	89.30	Yes
## 5813	71.00	Yes
## 5818	44.40	Yes
## 5826	70.30	Yes
## 5827	79.35	Yes
## 5869	44.00	No
## 5873	69.65	Yes
## 5877	86.00	Yes
## 5906	85.00	No
## 5908	44.30	No
## 5909	20.20	Yes
## 5944	84.85	Yes

## 5951	24.70	No
## 5954	50.70	No
## 5962	35.90	No
## 5988	20.35	No
## 6002	24.90	No
## 6041	70.75	Yes
## 6065	45.30	Yes
## 6075	23.45	Yes
## 6081	29.70	Yes
## 6082	49.80	No
## 6089	55.40	Yes
## 6090	90.60	Yes
## 6097	70.20	No
## 6108	19.95	No
## 6150	25.85	No
## 6169	79.25	Yes
## 6170	44.90	Yes
## 6171	19.40	No
## 6191	80.50	Yes
## 6220	25.70	Yes
## 6231	20.05	No
## 6232	76.40	Yes
## 6238	69.95	Yes
## 6241	93.30	Yes
## 6252	19.25	No
## 6257	35.05	Yes
## 6258	73.00	Yes
## 6268	70.10	Yes
## 6295	19.70	Yes
## 6318	79.15	Yes
## 6339	20.25	No
## 6340	49.90	Yes
## 6347	49.25	Yes
## 6361	20.30	Yes
## 6376	74.30	Yes
## 6378	44.65	Yes
## 6382	19.55	No
## 6389	20.40	Yes
## 6435	50.50	Yes
## 6439	74.40	Yes
## 6450	19.55	No
## 6474	94.40	Yes
## 6480	55.00	Yes
## 6483	101.45	Yes
## 6489	69.50	Yes
## 6490	18.85	Yes
## 6492	69.20	Yes
## 6496	69.65	Yes
## 6499	82.30	Yes
## 6500	20.30	No

```
## 6510      25.05   Yes
## 6517      48.95   Yes
## 6519      45.30   Yes
## 6537      24.40   No
## 6550      56.25   Yes
## 6555      68.65   Yes
## 6591      70.85   Yes
## 6608      25.30   Yes
## 6610      20.10   Yes
## 6613      69.90   Yes
## 6621      80.80   Yes
## 6624      76.45   Yes
## 6634      74.50   Yes
## 6661      69.15   Yes
## 6664      54.65   No
## 6707      19.90   No
## 6739      20.35   No
## 6749      85.00   Yes
## 6762      19.90   No
## 6765      69.20   Yes
## 6775      19.65   No
## 6790      20.20   Yes
## 6812      50.35   Yes
## 6817      70.30   Yes
## 6841      19.30   No
## 6846      45.85   No
## 6847      79.55   Yes
## 6867      95.45   Yes
## 6878      69.70   Yes
## 6897      43.95   Yes
## 6900      45.10   Yes
## 6910      53.55   No
## 6925      69.35   Yes
## 6934      69.60   Yes
## 6944      30.50   Yes
## 6970      20.50   Yes
## 6980      24.20   No
## 7011      74.45   Yes
## 7017      49.95   No
## 7019      70.65   Yes
## 7033      75.75   Yes
```

#I will replace the total charges missing values with 0 for now
`cchurn[which(is.na(cchurn$TotalCharges)),]`

```
##      customerID gender SeniorCitizen Partner Dependents tenure
## 489  4472-LVYGI Female              0     Yes      Yes        0
## 754  3115-CZMZD  Male              0     No      Yes        0
## 937  5709-LVOEQ Female              0     Yes      Yes        0
## 1083 4367-NUYAO  Male              0     Yes      Yes        0
```

##	1341	1371-DWPAZ	Female	0	Yes	Yes	0
##	3332	7644-OMVMY	Male	0	Yes	Yes	0
##	3827	3213-VVOLG	Male	0	Yes	Yes	0
##	4381	2520-SGTTA	Female	0	Yes	Yes	0
##	5219	2923-ARZLG	Male	0	Yes	Yes	0
##	6671	4075-WKNIU	Female	0	Yes	Yes	0
##	6755	2775-SEFEE	Male	0	No	Yes	0
##		PhoneService	MultipleLines	InternetService		OnlineSecurity	
##	489	No	No phone service	DSL		Yes	
##	754	Yes	No	No	No internet service		
##	937	Yes	No	DSL		Yes	
##	1083	Yes	Yes	No	No internet service		
##	1341	No	No phone service	DSL		Yes	
##	3332	Yes	No	No	No internet service		
##	3827	Yes	Yes	No	No internet service		
##	4381	Yes	No	No	No internet service		
##	5219	Yes	No	No	No internet service		
##	6671	Yes	Yes	DSL		No	
##	6755	Yes	Yes	DSL		Yes	
##		OnlineBackup	DeviceProtection		TechSupport		
##	489	No	Yes		Yes		
##	754	No internet service	No internet service	No internet service			
##	937	Yes	Yes		No		
##	1083	No internet service	No internet service	No internet service			
##	1341	Yes	Yes		Yes		
##	3332	No internet service	No internet service	No internet service			
##	3827	No internet service	No internet service	No internet service			
##	4381	No internet service	No internet service	No internet service			
##	5219	No internet service	No internet service	No internet service			
##	6671	Yes	Yes		Yes		
##	6755	Yes	No		Yes		
##		StreamingTV	StreamingMovies	Contract	PaperlessBilling		
##	489	Yes	No	Two year		Yes	
##	754	No internet service	No internet service	Two year		No	
##	937	Yes	Yes	Two year		No	
##	1083	No internet service	No internet service	Two year		No	
##	1341	Yes	No	Two year		No	
##	3332	No internet service	No internet service	Two year		No	
##	3827	No internet service	No internet service	Two year		No	
##	4381	No internet service	No internet service	Two year		No	
##	5219	No internet service	No internet service	One year		Yes	
##	6671	Yes	No	Two year		No	
##	6755	No	No	Two year		Yes	
##		PaymentMethod	MonthlyCharges	TotalCharges	Churn		
##	489	Bank transfer (automatic)	52.55	NA	No		
##	754	Mailed check	20.25	NA	No		
##	937	Mailed check	80.85	NA	No		
##	1083	Mailed check	25.75	NA	No		
##	1341	Credit card (automatic)	56.05	NA	No		
##	3332	Mailed check	19.85	NA	No		

```
## 3827          Mailed check          25.35          NA      No
## 4381          Mailed check          20.00          NA      No
## 5219          Mailed check          19.70          NA      No
## 6671          Mailed check          73.35          NA      No
## 6755 Bank transfer (automatic)      61.90          NA      No
```

#replacing the missing values with the monthly charges

```
cchurn$TotalCharges[which(is.na(cchurn$TotalCharges))] <-
cchurn$MonthlyCharges[which(is.na(cchurn$TotalCharges))]
```

