

# MapReduce

## Classroom example

This is the file to create a map reduce classroom example. The setup is as follows

1. print this file
2. give the raw file to 1-4 students, they shall count the words. Measure the time. This is sequential processing.
3. give the chunked file to the respective number of students. There are  $n = 2, 4, 5, 10$  groups available. The number of students is the chunk server.
4. one student acts as the “reduce” server, collecting all the counts.
5. write the counts on the whiteboard including the times
6. which number of groups is the most efficient and which produces considerable overhead?

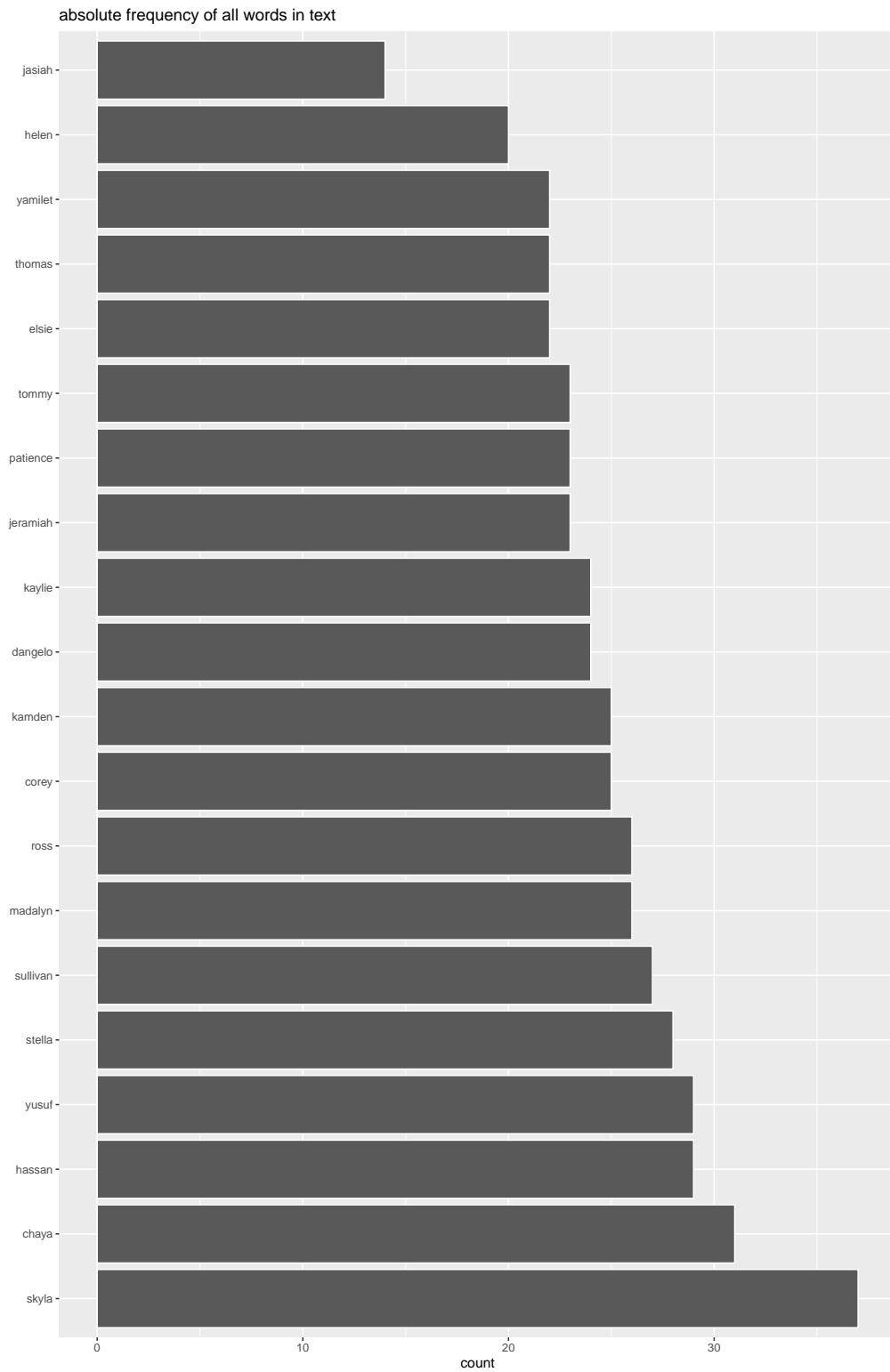
## some summary statistics on the raw data

