test1result.R

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```
setwd("~/Research/test1/refineassignment")
refinesheet<-read.csv("C:/Users/IBM_ADMIN/Desktop/refine.xlsx - Sheet1.csv")
library(dplyr)
## Warning: package 'dplyr' was built under R version 3.2.5
## Attaching package: 'dplyr'
## The following objects are masked from 'package:stats':
##
##
      filter, lag
## The following objects are masked from 'package:base':
##
##
       intersect, setdiff, setequal, union
library(tidyr)
## Warning: package 'tidyr' was built under R version 3.2.5
separate(refinesheet,Product.code...number,c("Productcode","Number"))
```

##		company Prod	uctcode	Number	addr	222	city
##	1	Philips	oposisus q		Groningensingel		_
##	2	Philips	р		Groningensingel		
##	3	Philips	X		Groningensingel		
##	4	Philips	×		Groningensingel		
##	5	Philips	X		Groningensingel		
##	6	Philips	р		Groningensingel		
##	7	akzo	V	43	Leeuwardenweg		
##	8	akzo	V	12	Leeuwardenweg		
##	9	akzo	Х	5	Leeuwardenweg		
##	10	akzo	р	34	-		
##	11	akzo	q	5	Leeuwardenweg		
##	12	akzo	q	9	Leeuwardenweg		
##	13	akzo	X	8	Leeuwardenweg		
##	14	Philips	р	56	Delfzijlstraat		
##	15	Philips	V	67	Delfzijlstraat		
##	16	Philips	V	21	Delfzijlstraat		
##		Van Houten	X	45	Delfzijlstraat		
##	18	Van Houten	V	56	Delfzijlstraat		
##		Van Houten	V	65	Delfzijlstraat		
##		Van Houten	X	21	Delfzijlstraat		
##		Van Houten	р	23	Delfzijlstraat		
##	2.2	unilver	X	3	Jourestraat		
##	2.3	unilever	q	4	Jourestraat		-
##	2.4	unilever	q	6	Jourestraat	2.5	arnhem
##	2.5	unilever	q	8	Jourestraat		
##		country	1	na	ame		
##	1	the netherlands	dhr				
##	2	the netherlands		p. hans			
##	3	the netherlands		j. Gans			
##	4	the netherlands		p. mans			
##	5	the netherlands	dhr p	. frans	sen		
##	6	the netherlands		franss			
##	7	the netherlands	dhr	p. bans	sen		
##	8	the netherlands	dhr	p. vans	sen		
##	9	the netherlands	dhr p	. brans	sen		
##	10	the netherlands	dhr p	. janss	sen		
##	11	the netherlands	mevr 1	. rok	ken		
##	12	the netherlands	mevr 1	. lok	ken		
##	13	the netherlands	mevr 1	. mok}	ken		
##	14	the netherlands	mevr 1	. mok}	ken		
##	15	the netherlands	mevr 1	. mok}	ken		
##	16	the netherlands	mevr 1	. mok}	ken		
##	17	the netherlands	mevr 1	. sok	ken		
##	18	the netherlands	mevr 1	. wok	ken		
##	19	the netherlands	mevr l	. kokł	ken		
##	20	the netherlands	mevr 1	. Bok	ken		
##	21	the netherlands	mevr 1	. dokł	ken		
##	22	the netherlands	mevr 1	. gokł	ken		
		the netherlands		_			

str(refinesheet2)

```
## 24 the netherlands mevr 1. rokken
## 25 the netherlands mevr 1. rokken

refinesheet2<-refinesheet%>% separate(Product.code...number,c("Productcode","Number"))
```

```
## 'data.frame': 25 obs. of 7 variables:
## $ company : Factor w/ 5 levels "akzo", "Philips",..: 2 2 2 2 2 2 1 1 1 1 ...
## $ Productcode: chr "p" "p" "x" "x" ...
## $ Number : chr "5" "43" "3" "34" ...
## $ address : Factor w/ 25 levels "Delfzijlstraat 54",..: 9 10 11 12 13 14 19 20
21 22 ...
## $ city : Factor w/ 1 level "arnhem": 1 1 1 1 1 1 1 1 1 1 1 1 1 ...
## $ country : Factor w/ 1 level "the netherlands": 1 1 1 1 1 1 1 1 1 1 1 ...
## $ name : Factor w/ 20 levels "dhr j. Gansen",..: 7 6 1 9 4 5 2 10 3 8 ...
```