#Changing Customer ID to a character

```
cchurn$customerID <- as.character(cchurn$customerID)
str(cchurn)
```

```
## 'data.frame':    7043 obs. of  21 variables:
## $ customerID      : chr  "7590-VHVEG" "5575-GNVDE" "3668-QPYBK" "7795-
CFOCW" ...
## $ gender          : Factor w/ 2 levels "Female","Male": 1 2 2 2 1 1 2 1 1
2 ...
## $ SeniorCitizen   : int   0 0 0 0 0 0 0 0 0 ...
## $ Partner         : Factor w/ 2 levels "No","Yes": 2 1 1 1 1 1 1 1 2 1
...
## $ Dependents      : Factor w/ 2 levels "No","Yes": 1 1 1 1 1 1 2 1 1 2
...
## $ tenure          : int   1 34 2 45 2 8 22 10 28 62 ...
## $ PhoneService    : Factor w/ 2 levels "No","Yes": 1 2 2 1 2 2 2 1 2 2
...
## $ MultipleLines   : Factor w/ 3 levels "No","No phone service",...: 2 1 1
2 1 3 3 2 3 1 ...
## $ InternetService : Factor w/ 3 levels "DSL","Fiber optic",...: 1 1 1 1 2
2 2 1 2 1 ...
## $ OnlineSecurity  : Factor w/ 3 levels "No","No internet service",...: 1 3
3 3 1 1 1 3 1 3 ...
## $ OnlineBackup    : Factor w/ 3 levels "No","No internet service",...: 3 1
3 1 1 1 3 1 1 3 ...
## $ DeviceProtection: Factor w/ 3 levels "No","No internet service",...: 1 3
1 3 1 3 1 1 3 1 ...
## $ TechSupport     : Factor w/ 3 levels "No","No internet service",...: 1 1
1 3 1 1 1 1 3 1 ...
## $ StreamingTV     : Factor w/ 3 levels "No","No internet service",...: 1 1
1 1 1 3 3 1 3 1 ...
## $ StreamingMovies : Factor w/ 3 levels "No","No internet service",...: 1 1
1 1 1 3 1 1 3 1 ...
## $ Contract        : Factor w/ 3 levels "Month-to-month",...: 1 2 1 2 1 1 1
1 1 2 ...
## $ PaperlessBilling: Factor w/ 2 levels "No","Yes": 2 1 2 1 2 2 2 1 2 1
...
## $ PaymentMethod   : Factor w/ 4 levels "Bank transfer (automatic)",...: 3
4 4 1 3 3 2 4 3 1 ...
```



```
## $ MonthlyCharges : num  29.9 57 53.9 42.3 70.7 ...
## $ TotalCharges   : num  29.9 1889.5 108.2 1840.8 151.7 ...
## $ Churn          : Factor w/ 2 levels "No","Yes": 1 1 2 1 2 2 1 1 2 1
...
```

#changing senior citizen into a factor

```
cchurn$SeniorCitizen <- as.factor(cchurn$SeniorCitizen)
summary(cchurn$SeniorCitizen)
```

```
##      0      1
## 5901 1142
```

#The data set has 21 variables. 18 of them are categorical

#dropping customer ID column since it has no influence

```
cchurn <- subset(cchurn, select = -c(customerID))
```

```
names(cchurn)
```

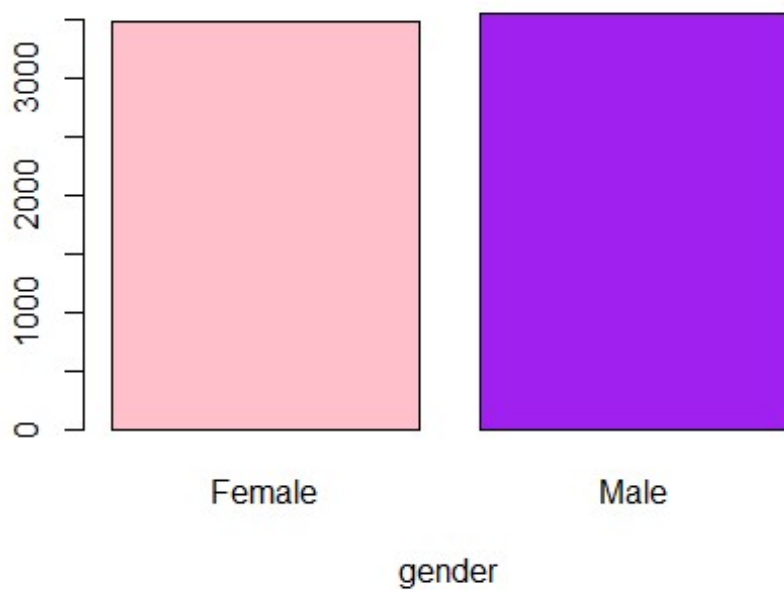
```
## [1] "gender"          "SeniorCitizen"   "Partner"
## [4] "Dependents"      "tenure"          "PhoneService"
## [7] "MultipleLines"   "InternetService" "OnlineSecurity"
## [10] "OnlineBackup"    "DeviceProtection" "TechSupport"
## [13] "StreamingTV"     "StreamingMovies" "Contract"
## [16] "PaperlessBilling" "PaymentMethod"   "MonthlyCharges"
## [19] "TotalCharges"    "Churn"
```

```
descriptive <- c("gender", "SeniorCitizen", "Partner", "Dependents",
,"PhoneService", "MultipleLines", "InternetService", "OnlineSecurity",
"DeviceProtection", "TechSupport", "StreamingTV", "StreamingMovies",
"Contract", "PaperlessBilling", "PaymentMethod")
```

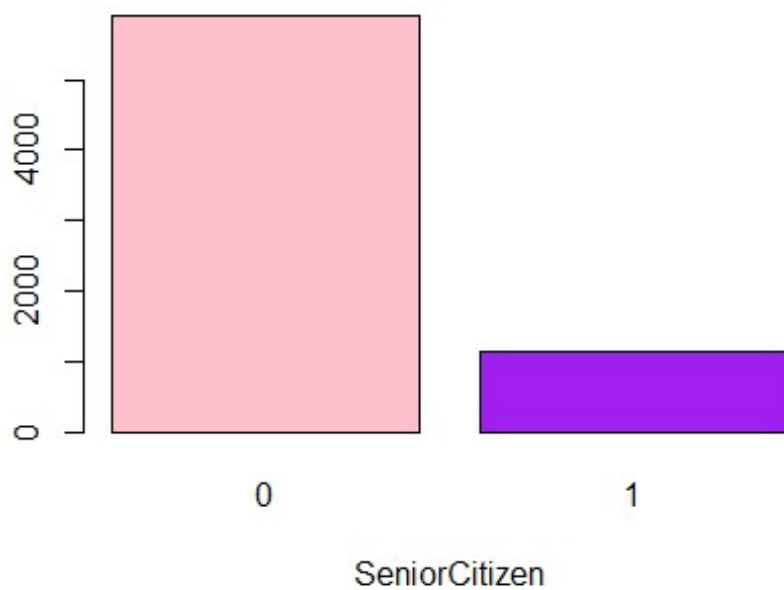
#This step is univariate analysis

#Let's see who are our customer

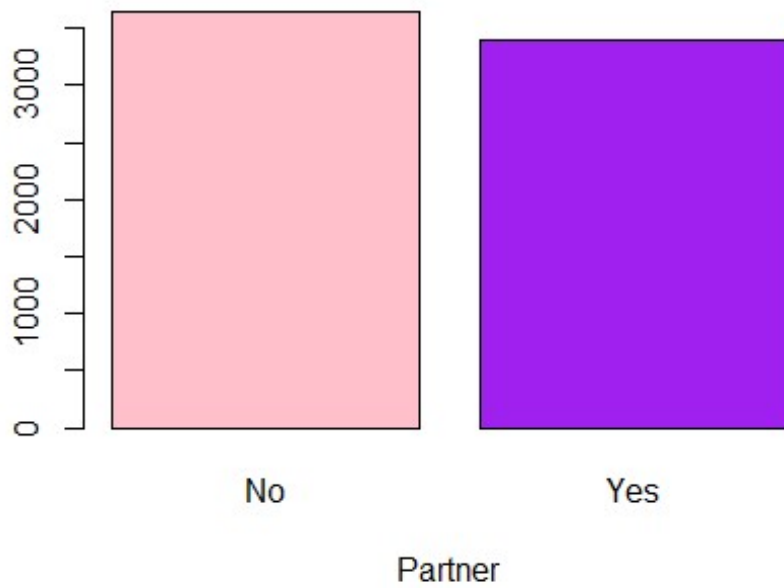
```
for (i in descriptive)
{
  print(barplot(table(cchurn[, i]), xlab = colnames(cchurn[i]), col =
c("pink", "purple", "cyan", "gold")))
}
```