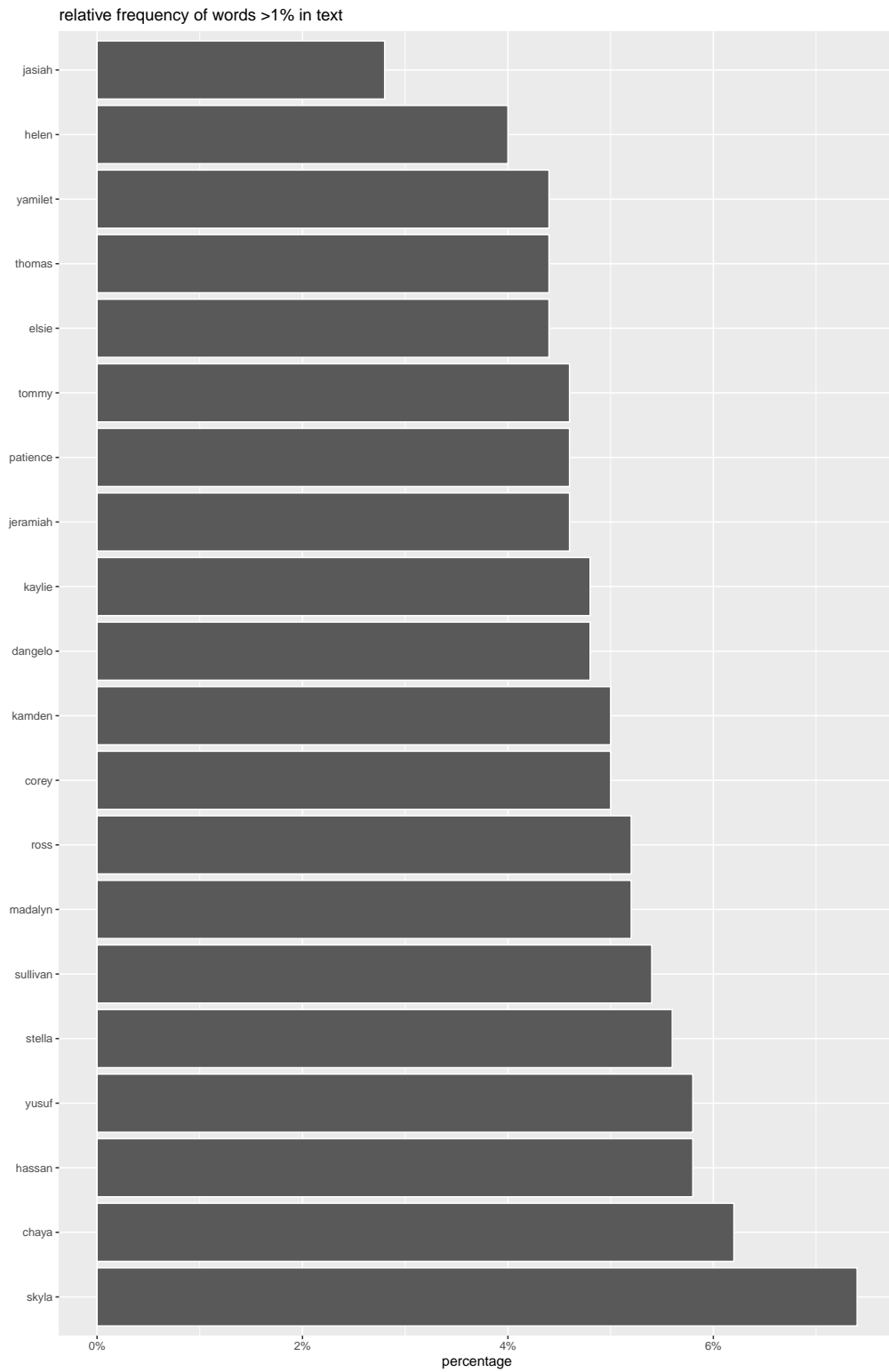
In total there are 500 words available.