```
print(refinesheet2)
```

##		company Prod	uctcode		addr		city	
##	1	Philips	р	5	Groningensingel	147	arnhem	
##	2	Philips	р	43	Groningensingel	148	arnhem	
##	3	Philips	X	3	Groningensingel	149	arnhem	
##	4	Philips	X	34	Groningensingel	150	arnhem	
##	5	Philips	X	12	Groningensingel	151	arnhem	
##	6	Philips	р	23	Groningensingel	152	arnhem	
##	7	akzo	V	43	Leeuwardenweg	178	arnhem	
##	8	akzo	V	12	Leeuwardenweg	179	arnhem	
##	9	akzo	X	5	Leeuwardenweg	180	arnhem	
##	10	akzo	р	34	Leeuwardenweg	181	arnhem	
##	11	akzo	q	5	Leeuwardenweg	182	arnhem	
##	12	akzo	q	9	Leeuwardenweg	183	arnhem	
##	13	akzo	X	8	Leeuwardenweg	184	arnhem	
##	14	Philips	р	56	Delfzijlstraat	54	arnhem	
##	15	Philips	V	67	Delfzijlstraat	55	arnhem	
##	16	Philips	V	21	Delfzijlstraat	56	arnhem	
##	17	Van Houten	X	45	Delfzijlstraat	57	arnhem	
##	18	Van Houten	V	56	Delfzijlstraat	58	arnhem	
##	19	Van Houten	V	65	Delfzijlstraat	59	arnhem	
##	20	Van Houten	X	21	Delfzijlstraat	60	arnhem	
##	21	Van Houten	р	23	Delfzijlstraat	61	arnhem	
##	22	unilver	X	3	Jourestraat	23	arnhem	
##	23	unilever	q	4	Jourestraat	24	arnhem	
##	24	unilever	q	6	Jourestraat	25	arnhem	
##	25	unilever	q	8	Jourestraat	26	arnhem	
##		country		na	ame			
##	1	the netherlands	dhr	p. jans	sen			
##	2	the netherlands		p. hans				
##	3	the netherlands	dhr	j. Gans	sen			
##	4	the netherlands		p. mans				
##	5	the netherlands	dhr p	o. frans	sen			
	6	the netherlands	-	franss				
##		the netherlands	dhr	p. bans	sen			
##		the netherlands		p. vans				
##		the netherlands		o. brans				
##		the netherlands		o. janss				
##		the netherlands	_	. rok				
		the netherlands	mevr l					
##		the netherlands	mevr l					
##		the netherlands	mevr l					
		the netherlands	mevr l					
		the netherlands	mevr l					
##		the netherlands	mevr l					
##		the netherlands	mevr l					
##		the netherlands	mevr l					
##		the netherlands	mevr l					
##		the netherlands	mevr l					
		the netherlands	mevr l	_				
##	23	the netherlands	mevr 1.	stok	ken			

##		productcat Product	ductcode	company	Number	address	city
##	1	Smartphone	р	Philips	5	Groningensingel 147	arnhen
##	2	Smartphone	р	Philips	43	Groningensingel 148	arnher
##	3	Smartphone	р	Philips	23	Groningensingel 152	arnher
##	4	Smartphone	р	akzo	34	Leeuwardenweg 181	arnhen
##	5	Smartphone	р	Philips	56	Delfzijlstraat 54	arnhen
##	6	Smartphone	р	Van Houten	23	Delfzijlstraat 61	arnhen
##	7	TV	V	akzo	43	Leeuwardenweg 178	arnher
##	8	TV	V	akzo	12	Leeuwardenweg 179	arnher
##	9	TV	V	Philips	67	Delfzijlstraat 55	arnher
##	10	TV	V	Philips	21	Delfzijlstraat 56	arnhen
##	11	TV	V	Van Houten	56	Delfzijlstraat 58	arnhen
##	12	TV	V	Van Houten	65	Delfzijlstraat 59	arnhen
##	13	Laptop	X	Philips	3	Groningensingel 149	arnher
##	14	Laptop	X	Philips	34	Groningensingel 150	arnhen
##	15	Laptop	X	Philips	12	Groningensingel 151	arnhen
##	16	Laptop	X	akzo	5	Leeuwardenweg 180	arnher
##	17	Laptop	X	akzo	8	Leeuwardenweg 184	
##	18	Laptop	X	Van Houten	45	Delfzijlstraat 57	
##	19	Laptop	Х	Van Houten	21	Delfzijlstraat 60	
##	20	Laptop	Х	unilver	3	Jourestraat 23	
##	21	Tablet	q	akzo	5	Leeuwardenweg 182	arnher
##	22	Tablet	q	akzo	9	Leeuwardenweg 183	
##	23	Tablet	q	unilever	4	Jourestraat 24	
##	24	Tablet	d	unilever	6	Jourestraat 25	arnher
##	25	Tablet	d	unilever	8	Jourestraat 26	arnher
##		countr	-	name			
##	1	the netherland		p. jansen			
##	2	the netherland		p. hansen			
##	3	the netherland		. franssen			
##	4	the netherland	=	o. janssen			
	5	the netherland	-	_			
##	6	the netherland					
##	7	the netherland		p. bansen			
##	8	the netherland		p. vansen			
##	9	the netherland		_			
##		the netherland					
##		the netherland					
##		the netherland					
##		the netherland		j. Gansen			
##		the netherland		p. mansen			
ππ ##		the netherland		o. fransen			
##		the netherland	-	o. bransen			
##		the netherland	_				
##		the netherland					
##		the netherland					
		the netherland					
##				2			
## ##		the netherland					
	1.1.	the netherland	s mevr 1	L. LOKKEN			