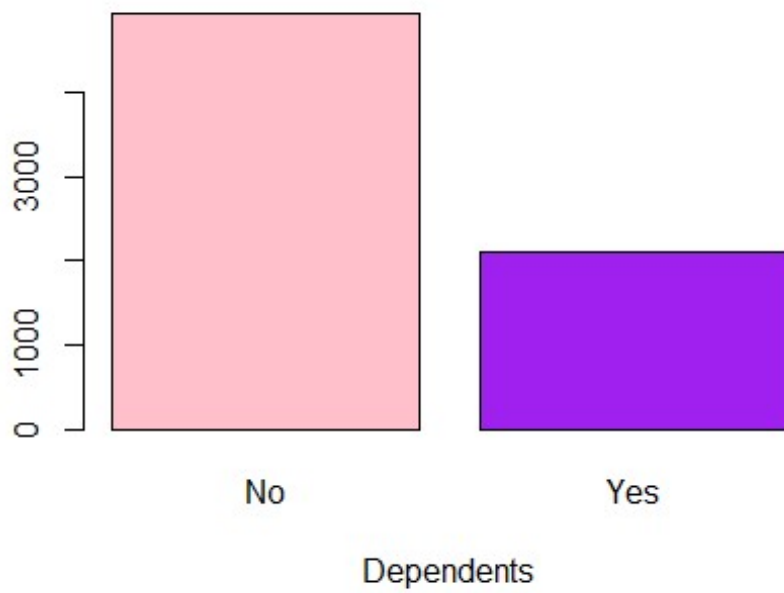
```
##      [,1]  
## [1,]  0.7  
## [2,]  1.9
```



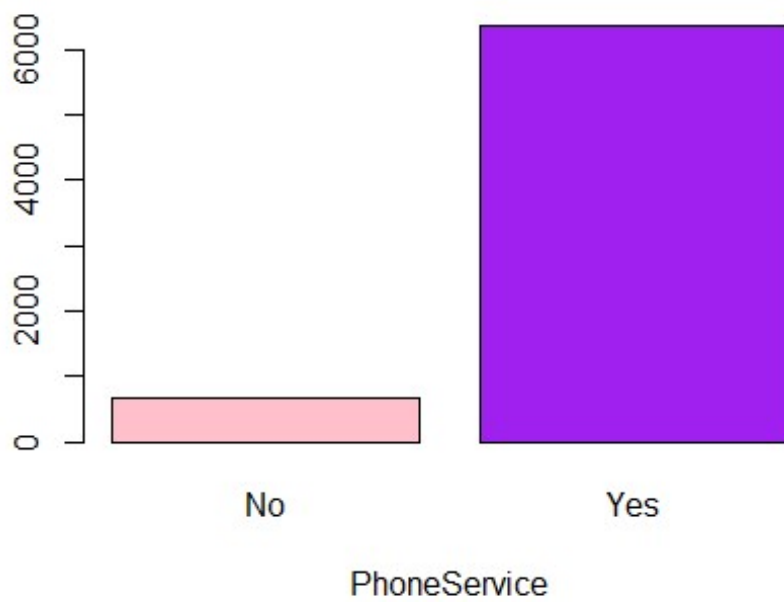
```
##      [,1]  
## [1,]  0.7  
## [2,]  1.9
```



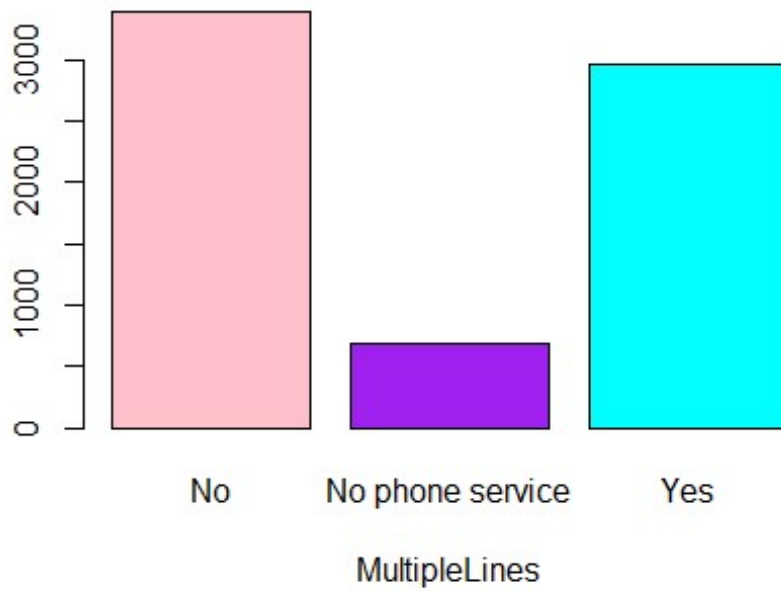
```
##      [,1]  
## [1,]  0.7  
## [2,]  1.9
```



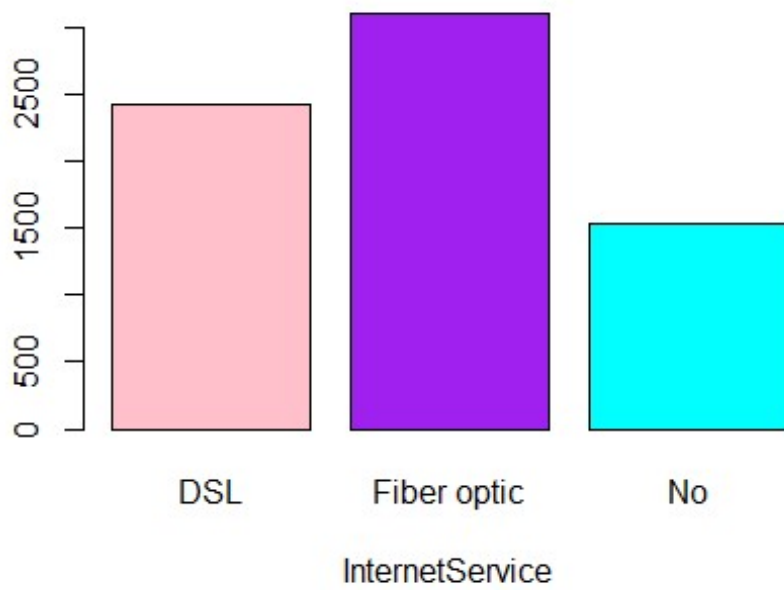
```
##      [,1]  
## [1,]  0.7  
## [2,]  1.9
```



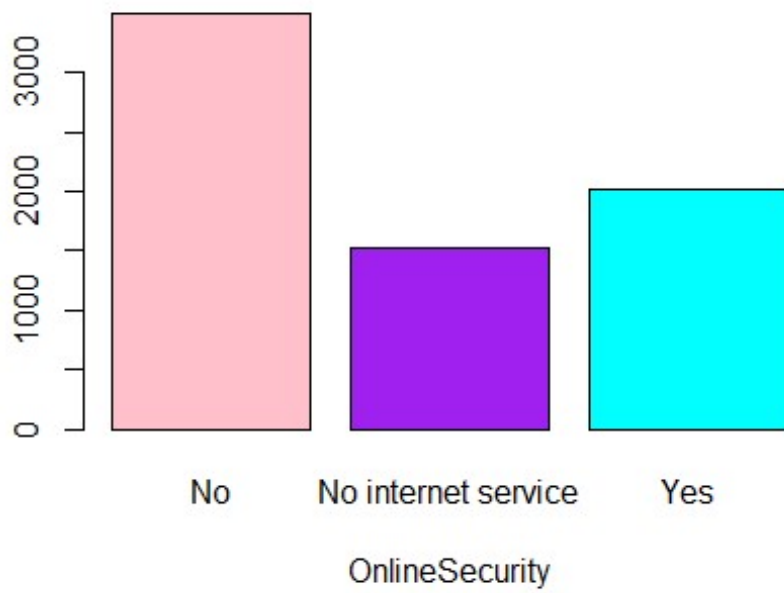
```
##      [,1]  
## [1,] 0.7  
## [2,] 1.9
```



