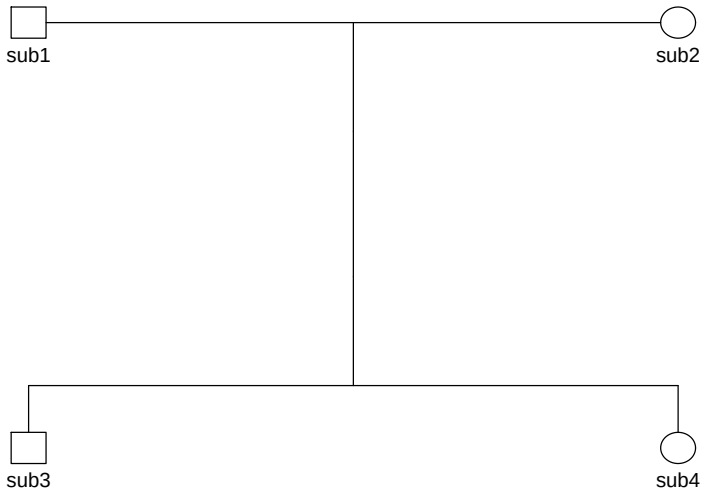


1 RVSharing Examples

1.1 Siblings

```
> test.ped
```

```
Pedigree object with 4 subjects
Bit size= 2
```

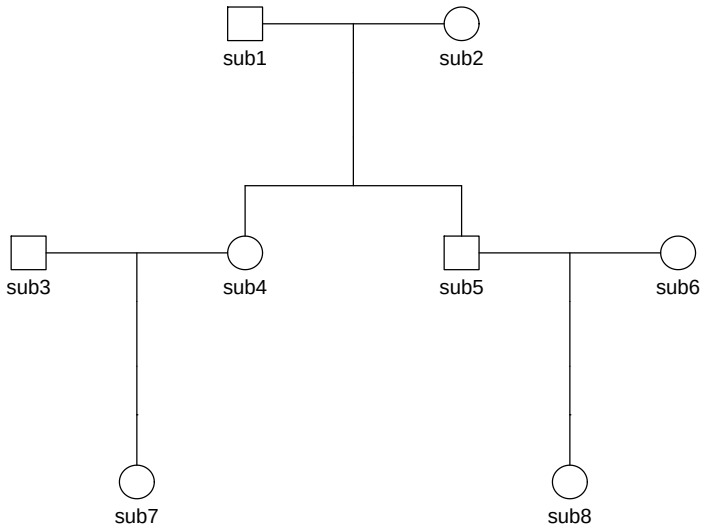
```
> 2 * kinship(test.ped)
```

```
     sub1 sub2 sub3 sub4
sub1  1.0  0.0  0.5  0.5
sub2  0.0  1.0  0.5  0.5
sub3  0.5  0.5  1.0  0.5
sub4  0.5  0.5  0.5  1.0
```

Now apply the RVsharing method which calls the function defined in "rare_variant_sharing_v3.R."

```
> RVsharing(test.ped)
```

```
$pshare
[1] 0.3333333

$iancestors
[1] "sub1"

$desfounders
$desfounders$sub3
sub2 sub1
   1    1

$desfounders$sub4
sub2 sub1
   1    1


$id
[1] "sub1" "sub2" "sub3" "sub4"

$dad.id
[1] NA     NA     "sub1" "sub1"

$mom.id
[1] NA     NA     "sub2" "sub2"
```



1.2 Cousins

```
> test.ped

Pedigree object with 8 subjects
Bit size= 4



> 2 * kinship(test.ped)

     sub1 sub2 sub3 sub4 sub5 sub6  sub7  sub8
sub1 1.00 0.00  0.0 0.50 0.50  0.0 0.250 0.250
sub2 0.00 1.00  0.0 0.50 0.50  0.0 0.250 0.250
sub3 0.00 0.00  1.0 0.00 0.00  0.0 0.500 0.000
sub4 0.50 0.50  0.0 1.00 0.50  0.0 0.500 0.250
sub5 0.50 0.50  0.0 0.50 1.00  0.0 0.250 0.500
sub6 0.00 0.00  0.0 0.00 0.00  1.0 0.000 0.500
sub7 0.25 0.25  0.5 0.50 0.25  0.0 1.000 0.125
sub8 0.25 0.25  0.0 0.25 0.50  0.5 0.125 1.000
```

Now apply the RVsharing method which calls the function defined in "rare_variant_sharing_v3.R."

```
> RVsharing(test.ped)

$pshare
[1] 0.04347826

$iancestors
[1] "sub1"

$desfounders
$desfounders$sub7
$desfounders$sub7$<NA>
[1] 1

$desfounders$sub7$sub2
[1] 2

$desfounders$sub7$sub1
[1] 2


$desfounders$sub8
$desfounders$sub8$sub6
[1] 1

$desfounders$sub8$sub2
[1] 2

$desfounders$sub8$sub1
[1] 2



$id
[1] "sub1" "sub2" "sub3" "sub4" "sub5" "sub6" "sub7" "sub8"

$dad.id
[1] NA     NA     NA     "sub1" "sub1" NA     "sub3" "sub5"

$mom.id
[1] NA     NA     NA     "sub2" "sub2" NA     "sub4" "sub6"
```