```
## 24 the netherlands mevr 1. rokken
## 25 the netherlands mevr 1. rokken

refinesheet3<-left_join(f,refinesheet2,by="Productcode")

## Warning in left_join_impl(x, y, by$x, by$y): joining character vector and
## factor, coercing into character vector</pre>

print(refinesheet3)
```

##		productcat Pro	ductcode	company	Number	address	city
##	1	Smartphone	р	Philips	5	Groningensingel 147	arnhem
##	2	Smartphone	р	Philips	43	Groningensingel 148	arnhem
##	3	Smartphone	р	Philips	23	Groningensingel 152	arnhem
##	4	Smartphone	р	akzo	34	Leeuwardenweg 181	arnhem
##	5	Smartphone	р	Philips	56	Delfzijlstraat 54	arnhem
##	6	Smartphone	р	Van Houten	23	Delfzijlstraat 61	arnhem
##	7	TV	V	akzo	43	Leeuwardenweg 178	arnhem
##	8	TV	V	akzo	12	Leeuwardenweg 179	arnhem
##	9	TV	V	Philips	67	Delfzijlstraat 55	arnhem
##	10	TV	V	Philips	21	Delfzijlstraat 56	arnhem
##	11	TV	V	Van Houten	56	Delfzijlstraat 58	arnhem
##	12	TV	V	Van Houten	65	Delfzijlstraat 59	arnhem
##	13	Laptop	Х	Philips	3	Groningensingel 149	arnhem
##	14	Laptop	X	Philips	34	Groningensingel 150	arnhem
##	15	Laptop	Х	Philips	12	Groningensingel 151	arnhem
##	16	Laptop	Х	akzo	5	Leeuwardenweg 180	arnhem
##	17	Laptop	Х	akzo	8	Leeuwardenweg 184	arnhem
##	18	Laptop	X	Van Houten	45	Delfzijlstraat 57	arnhem
##	19	Laptop	X	Van Houten	21	Delfzijlstraat 60	arnhem
##	20	Laptop	X	unilver	3	Jourestraat 23	arnhem
##	21	Tablet	q	akzo	5	Leeuwardenweg 182	arnhem
##	22	Tablet	q	akzo	9	Leeuwardenweg 183	arnhem
##	23	Tablet	q	unilever	4	Jourestraat 24	arnhem
##	24	Tablet	q	unilever	6	Jourestraat 25	arnhem
##	25	Tablet	q	unilever	8	Jourestraat 26	arnhem
##		countr	У	name			
##	1	the netherland	s dhr	p. jansen			
##	2	the netherland	s dhr	p. hansen			
##	3	the netherland	s dhr p	. franssen			
##	4	the netherland	s dhr j	o. janssen			
##	5	the netherland	s mevr	l. mokken			
##	6	the netherland	s mevr	l. dokken			
##	7	the netherland	s dhr	p. bansen			
##	8	the netherland	s dhr	p. vansen			
##	9	the netherland	s mevr	l. mokken			
##	10	the netherland	s mevr	l. mokken			
##	11	the netherland	s mevr	l. wokken			
##	12	the netherland	s mevr	l. kokken			
##	13	the netherland	s dhr	j. Gansen			
##	14	the netherland	s dhr	p. mansen			
##	15	the netherland	s dhr j	o. fransen			
##	16	the netherland	s dhr j	o. bransen			
##	17	the netherland	s mevr	l. mokken			
##	18	the netherland	s mevr	l. sokken			
##	19	the netherland	s mevr	l. Bokken			
##	20	the netherland	s mevr	l. gokken			
##	21	the netherland	s mevr	l. rokken			
##	22	the netherland					
##		the netherland		. stokken			