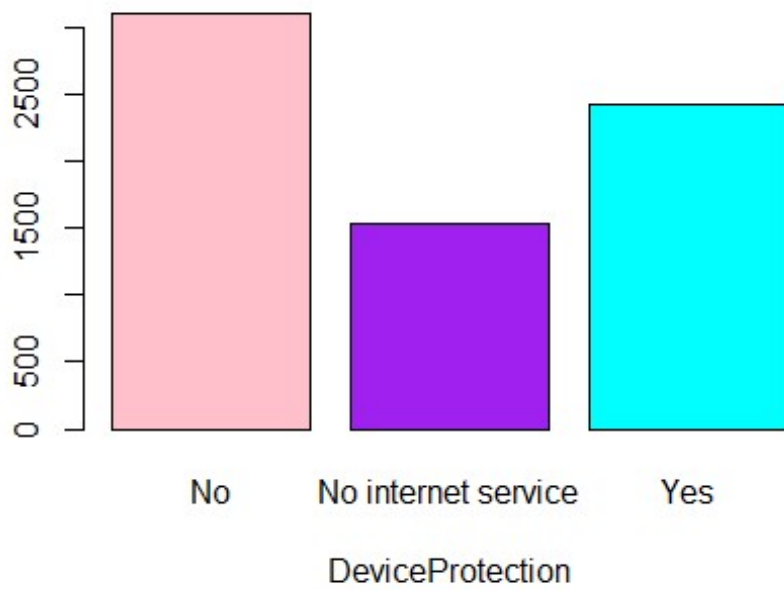
```
##      [,1]  
## [1,] 0.7  
## [2,] 1.9  
## [3,] 3.1
```



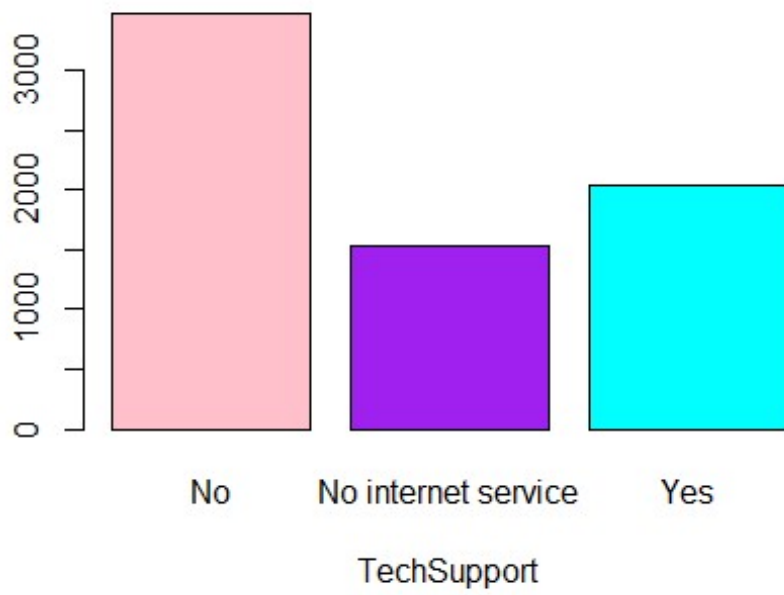
```
##      [,1]  
## [1,] 0.7  
## [2,] 1.9  
## [3,] 3.1
```



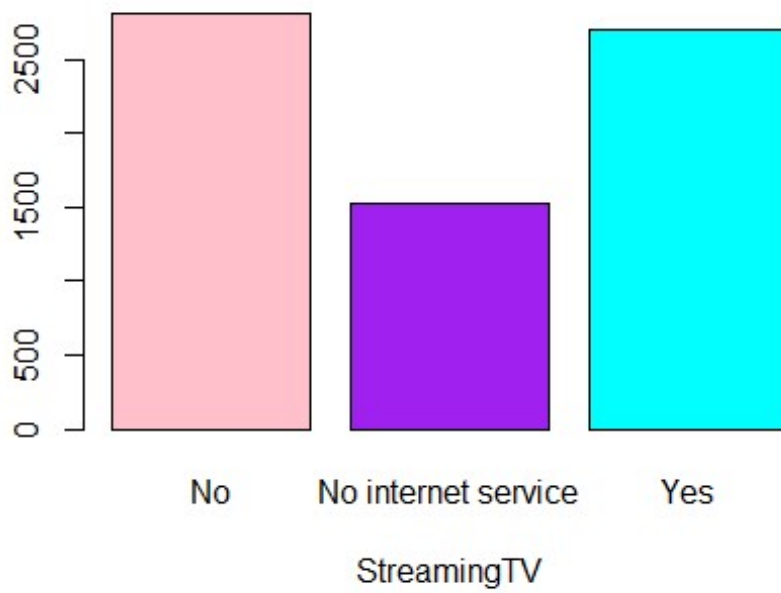
```
##      [,1]  
## [1,]  0.7  
## [2,]  1.9  
## [3,]  3.1
```



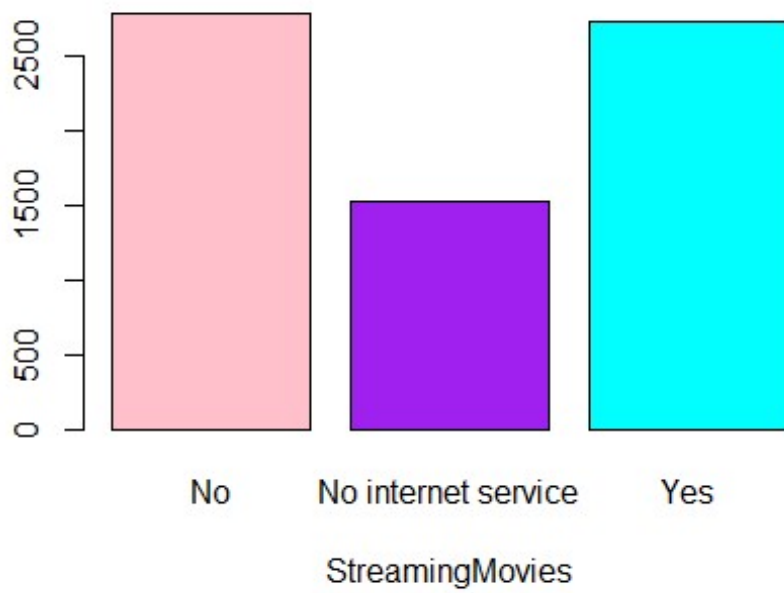
```
##      [,1]  
## [1,] 0.7  
## [2,] 1.9  
## [3,] 3.1
```