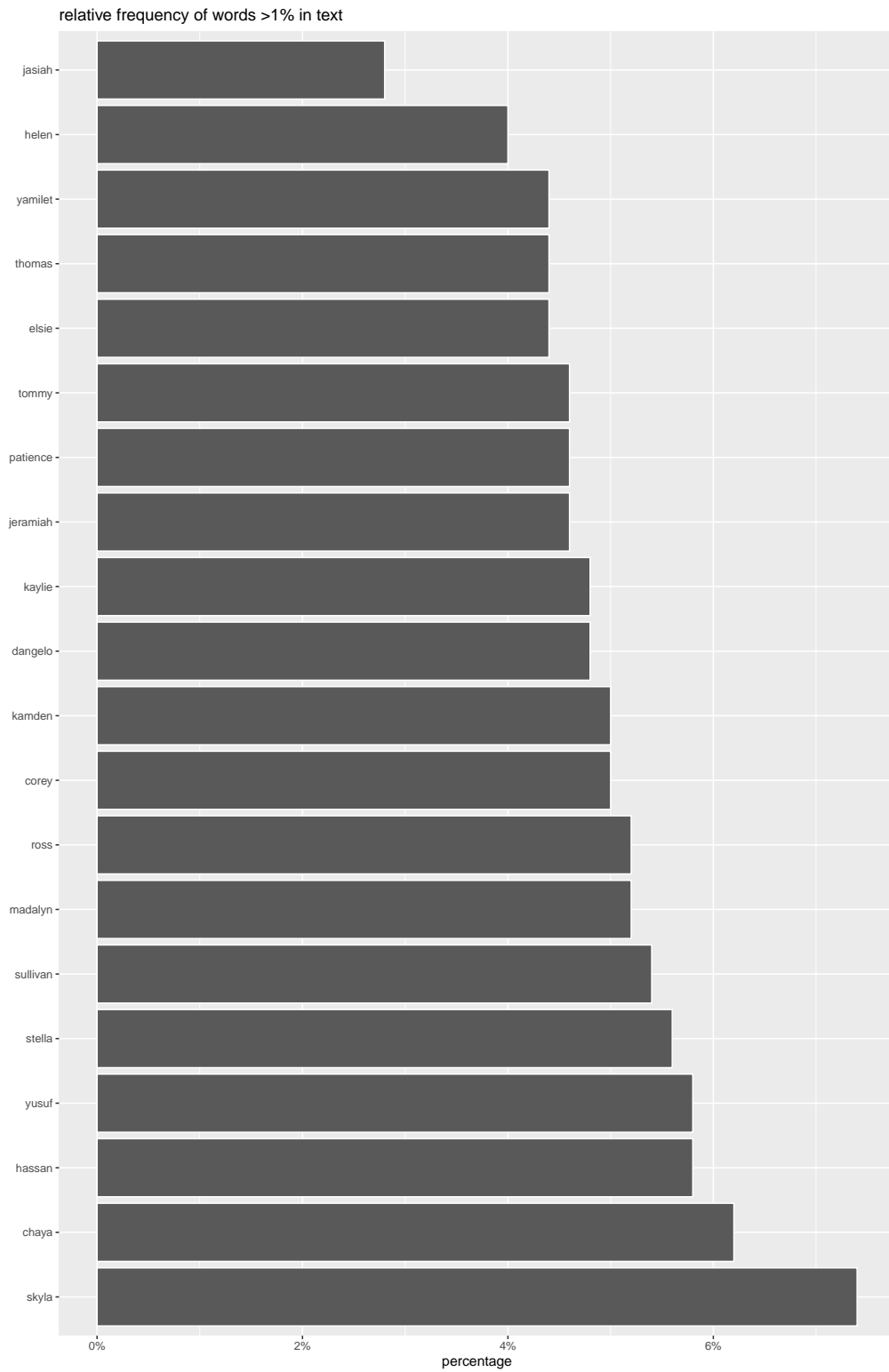
words	Freq	percentage	percentage_round
skyla	37	7.40%	7.40%
chaya	31	6.20%	6.20%
hassan	29	5.80%	5.80%
yusuf	29	5.80%	5.80%
stella	28	5.60%	5.60%
sullivan	27	5.40%	5.40%
madalyn	26	5.20%	5.20%
ross	26	5.20%	5.20%
corey	25	5.00%	5.00%
kamden	25	5.00%	5.00%
dangelo	24	4.80%	4.80%
kaylie	24	4.80%	4.80%