```
## 24 the netherlands mevr 1. rokken
## 25 the netherlands mevr 1. rokken
```

```
str(refinesheet3)
```

```
## 'data.frame': 25 obs. of 8 variables:
## $ productcat : Factor w/ 4 levels "Laptop", "Smartphone", ...: 2 2 2 2 2 2 4 4 4 4 4 .
...
## $ Productcode: chr "p" "p" "p" "p" ...
## $ company : Factor w/ 5 levels "akzo", "Philips", ...: 2 2 2 1 2 5 1 1 2 2 ...
## $ Number : chr "5" "43" "23" "34" ...
## $ address : Factor w/ 25 levels "Delfzijlstraat 54", ...: 9 10 14 22 1 8 19 20 2
3 ...
## $ city : Factor w/ 1 level "arnhem": 1 1 1 1 1 1 1 1 1 1 1 1 1 ...
## $ country : Factor w/ 1 level "the netherlands": 1 1 1 1 1 1 1 1 1 1 ...
## $ name : Factor w/ 20 levels "dhr j. Gansen", ...: 7 6 5 8 16 12 2 10 16 16 ...
```

```
unite(refinesheet3, "full_address", address, city, country, sep="-")
```

##		productcat Produ	ıctcode	company	Number	
##	1	Smartphone	р	Philips	5	
##	2	Smartphone	р	Philips	43	
##	3	Smartphone	р	Philips	23	
##	4	Smartphone	р	akzo	34	
##	5	Smartphone	р	Philips	56	
##	6	Smartphone	р	Van Houten	23	
##	7	TV	V	akzo	43	
##	8	TV	V	akzo	12	
##	9	TV	V	Philips	67	
##	10	TV	V	Philips	21	
##	11	TV	V	Van Houten	56	
##	12	TV	V	Van Houten	65	
##	13	Laptop	Х	Philips		
##	14	Laptop	Х	Philips		
##	15	Laptop	Х	Philips		
	16	Laptop	Х	akzo		
##	17	Laptop	X	akzo		
##	18	Laptop		Van Houten		
##		Laptop		Van Houten		
##	20	Laptop	X	unilver		
##	21	Tablet	q	akzo		
##		Tablet	q	akzo		
##	23	Tablet	q	unilever		
##	24	Tablet	q	unilever		
	25	Tablet	q	unilever		
##	23	Tablet	4		l_address	name
##	1	Groningensingel	147-arr			dhr p. jansen
##		Groningensingel Groningensingel				dhr p. hansen
##		Groningensingel Groningensingel				dhr p. franssen
##		Leeuwardenweg				dhr p. janssen
##		Delfzijlstraat				
##						
		Delfzijlstraat				mevr 1. dokken
##		Leeuwardenweg				dhr p. bansen
##		Leeuwardenweg				dhr p. vansen
##	9	Delfzijlstraat				mevr 1. mokken
##		Delfzijlstraat				mevr 1. mokken
##	11	Delfzijlstraat				mevr 1. wokken
	12	Delfzijlstraat				mevr l. kokken
##	13	3				dhr j. Gansen
##	14	, , , , , , , , , , , , , , , , , , ,				dhr p. mansen
	15	Groningensingel				dhr p. fransen
##		Leeuwardenweg				dhr p. bransen
##	17	Leeuwardenweg				mevr l. mokken
	18	Delfzijlstraat				mevr 1. sokken
##	19	Delfzijlstraat				mevr l. Bokken
##	20	Jourestraat				mevr l. gokken
##	21	Leeuwardenweg	182-arr	hem-the ne	therlands	mevr l. rokken
##	22	Leeuwardenweg	183-arm	hem-the ne	therlands	mevr l. lokken
##	23	Jourestraat	24-arn	hem-the ne	therlands	mevr 1. stokken