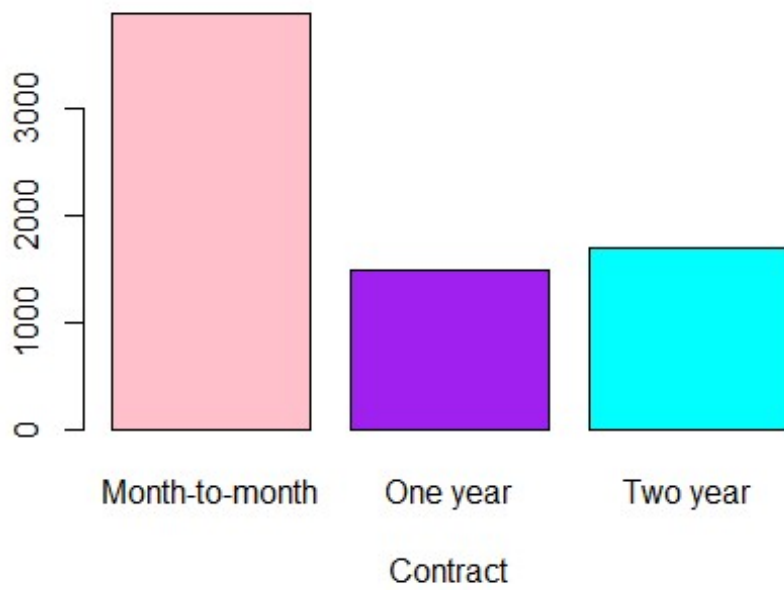
```
##      [,1]  
## [1,]  0.7  
## [2,]  1.9  
## [3,]  3.1
```



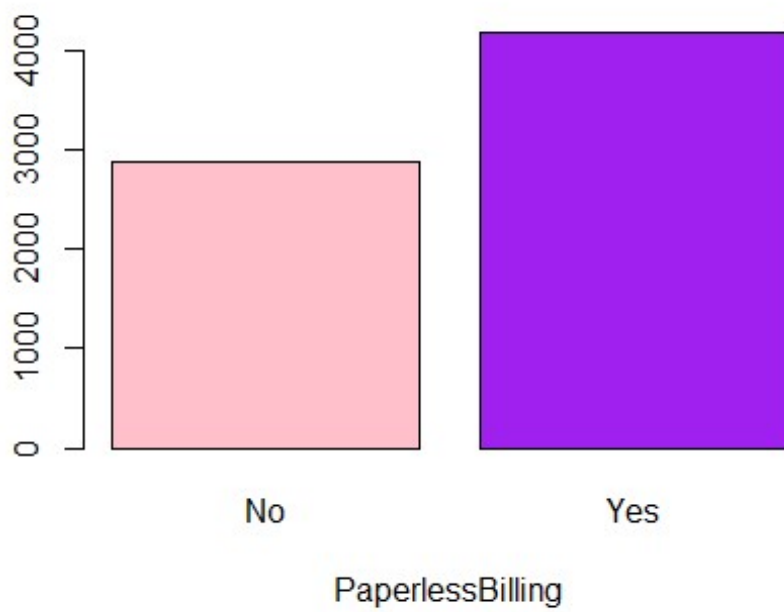
```
##      [,1]  
## [1,] 0.7  
## [2,] 1.9  
## [3,] 3.1
```



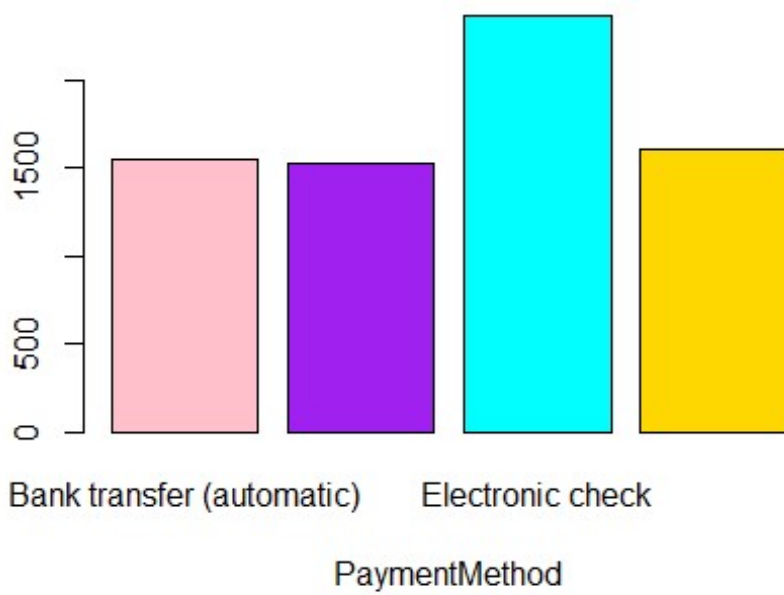
```
##      [,1]  
## [1,] 0.7  
## [2,] 1.9  
## [3,] 3.1
```



```
##      [,1]  
## [1,] 0.7  
## [2,] 1.9  
## [3,] 3.1
```



```
##      [,1]  
## [1,]  0.7  
## [2,]  1.9
```



```
##      [,1]
## [1,]  0.7
## [2,]  1.9
## [3,]  3.1
## [4,]  4.3
```

#Bivariate Analysis

#the relationship between each attribute and the churn

#The count of gender and frequency and the relationship with customer churn or not

```
cchurn %>%
```

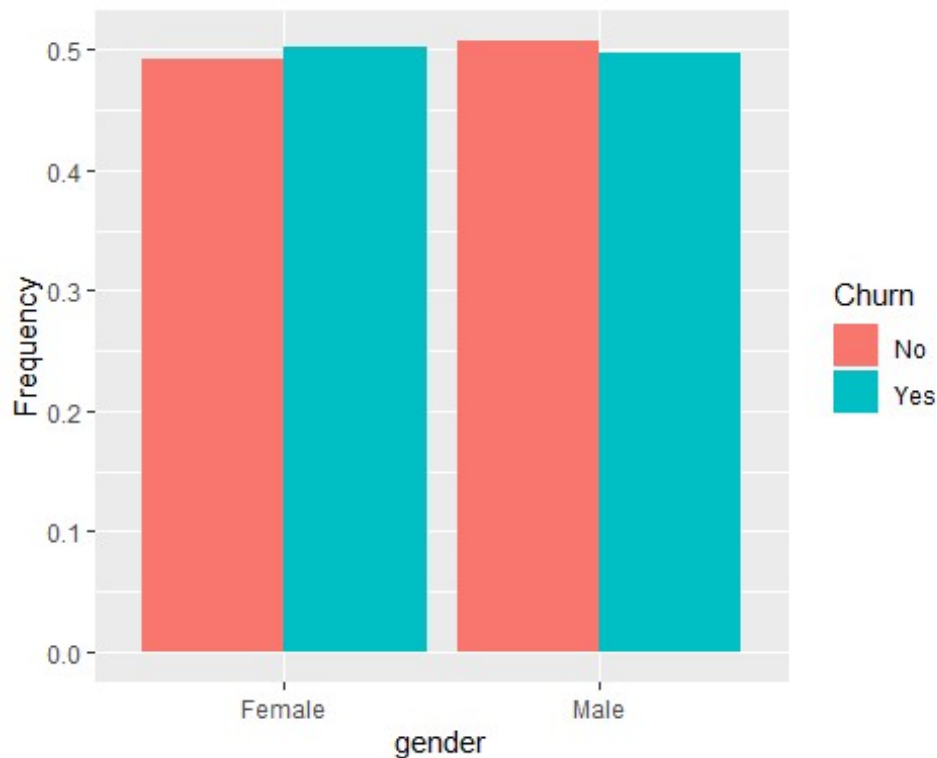
```
  group_by(Churn, gender) %>%
```

```
  summarize(count = n()) %>%
```

```
  mutate(Frequency = count / sum(count)) %>%
```

```
  ggplot(., aes(x = gender, y = Frequency, fill = Churn)) +
```

```
  geom_col(position = "dodge")
```



#the relationship between each attribute and the churn

#The count of SeniorCitizen and frequency and the relationship with customer churn or not