jeramiah	23	4.60%	4.60%
patience	23	4.60%	4.60%
tommy	23	4.60%	4.60%
elsie	22	4.40%	4.40%
thomas	22	4.40%	4.40%
yamilet	22	4.40%	4.40%
helen	20	4.00%	4.00%
jasiah	14	2.80%	2.80%

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## The Raw data 01

Ross , Hassan, Stella, Thomas, Yusuf, Hassan, Chaya, Yusuf, Yusuf, Stella, Sullivan, Tommy, Helen, Yamilet, Skyla, Jeramiah, Chaya, Thomas, Yamilet, Stella, Corey, Kamden, Yamilet, Kaylie, Corey, Helen, Kamden, Thomas, Chaya, Elsie, Hassan, Patience, Chaya, Ross , Elsie, Kamden, Yusuf, Patience, Helen, Chaya, Dangelo, Stella, Dangelo, Helen, Stella, Skyla, Kaylie, Skyla, Sullivan, Yamilet, Jeramiah, Hassan, Madalyn, Yusuf, Skyla, Chaya, Patience, Dangelo, Elsie, Kamden, Patience, Helen, Ross , Sullivan, Thomas, Elsie, Stella, Jeramiah, Thomas, Corey, Skyla, Kaylie, Sullivan, Tommy, Corey, Thomas, Skyla, Skyla, Ross , Sullivan, Kaylie, Sullivan, Sullivan, Ross , Dangelo, Jasiah, Patience, Jeramiah, Elsie, Yamilet, Sullivan, Corey, Yusuf, Patience, Skyla, Yusuf, Jeramiah, Skyla, Hassan, Kamden, Yusuf, Kaylie, Ross , Sullivan, Kaylie, Yusuf, Dangelo, Patience, Chaya, Madalyn, Kamden, Corey, Madalyn, Skyla, Helen, Helen, Ross , Patience, Jeramiah, Chaya, Hassan, Skyla, Corey, Corey, Skyla, Madalyn, Sullivan, Stella, Corey, Patience, Hassan, Tommy, Ross , Ross , Dangelo, Madalyn, Kamden, Helen, Thomas, Stella, Helen, Tommy, Stella, Hassan, Hassan, Jeramiah, Yusuf, Helen, Jeramiah, Helen, Stella, Tommy, Yusuf, Hassan, Dangelo, Stella, Ross , Chaya, Dangelo, Corey, Kaylie, Kamden, Chaya, Madalyn, Chaya, Jasiah, Yusuf, Helen, Yamilet, Kaylie, Elsie, Hassan, Elsie, Tommy, Patience, Yusuf, Hassan, Madalyn, Corey, Jasiah, Sullivan, Kamden, Sullivan, Patience, Patience, Helen, Sullivan, Sullivan, Stella, Madalyn, Hassan, Jeramiah, Yamilet, Stella, Stella, Corey, Hassan, Elsie, Patience, Tommy, Ross , Madalyn, Jasiah, Madalyn, Stella, Ross , Jasiah, Sullivan, Kamden, Madalyn, Madalyn, Yusuf, Elsie, Dangelo, Tommy, Kamden, Kaylie, Chaya, Kamden, Helen, Kamden, Jeramiah, Thomas, Elsie, Stella, Dangelo, Yusuf, Kamden, Skyla, Dangelo, Kamden, Thomas, Elsie, Jasiah, Chaya, Stella, Kaylie, Patience, Yamilet, Jasiah, Corey, Yamilet, Chaya, Corey, Yusuf, Elsie, Thomas, Jeramiah, Chaya, Jasiah, Ross , Yusuf, Hassan, Skyla, Kaylie, Corey, Yusuf, Thomas, Skyla, Kaylie, Skyla, Madalyn, Chaya, Jasiah, Tommy, Stella, Skyla, Yusuf, Skyla, Ross , Skyla, Corey, Madalyn, Patience, Skyla, Chaya, Corey, Corey, Dangelo, Corey, Yamilet, Madalyn, Kamden, Patience, Kaylie, Hassan, Kaylie, Skyla, Jasiah, Madalyn, Dangelo, Kamden, Chaya, Hassan, Corey, Yusuf, Madalyn, Helen, Dangelo, Dangelo, Kaylie, Helen, Thomas, Yamilet, Kaylie, Elsie, Ross , Elsie, Dangelo, Yamilet, Jasiah, Thomas, Kamden, Yusuf, Chaya, Madalyn, Thomas, Elsie, Stella, Kaylie, Kaylie, Jeramiah, Yamilet, Hassan, Dangelo, Kamden, Kamden, Ross , Sullivan, Ross , Tommy, Dangelo, Jeramiah, Skyla, Dangelo, Hassan, Tommy, Helen, Skyla, Jeramiah, Patience, Skyla, Ross , Madalyn, Hassan, Hassan, Thomas, Patience, Madalyn, Madalyn, Stella, Kamden, Corey, Elsie, Jeramiah, Yusuf, Skyla, Thomas, Madalyn, Tommy, Tommy, Thomas, Kaylie, Jeramiah, Elsie, Chaya, Tommy, Skyla, Ross , Patience, Jasiah, Thomas, Sullivan, Kaylie, Tommy, Skyla, Skyla, Stella, Chaya, Sullivan, Yamilet, Skyla, Jeramiah, Yamilet, Corey, Dangelo, Yamilet, Kamden, Yamilet, Jasiah, Skyla, Dangelo, Jeramiah, Madalyn, Thomas, Hassan, Tommy, Helen, Skyla, Helen, Corey, Jeramiah, Yusuf, Skyla, Kaylie, Ross , Stella, Madalyn, Jeramiah, Thomas, Stella, Sullivan, Ross , Sullivan, Kamden, Kaylie, Tommy, Sullivan, Jeramiah, Tommy, Stella, Jeramiah, Yamilet, Chaya, Skyla, Thomas, Patience, Tommy, Sullivan, Stella, Dangelo, Skyla, Sullivan, Yamilet, Skyla, Yusuf, Chaya, Elsie, Stella, Patience, Yusuf, Sullivan, Skyla, Jeramiah, Chaya, Dangelo, Has-

san, Stella, Ross , Elsie, Corey, Ross , Hassan, Dangelo, Chaya, Corey, Hassan, Tommy, Elsie, Helen, Yusuf, Ross , Kamden, Hassan, Yamilet, Elsie, Patience, Sullivan, Stella, Madalyn, Tommy, Hassan, Jasiah, Chaya, Hassan, Sullivan, Chaya, Sullivan, Kamden, Ross , Tommy, Patience, Yamilet, Ross , Chaya, Chaya, Tommy, Kaylie, Yusuf, Thomas, Chaya, Yusuf, Skyla, Yamilet, Madalyn, Hassan, Yusuf, Kaylie, Elsie, Chaya