```
## 24    Jourestraat 25-arnhem-the netherlands mevr 1. rokken
## 25    Jourestraat 26-arnhem-the netherlands mevr 1. rokken
```

```
refinesheet4<-unite(refinesheet3, "full_address", address, city, country, sep="-")
print(refinesheet4)</pre>
```

```
company Number
##
      productcat Productcode
## 1
     Smartphone
                                Philips
                                              5
## 2
     Smartphone
                                             43
                                Philips
                           р
  3
     Smartphone
                                Philips
                                             23
##
                           р
     Smartphone
                                             34
##
  4
                                   akzo
                           р
  5
     Smartphone
                                             56
##
                                Philips
                           р
##
   6
      Smartphone
                           p Van Houten
                                             23
                                             43
##
                                   akzo
##
  8
              TV
                                             12
                                   akzo
                           V
##
  9
              TV
                                Philips
                                             67
## 10
              TV
                                Philips
                                             21
## 11
              TV
                           v Van Houten
                                             56
##
  12
              TV
                           v Van Houten
                                             65
## 13
          Laptop
                                Philips
                                              3
## 14
          Laptop
                           Х
                                Philips
                                             34
## 15
          Laptop
                                Philips
                                             12
                           Х
## 16
          Laptop
                                   akzo
                                              5
                           Х
## 17
                                              8
          Laptop
                                   akzo
## 18
          Laptop
                           x Van Houten
                                             45
## 19
          Laptop
                           x Van Houten
                                             21
## 20
          Laptop
                                unilver
                                              3
                                              5
## 21
          Tablet
                                   akzo
                           q
  22
                                              9
##
          Tablet
                                   akzo
                           q
## 23
          Tablet
                              unilever
                                              4
                           q
## 24
                              unilever
                                              6
          Tablet
                           q
  25
                               unilever
##
          Tablet
                           a
##
                                    full_address
                                                              name
     Groningensingel 147-arnhem-the netherlands
##
  1
                                                    dhr p. jansen
  2
      Groningensingel 148-arnhem-the netherlands
                                                    dhr p. hansen
     Groningensingel 152-arnhem-the netherlands dhr p. franssen
##
  3
##
  4
       Leeuwardenweg 181-arnhem-the netherlands dhr p. janssen
  5
       Delfzijlstraat 54-arnhem-the netherlands mevr 1. mokken
##
       Delfzijlstraat 61-arnhem-the netherlands mevr 1.
                                                            dokken
##
   6
  7
       Leeuwardenweg 178-arnhem-the netherlands
                                                    dhr p. bansen
##
##
  8
       Leeuwardenweg 179-arnhem-the netherlands
                                                     dhr p. vansen
        Delfzijlstraat 55-arnhem-the netherlands mevr 1. mokken
##
  9
## 10
       Delfzijlstraat 56-arnhem-the netherlands mevr 1. mokken
## 11
        Delfzijlstraat 58-arnhem-the netherlands mevr 1.
                                                            wokken
        Delfzijlstraat 59-arnhem-the netherlands mevr 1.
## 12
                                                           kokken
  13 Groningensingel 149-arnhem-the netherlands
                                                    dhr j. Gansen
## 14 Groningensingel 150-arnhem-the netherlands
                                                    dhr p. mansen
  15 Groningensingel 151-arnhem-the netherlands dhr p. fransen
  16
        Leeuwardenweg 180-arnhem-the netherlands dhr p. bransen
##
## 17
        Leeuwardenweg 184-arnhem-the netherlands mevr 1. mokken
##
  18
       Delfzijlstraat 57-arnhem-the netherlands mevr 1. sokken
  19
       Delfzijlstraat 60-arnhem-the netherlands mevr 1. Bokken
##
##
  20
           Jourestraat 23-arnhem-the netherlands mevr 1.
                                                            gokken
  21
        Leeuwardenweg 182-arnhem-the netherlands mevr 1. rokken
##
##
  22
        Leeuwardenweg 183-arnhem-the netherlands mevr 1. lokken
## 23
           Jourestraat 24-arnhem-the netherlands mevr 1. stokken
```