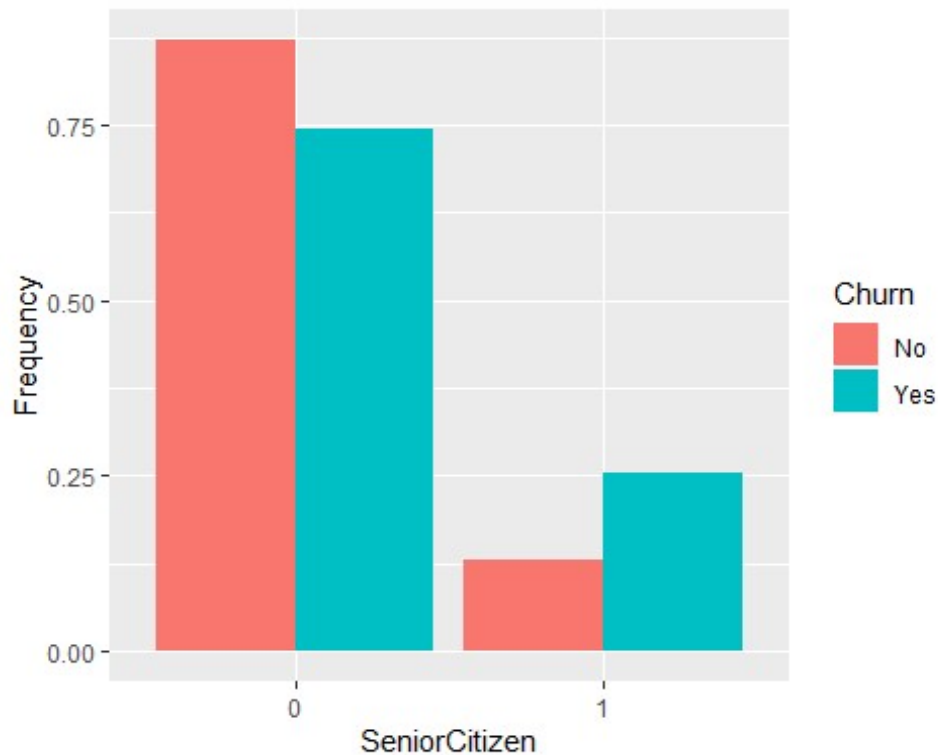
```
cchurn %>%
```

```
  group_by(Churn, SeniorCitizen) %>%
```

```
  summarize(count = n()) %>%
```

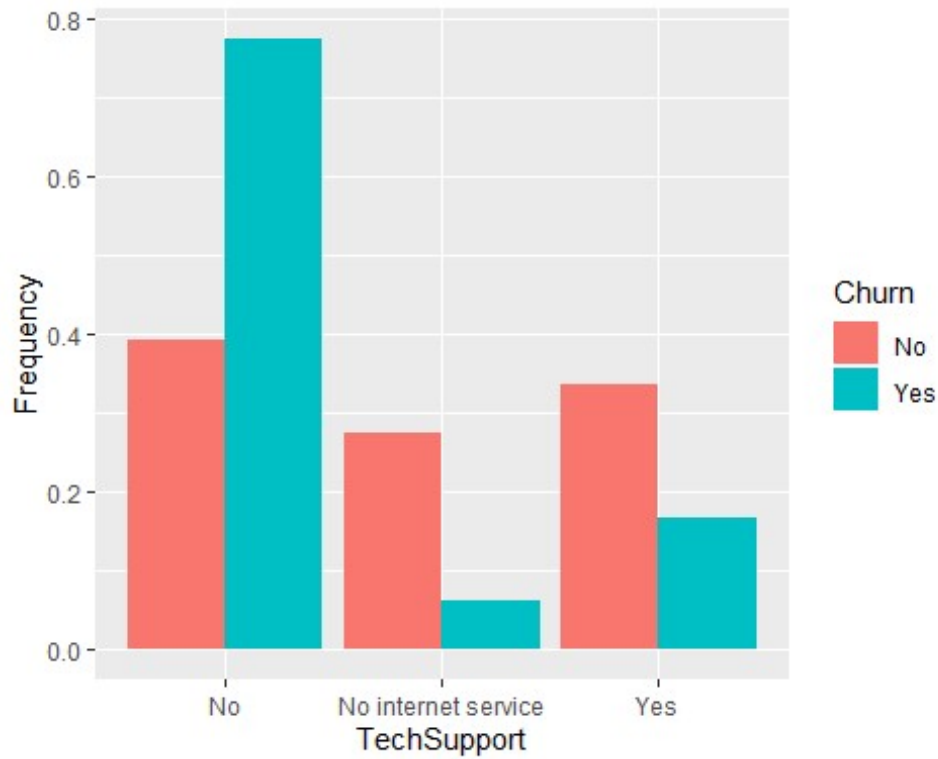
```
  mutate(Frequency = count / sum(count)) %>%
```

```
ggplot(., aes(x = SeniorCitizen, y = Frequency, fill = Churn)) +  
geom_col( position = "dodge" )
```



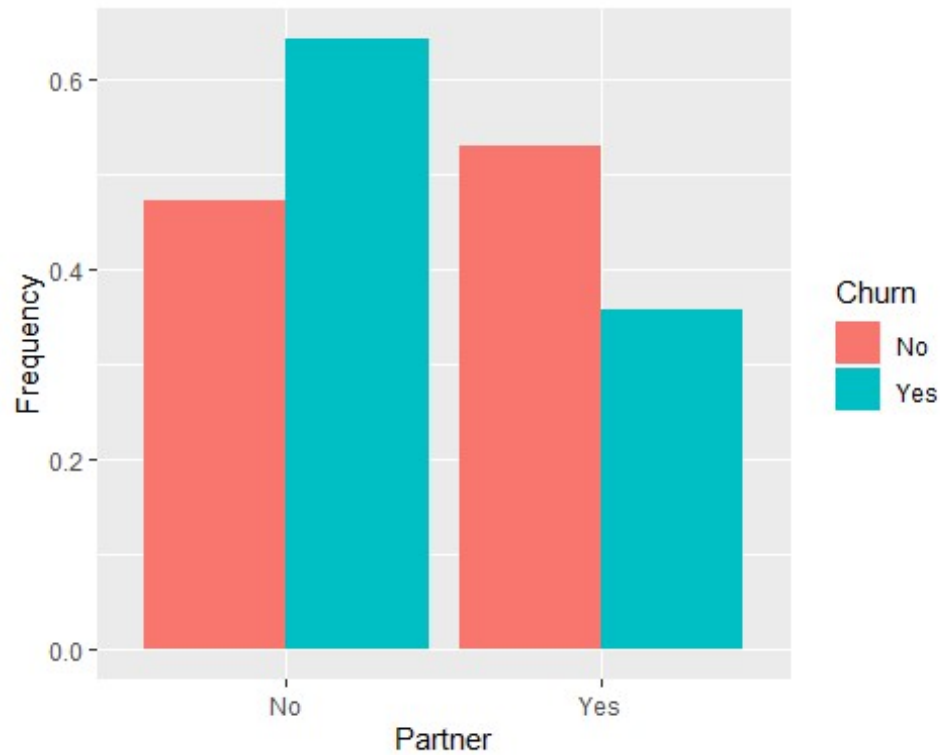
#the relationship between each attribute and the churn
#The count of techsupport and frequency and the relationship with customer churn or not

```
cchurn %>%  
  group_by(Churn, TechSupport) %>%  
  summarize(count = n()) %>%  
  mutate(Frequency = count / sum(count)) %>%  
  ggplot(., aes(x = TechSupport, y = Frequency, fill = Churn)) +  
  geom_col(position = "dodge")
```