## The Raw data 02

Ross , Hassan, Stella, Thomas, Yusuf, Hassan, Chaya, Yusuf, Yusuf, Stella, Sullivan, Tommy, Helen, Yamilet, Skyla, Jeramiah, Chaya, Thomas, Yamilet, Stella, Corey, Kamden, Yamilet, Kaylie, Corey, Helen, Kamden, Thomas, Chaya, Elsie, Hassan, Patience, Chaya, Ross , Elsie, Kamden, Yusuf, Patience, Helen, Chaya, Dangelo, Stella, Dangelo, Helen, Stella, Skyla, Kaylie, Skyla, Sullivan, Yamilet, Jeramiah, Hassan, Madalyn, Yusuf, Skyla, Chaya, Patience, Dangelo, Elsie, Kamden, Patience, Helen, Ross , Sullivan, Thomas, Elsie, Stella, Jeramiah, Thomas, Corey, Skyla, Kaylie, Sullivan, Tommy, Corey, Thomas, Skyla, Skyla, Ross , Sullivan, Kaylie, Sullivan, Sullivan, Ross , Dangelo, Jasiah, Patience, Jeramiah, Elsie, Yamilet, Sullivan, Corey, Yusuf, Patience, Skyla, Yusuf, Jeramiah, Skyla, Hassan, Kamden, Yusuf, Kaylie, Ross , Sullivan, Kaylie, Yusuf, Dangelo, Patience, Chaya, Madalyn, Kamden, Corey, Madalyn, Skyla, Helen, Helen, Ross , Patience, Jeramiah, Chaya, Hassan, Skyla, Corey, Corey, Skyla, Madalyn, Sullivan, Stella, Corey, Patience, Hassan, Tommy, Ross , Ross , Dangelo, Madalyn, Kamden, Helen, Thomas, Stella, Helen, Tommy, Stella, Hassan, Hassan, Jeramiah, Yusuf, Helen, Jeramiah, Helen, Stella, Tommy, Yusuf, Hassan, Dangelo, Stella, Ross , Chaya, Dangelo, Corey, Kaylie, Kamden, Chaya, Madalyn, Chaya, Jasiah, Yusuf, Helen, Yamilet, Kaylie, Elsie, Hassan, Elsie, Tommy, Patience, Yusuf, Hassan, Madalyn, Corey, Jasiah, Sullivan, Kamden, Sullivan, Patience, Patience, Helen, Sullivan, Sullivan, Stella, Madalyn, Hassan, Jeramiah, Yamilet, Stella, Stella, Corey, Hassan, Elsie, Patience, Tommy, Ross , Madalyn, Jasiah, Madalyn, Stella, Ross , Jasiah, Sullivan, Kamden, Madalyn, Madalyn, Yusuf, Elsie, Dangelo, Tommy, Kamden, Kaylie, Chaya, Kamden, Helen, Kamden, Jeramiah, Thomas, Elsie, Stella, Dangelo, Yusuf, Kamden, Skyla, Dangelo, Kamden, Thomas, Elsie, Jasiah, Chaya, Stella, Kaylie, Patience, Yamilet, Jasiah, Corey, Yamilet, Chaya, Corey, Yusuf, Elsie, Thomas, Jeramiah, Chaya, Jasiah, Ross , Yusuf, Hassan, Skyla, Kaylie, Corey, Yusuf, Thomas, Skyla, Kaylie, Skyla, Madalyn, Chaya, Jasiah, Tommy, Stella, Skyla, Yusuf, Skyla, Ross , Skyla, Corey, Madalyn, Patience, Skyla, Chaya, Corey, Corey, Dangelo, Corey, Yamilet, Madalyn, Kamden, Patience, Kaylie, Hassan, Kaylie, Skyla, Jasiah, Madalyn, Dangelo, Kamden, Chaya, Hassan, Corey, Yusuf, Madalyn, Helen, Dangelo, Dangelo, Kaylie, Helen, Thomas, Yamilet, Kaylie, Elsie, Ross , Elsie, Dangelo, Yamilet, Jasiah, Thomas, Kamden, Yusuf, Chaya, Madalyn, Thomas, Elsie, Stella, Kaylie, Kaylie, Jeramiah, Yamilet, Hassan, Dangelo, Kamden, Kamden, Ross , Sullivan, Ross , Tommy, Dangelo, Jeramiah, Skyla, Dangelo, Hassan, Tommy, Helen, Skyla, Jeramiah, Patience, Skyla, Ross , Madalyn, Hassan, Hassan, Thomas, Patience, Madalyn, Madalyn, Stella, Kamden, Corey, Elsie, Jeramiah, Yusuf, Skyla, Thomas, Madalyn, Tommy, Tommy, Thomas, Kaylie, Jeramiah, Elsie, Chaya, Tommy, Skyla, Ross , Patience, Jasiah, Thomas, Sullivan, Kaylie, Tommy, Skyla, Skyla, Stella, Chaya, Sullivan, Yamilet, Skyla, Jeramiah, Yamilet, Corey, Dangelo, Yamilet, Kamden, Yamilet, Jasiah, Skyla, Dangelo, Jeramiah, Madalyn, Thomas, Hassan, Tommy, Helen, Skyla, Helen, Corey, Jeramiah, Yusuf, Skyla, Kaylie, Ross , Stella, Madalyn, Jeramiah, Thomas, Stella, Sullivan, Ross , Sullivan, Kamden, Kaylie, Tommy, Sullivan, Jeramiah, Tommy, Stella, Jeramiah, Yamilet, Chaya, Skyla, Thomas, Patience, Tommy, Sullivan, Stella, Dangelo, Skyla, Sullivan, Yamilet, Skyla, Yusuf, Chaya, Elsie, Stella, Patience, Yusuf, Sullivan, Skyla, Jeramiah, Chaya, Dangelo, Has-