```
## 24    Jourestraat 25-arnhem-the netherlands mevr 1. rokken
## 25    Jourestraat 26-arnhem-the netherlands mevr 1. rokken
```

```
refinesheet5<-refinesheet4%>% mutate(company_philips=ifelse(refinesheet4$company=="Ph
ilips",1,0))
refinesheet6<-refinesheet5%>% mutate(company_akzo=ifelse(refinesheet5$company=="akzo"
,1,0))
refinesheet7<-refinesheet6%>% mutate(company_vanHouten=ifelse(refinesheet6$company=="
Van Houten",1,0))
refinesheet8<-refinesheet7%>% mutate(company_unilever=ifelse(refinesheet7$company=="u
nilever",1,0))
print(refinesheet8)
```

```
company Number
##
      productcat Productcode
## 1
     Smartphone
                                Philips
                                              5
## 2
     Smartphone
                                             43
                                Philips
                           р
  3
     Smartphone
                                Philips
                                             23
##
                           р
     Smartphone
                                             34
##
  4
                                   akzo
                           р
  5
     Smartphone
                                             56
##
                                Philips
                           р
##
   6
      Smartphone
                           p Van Houten
                                             23
                                             43
##
                                   akzo
##
  8
              TV
                                             12
                                   akzo
                           V
##
  9
              TV
                                Philips
                                             67
## 10
              TV
                                Philips
                                             21
## 11
              TV
                           v Van Houten
                                             56
##
  12
              TV
                           v Van Houten
                                             65
## 13
          Laptop
                                Philips
                                              3
## 14
          Laptop
                           Х
                                Philips
                                             34
## 15
          Laptop
                                Philips
                                             12
                           Х
## 16
          Laptop
                                   akzo
                                              5
                           Х
## 17
                                              8
          Laptop
                                   akzo
## 18
          Laptop
                           x Van Houten
                                             45
## 19
          Laptop
                           x Van Houten
                                             21
## 20
          Laptop
                                unilver
                                              3
                                              5
## 21
          Tablet
                                   akzo
                           q
  22
                                              9
##
          Tablet
                                   akzo
                           q
## 23
          Tablet
                              unilever
                                              4
                           q
## 24
                              unilever
                                              6
          Tablet
                           q
  25
                               unilever
##
          Tablet
                           a
##
                                    full_address
                                                              name
     Groningensingel 147-arnhem-the netherlands
##
  1
                                                    dhr p. jansen
  2
      Groningensingel 148-arnhem-the netherlands
                                                     dhr p. hansen
     Groningensingel 152-arnhem-the netherlands dhr p. franssen
##
  3
##
  4
       Leeuwardenweg 181-arnhem-the netherlands dhr p. janssen
  5
       Delfzijlstraat 54-arnhem-the netherlands mevr 1. mokken
##
       Delfzijlstraat 61-arnhem-the netherlands mevr 1.
                                                            dokken
##
   6
  7
       Leeuwardenweg 178-arnhem-the netherlands
                                                    dhr p. bansen
##
##
  8
       Leeuwardenweg 179-arnhem-the netherlands
                                                     dhr p. vansen
        Delfzijlstraat 55-arnhem-the netherlands mevr 1. mokken
##
  9
## 10
       Delfzijlstraat 56-arnhem-the netherlands mevr 1. mokken
## 11
        Delfzijlstraat 58-arnhem-the netherlands mevr 1.
                                                            wokken
        Delfzijlstraat 59-arnhem-the netherlands mevr 1.
## 12
                                                           kokken
  13 Groningensingel 149-arnhem-the netherlands
                                                    dhr j. Gansen
## 14 Groningensingel 150-arnhem-the netherlands
                                                    dhr p. mansen
  15 Groningensingel 151-arnhem-the netherlands dhr p. fransen
  16
        Leeuwardenweg 180-arnhem-the netherlands dhr p. bransen
##
##
  17
        Leeuwardenweg 184-arnhem-the netherlands mevr 1. mokken
##
  18
       Delfzijlstraat 57-arnhem-the netherlands mevr 1. sokken
  19
       Delfzijlstraat 60-arnhem-the netherlands mevr 1. Bokken
##
##
  20
           Jourestraat 23-arnhem-the netherlands mevr 1.
                                                            gokken
  21
        Leeuwardenweg 182-arnhem-the netherlands mevr 1. rokken
##
##
  22
        Leeuwardenweg 183-arnhem-the netherlands mevr 1. lokken
## 23
           Jourestraat 24-arnhem-the netherlands mevr 1. stokken
```