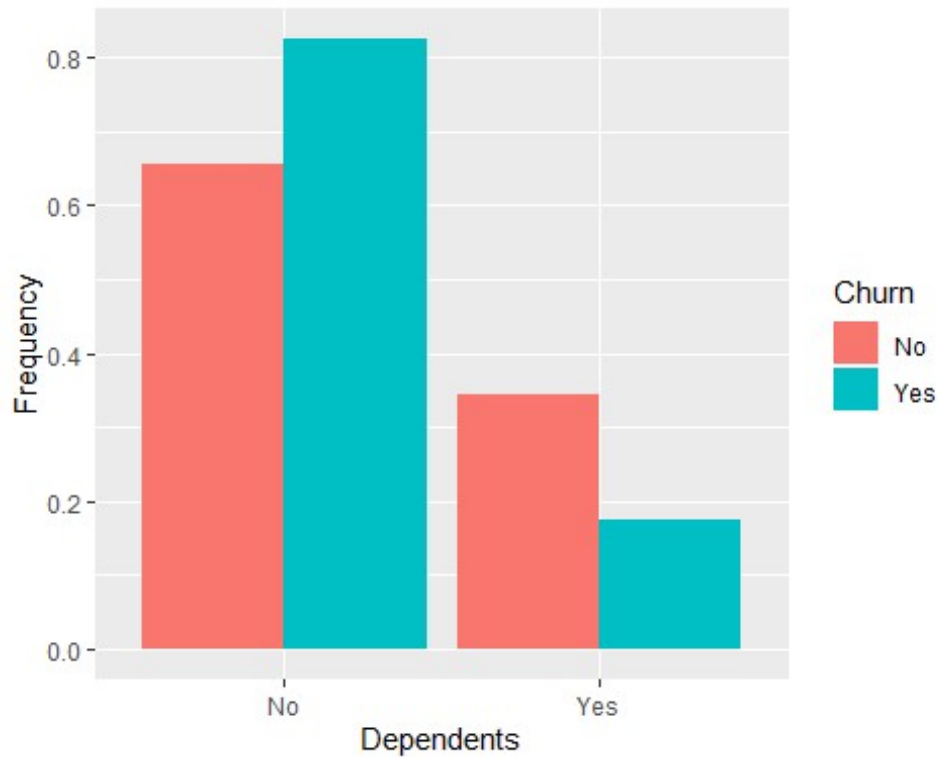


#the relationship between each attribute and the churn
#The count of techsupport and frequency and the relationship with customer churn or not

```
cchurn %>%  
  group_by(Churn, Partner) %>%  
  summarize(count = n()) %>%  
  mutate(Frequency = count / sum(count)) %>%  
  ggplot(., aes(x = Partner, y = Frequency, fill = Churn)) +  
  geom_col(position = "dodge")
```

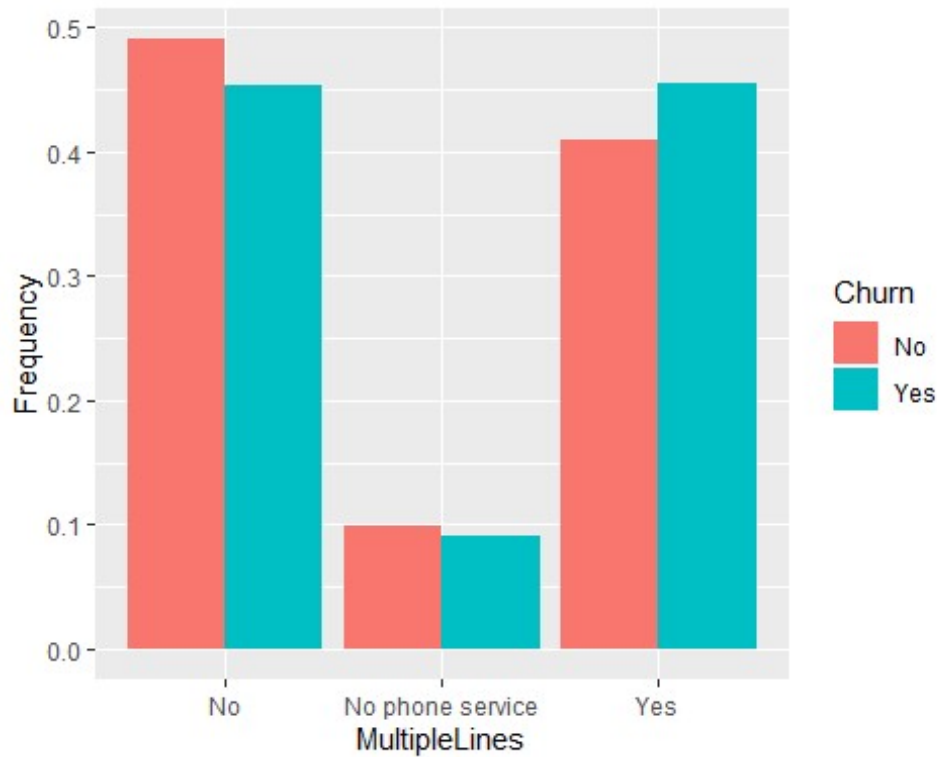



```
#the relationship between each attribute and the churn  
#The count of techsupport and frequency and the relationship with customer  
churn or not  
cchurn %>%  
  group_by(Churn, Dependents) %>%  
  summarize(count = n()) %>%  
  mutate(Frequency = count / sum(count)) %>%  
  ggplot(., aes(x = Dependents, y = Frequency, fill = Churn)) +  
  geom_col(position = "dodge")
```



#the relationship between each attribute and the churn
#The count of techsupport and frequency and the relationship with customer churn or not

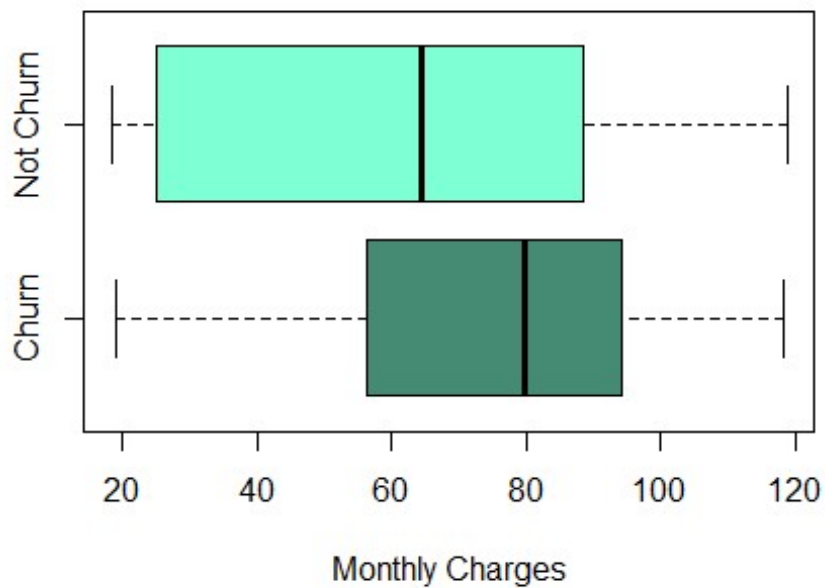
```
cchurn %>%  
  group_by(Churn, MultipleLines) %>%  
  summarize(count = n()) %>%  
  mutate(Frequency = count / sum(count)) %>%  
  ggplot(., aes(x = MultipleLines, y = Frequency, fill = Churn)) +  
  geom_col(position = "dodge")
```



```
#Let's subset the customer churn and see if they have anything in common
churn_sub <- cchurn[which(cchurn$Churn == 'Yes'), ]
#subsetting the dataset
nochurn_sub <- cchurn[which(cchurn$Churn == 'No'), ]

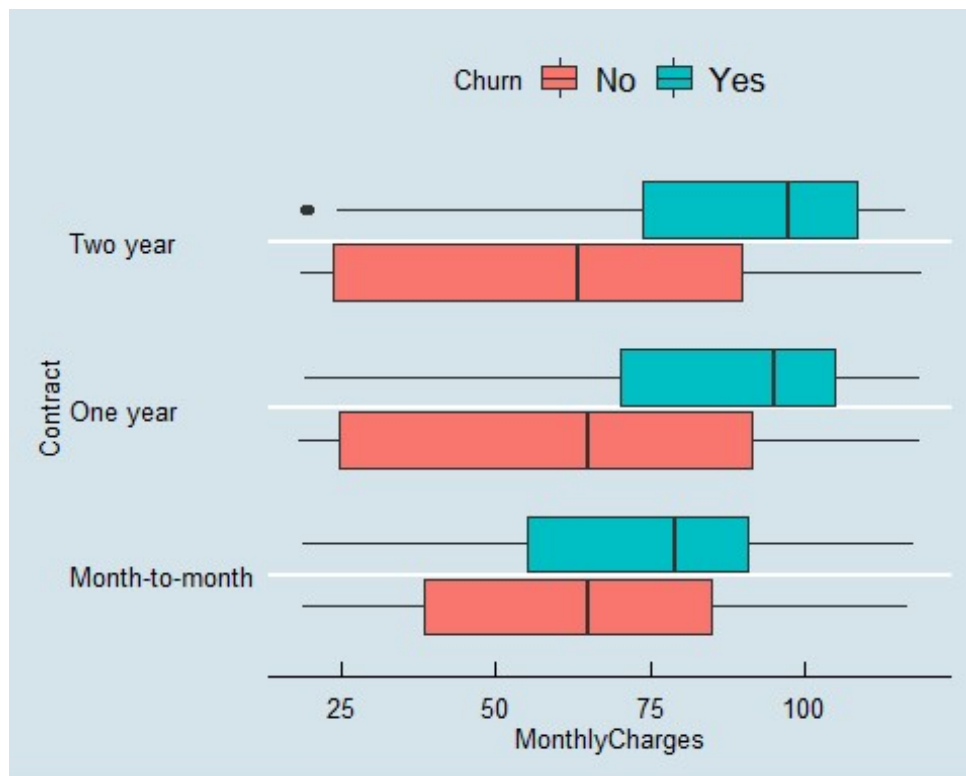
#Higher monthly charges might be one of the reasons of customer churn

boxplot(churn_sub$MonthlyCharges, nochurn_sub$MonthlyCharges, names =
c("Churn", "Not Churn"), col = c("aquamarine4", "aquamarine1"), horizontal =
TRUE, xlab = "Monthly Charges")
```