```
## 24
            Jourestraat 25-arnhem-the netherlands mevr 1. rokken
## 25
            Jourestraat 26-arnhem-the netherlands mevr 1. rokken
##
      company_philips company_akzo company_vanHouten company_unilever
## 1
                                     0
                                                                             0
## 2
                      1
                                     0
                                                          0
## 3
                      1
                                     0
                                                          0
                                                                             0
                                                                             0
## 4
                                     1
                                                          0
## 5
                      1
                                     0
                                                          0
                                                                             0
                                     0
## 6
                      0
                                                          1
                                                                             0
## 7
                      0
                                     1
                                                          0
                                                                             0
## 8
                                     1
                                                          0
## 9
                      1
                                     0
                                                          0
                                                                             0
## 10
                      1
                                     0
                                                          0
                                                                             0
## 11
                      0
                                     0
                                                          1
                                                                             0
## 12
                      0
                                     0
                                                          1
                                                                             0
## 13
                      1
                                     0
                                                          0
                                                                             0
## 14
                      1
                                     0
                                                          0
                                                                             0
## 15
                                     0
                                                          0
## 16
                                                                             0
                      0
                                     1
                                                          0
## 17
                                                                             0
                      0
                                     1
                                                          0
## 18
                      0
                                     0
                                                          1
                                                                             0
## 19
                                                          1
## 20
                                     0
                                                          0
                                                                             0
                      0
## 21
                      0
                                     1
                                                          0
                                                                             0
## 22
                                                                             0
                      0
                                     1
                                                          0
## 23
                      0
                                     0
                                                          0
                                                                             1
                      0
                                     0
                                                          0
## 24
                                                                             1
                                     0
## 25
                      0
                                                          0
                                                                             1
```