#Notice that the churn monthly charge is always higher in all kind of contracts too

```
ggplot(cchurn, aes(x = Contract, y = MonthlyCharges, fill = Churn)) +  
  geom_boxplot( ) +  
  coord_flip() +  
  theme_economist()
```



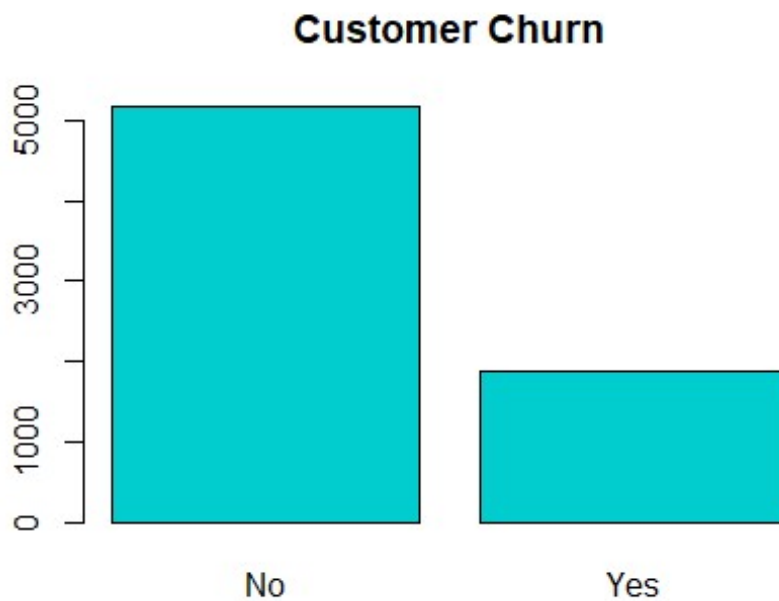
#We can conclude that the higher the monthly charge the more likely for the customer to churn

#Percentage of customer churn

```
churn_count <- table(cchurn$Churn)
```

```
churn_percent <- table(cchurn$Churn) / length(cchurn$Churn)
```

```
barplot(churn_count, main = "Customer Churn", col = "cyan3")
```



#notice the the data is imbalance

We notice that the data imbalanced.

imbalanced data refers to classification problems where we have unequal instances for different classes. Most machine learning classification algorithms are sensitive to unbalance in the predictor classes.

Under-sampling, we randomly select a subset of samples from the class with more instances to match the number of samples coming from each class. oversampling, we randomly duplicate samples from the class with fewer instances or we generate additional instances based on the data that we have, so as to match the number of samples in each class.

#checking the severity of imbalanced data

```
table(cchurn$Churn)
```

```
##
```

```
##   No   Yes
```

```
## 5174 1869
```

#Dividing our dataset into training and test set then deal with the imbalanced data

```
set.seed(100)
```

```
index <- sample(2, nrow(cchurn), replace = TRUE, prob = c(0.7, 0.3)) #in this case 70% of the data will go for training
```

```

train_data <- cchurn[index==1, ] #subsetting the training data 70%
test_data  <- cchurn[index==2, ] #subsetting the test data 30%

#imbalanced data: means the predicting target class distribution is skewed.
balancing the data will avoid over or under sampling
#balancing the data
nrow(train_data)

## [1] 4952

balanced <- ovun.sample(Churn~., data = train_data, method = "both", p =
0.5)$data

# Developing predictive model
# Predictive model: Random Forest
rf_model <- randomForest(Churn~., data = balanced)

#evaluating the model
confusionMatrix(predict(rf_model, test_data), test_data$Churn, positive =
"Yes")

## Confusion Matrix and Statistics
##
##              Reference
## Prediction   No  Yes
##           No 1234 164
##           Yes  316 377
##
##              Accuracy : 0.7704
##              95% CI : (0.7518, 0.7883)
##      No Information Rate : 0.7413
##      P-Value [Acc > NIR] : 0.001122
##
##              Kappa : 0.4517
##
##  Mcnemar's Test P-Value : 5.495e-12
##
##              Sensitivity : 0.6969
##              Specificity : 0.7961
##              Pos Pred Value : 0.5440
##              Neg Pred Value : 0.8827
##              Prevalence : 0.2587
##              Detection Rate : 0.1803
##      Detection Prevalence : 0.3314
##              Balanced Accuracy : 0.7465
##
##              'Positive' Class : Yes
##
#Model accuracy 0.77

```

```

#Developing predictive model
#Predictive model: Naive Bayes
nb_model <- naive_bayes(Churn~., data = balanced)

#evaluating the model
confusionMatrix(predict(nb_model,test_data), test_data$Churn, positive =
"Yes")

## Warning: predict.naive_bayes(): More features in the newdata are provided
## as there are probability tables in the object. Calculation is performed
## based on features to be found in the tables.

## Confusion Matrix and Statistics
##
##           Reference
## Prediction  No  Yes
##           No 1048  99
##           Yes  502 442
##
##           Accuracy : 0.7126
##           95% CI : (0.6927, 0.7319)
##           No Information Rate : 0.7413
##           P-Value [Acc > NIR] : 0.9986
##
##           Kappa : 0.3969
##
##           Mcnemar's Test P-Value : <2e-16
##
##           Sensitivity : 0.8170
##           Specificity : 0.6761
##           Pos Pred Value : 0.4682
##           Neg Pred Value : 0.9137
##           Prevalence : 0.2587
##           Detection Rate : 0.2114
##           Detection Prevalence : 0.4515
##           Balanced Accuracy : 0.7466
##
##           'Positive' Class : Yes
##
#model accuracy 0.7

```