```
refinesheet9<-refinesheet8%>% mutate(Product_smartphone=ifelse(refinesheet8$productca
t=="Smartphone",1,0))
refinesheet10<-refinesheet9 %>% mutate(Product_TV=ifelse(refinesheet8$productcat=="TV
",1,0))
refinesheet11<-refinesheet10 %>% mutate(Product_Laptop=ifelse(refinesheet10$productca
t=="Laptop",1,0))
refine_clean2<-refinesheet11 %>% mutate(Product_tablet=ifelse(refinesheet11$productca
t=="Tablet",1,0))
setwd("~/Research/test1/refineassignment")
write.csv(refine_clean2,file='refine_clean2.csv')
print(refine_clean2)
```

##		productcat Productcode	company	Number	
##	1	Smartphone p	Philips	5	
##	2	Smartphone p	Philips	43	
##	3	Smartphone p	Philips	23	
##	4	Smartphone p	akzo	34	
##	5	Smartphone p	Philips	56	
##	6	Smartphone p	Van Houten	23	
##	7	TV v	akzo	43	
##	8	TV v	akzo	12	
##	9	TV v	Philips	67	
##	10	TV v	Philips	21	
##	11	TV v	Van Houten	56	
##	12	TV v	Van Houten	65	
##	13	Laptop x	Philips	3	
##	14	Laptop x	Philips	34	
##	15	Laptop x	Philips	12	
##	16	Laptop x	akzo	5	
##	17	Laptop x	akzo	8	
##	18	Laptop x	Van Houten	45	
##	19	Laptop x	Van Houten	21	
##	20	Laptop x	unilver	3	
##	21	Tablet q	akzo	5	
##	22	Tablet q	akzo	9	
##	23	Tablet q	unilever	4	
##	24	Tablet q	unilever	6	
##	25	Tablet q	unilever	8	
##			ful	l_address	name
##	1	Groningensingel 147-ar	nhem-the ne	therlands	dhr p. jansen
##	2	Groningensingel 148-ar	nhem-the ne	therlands	dhr p. hansen
##	3	Groningensingel 152-ar	nhem-the ne	therlands	dhr p. franssen
##	4	Leeuwardenweg 181-ar	nhem-the ne	therlands	dhr p. janssen
##	5	Delfzijlstraat 54-ar	nhem-the ne	therlands	mevr 1. mokken
##	6	Delfzijlstraat 61-ar	nhem-the ne	therlands	mevr l. dokken
##		Leeuwardenweg 178-ar			dhr p. bansen
##		Leeuwardenweg 179-ar			dhr p. vansen
##		Delfzijlstraat 55-ar			mevr l. mokken
##		Delfzijlstraat 56-ar			mevr l. mokken
##		Delfzijlstraat 58-ar			mevr l. wokken
##		Delfzijlstraat 59-ar			mevr l. kokken
##		Groningensingel 149-ar			dhr j. Gansen
##	14	Groningensingel 150-ar	nhem-the ne	therlands	dhr p. mansen
##	15	Groningensingel 151-ar	nhem-the ne	therlands	dhr p. fransen
##		Leeuwardenweg 180-ar			dhr p. bransen
##		Leeuwardenweg 184-ar			mevr 1. mokken
##	18	Delfzijlstraat 57-ar			mevr l. sokken
##	19	Delfzijlstraat 60-ar			mevr 1. Bokken
		Jourestraat 23-ar			mevr 1. gokken
##		Leeuwardenweg 182-ar			mevr l. rokken
##		Leeuwardenweg 183-ar			mevr 1. lokken
	23	Jourestraat 24-ar			
•					

1					
	# 24			e netherlands me	
	# 25			e netherlands me	
# :	#	company_philips c	ompany_akzo d	company_vanHouten	company_unilever
# :	# 1	1	0	0	0
# :	# 2	1	0	0	0
# :	# 3	1	0	0	0
# :	# 4	0	1	0	0
# :	# 5	1	0	0	0
# :	# 6	0	0	1	0
# :	# 7	0	1	0	0
# :	# 8	0	1	0	0
	# 9	1	0	0	0
	# 10	1	0	0	0
	# 11	0	0	1	0
	# 12	0	0	1	0
	# 13	1	0	0	0
	# 14	1	0	0	0
	# 15	1	0	0	0
	# 16	0	1	0	0
	# 17				
	# 17 # 18	0	1	0	0
		0	0	1	0
	# 19	0	0	1	0
	# 20	0	0	0	0
	# 21	0	1	0	0
	# 22	0	1	0	0
	# 23	0	0	0	1
	# 24	0	0	0	1
# :	# 25	0	0	0	1
# :	#	Product_smartphon	e Product_TV	Product_Laptop P	roduct_tablet
# :	# 1		1 0	0	0
# :	# 2		1 0	0	0
# :	# 3		1 0	0	0
# :	# 4		1 0	0	0
# :	# 5		1 0	0	0
# :	# 6		1 0	0	0
# :	# 7		0 1	0	0
# :	# 8		0 1	0	0
# :	# 9		0 1	0	0
# :	# 10		0 1	0	0
# :	# 11		0 1	0	0
# :	# 12		0 1	0	0
# :			0 0	1	0
#:			0 0	1	0
# :			0 0	1	0
#:			0 0	1	0
#:			0 0	1	0
#:			0 0	1	0
#:			0 0	1	0
#:			0 0	1	0
#:			0 0	0	1
#:			0 0	0	1
# .	II		0	U	1

## 23	0	0	0	1	
## 24	0	0	0	1	
## 25	0	0	0	1	