san, Stella, Ross , Elsie, Corey, Ross , Hassan, Dangelo, Chaya, Corey, Hassan, Tommy, Elsie, Helen, Yusuf, Ross , Kamden, Hassan, Yamilet, Elsie, Patience, Sullivan, Stella, Madalyn, Tommy, Hassan, Jasiah, Chaya, Hassan, Sullivan, Chaya, Sullivan, Kamden, Ross , Tommy, Patience, Yamilet, Ross , Chaya, Chaya, Tommy, Kaylie, Yusuf, Thomas, Chaya, Yusuf, Skyla, Yamilet, Madalyn, Hassan, Yusuf, Kaylie, Elsie, Chaya

## The Raw data 03

Ross , Hassan, Stella, Thomas, Yusuf, Hassan, Chaya, Yusuf, Yusuf, Stella, Sullivan, Tommy, Helen, Yamilet, Skyla, Jeramiah, Chaya, Thomas, Yamilet, Stella, Corey, Kamden, Yamilet, Kaylie, Corey, Helen, Kamden, Thomas, Chaya, Elsie, Hassan, Patience, Chaya, Ross , Elsie, Kamden, Yusuf, Patience, Helen, Chaya, Dangelo, Stella, Dangelo, Helen, Stella, Skyla, Kaylie, Skyla, Sullivan, Yamilet, Jeramiah, Hassan, Madalyn, Yusuf, Skyla, Chaya, Patience, Dangelo, Elsie, Kamden, Patience, Helen, Ross , Sullivan, Thomas, Elsie, Stella, Jeramiah, Thomas, Corey, Skyla, Kaylie, Sullivan, Tommy, Corey, Thomas, Skyla, Skyla, Ross , Sullivan, Kaylie, Sullivan, Sullivan, Ross , Dangelo, Jasiah, Patience, Jeramiah, Elsie, Yamilet, Sullivan, Corey, Yusuf, Patience, Skyla, Yusuf, Jeramiah, Skyla, Hassan, Kamden, Yusuf, Kaylie, Ross , Sullivan, Kaylie, Yusuf, Dangelo, Patience, Chaya, Madalyn, Kamden, Corey, Madalyn, Skyla, Helen, Helen, Ross , Patience, Jeramiah, Chaya, Hassan, Skyla, Corey, Corey, Skyla, Madalyn, Sullivan, Stella, Corey, Patience, Hassan, Tommy, Ross , Ross , Dangelo, Madalyn, Kamden, Helen, Thomas, Stella, Helen, Tommy, Stella, Hassan, Hassan, Jeramiah, Yusuf, Helen, Jeramiah, Helen, Stella, Tommy, Yusuf, Hassan, Dangelo, Stella, Ross , Chaya, Dangelo, Corey, Kaylie, Kamden, Chaya, Madalyn, Chaya, Jasiah, Yusuf, Helen, Yamilet, Kaylie, Elsie, Hassan, Elsie, Tommy, Patience, Yusuf, Hassan, Madalyn, Corey, Jasiah, Sullivan, Kamden, Sullivan, Patience, Patience, Helen, Sullivan, Sullivan, Stella, Madalyn, Hassan, Jeramiah, Yamilet, Stella, Stella, Corey, Hassan, Elsie, Patience, Tommy, Ross , Madalyn, Jasiah, Madalyn, Stella, Ross , Jasiah, Sullivan, Kamden, Madalyn, Madalyn, Yusuf, Elsie, Dangelo, Tommy, Kamden, Kaylie, Chaya, Kamden, Helen, Kamden, Jeramiah, Thomas, Elsie, Stella, Dangelo, Yusuf, Kamden, Skyla, Dangelo, Kamden, Thomas, Elsie, Jasiah, Chaya, Stella, Kaylie, Patience, Yamilet, Jasiah, Corey, Yamilet, Chaya, Corey, Yusuf, Elsie, Thomas, Jeramiah, Chaya, Jasiah, Ross , Yusuf, Hassan, Skyla, Kaylie, Corey, Yusuf, Thomas, Skyla, Kaylie, Skyla, Madalyn, Chaya, Jasiah, Tommy, Stella, Skyla, Yusuf, Skyla, Ross , Skyla, Corey, Madalyn, Patience, Skyla, Chaya, Corey, Corey, Dangelo, Corey, Yamilet, Madalyn, Kamden, Patience, Kaylie, Hassan, Kaylie, Skyla, Jasiah, Madalyn, Dangelo, Kamden, Chaya, Hassan, Corey, Yusuf, Madalyn, Helen, Dangelo, Dangelo, Kaylie, Helen, Thomas, Yamilet, Kaylie, Elsie, Ross , Elsie, Dangelo, Yamilet, Jasiah, Thomas, Kamden, Yusuf, Chaya, Madalyn, Thomas, Elsie, Stella, Kaylie, Kaylie, Jeramiah, Yamilet, Hassan, Dangelo, Kamden, Kamden, Ross , Sullivan, Ross , Tommy, Dangelo, Jeramiah, Skyla, Dangelo, Hassan, Tommy, Helen, Skyla, Jeramiah, Patience, Skyla, Ross , Madalyn, Hassan, Hassan, Thomas, Patience, Madalyn, Madalyn, Stella, Kamden, Corey, Elsie, Jeramiah, Yusuf, Skyla, Thomas, Madalyn, Tommy, Tommy, Thomas, Kaylie, Jeramiah, Elsie, Chaya, Tommy, Skyla, Ross , Patience, Jasiah, Thomas, Sullivan, Kaylie, Tommy, Skyla, Skyla, Stella, Chaya, Sullivan, Yamilet, Skyla, Jeramiah, Yamilet, Corey, Dangelo, Yamilet, Kamden, Yamilet, Jasiah, Skyla, Dangelo, Jeramiah, Madalyn, Thomas, Hassan, Tommy, Helen, Skyla, Helen, Corey, Jeramiah, Yusuf, Skyla, Kaylie, Ross , Stella, Madalyn, Jeramiah, Thomas, Stella, Sullivan, Ross , Sullivan, Kamden, Kaylie, Tommy, Sullivan, Jeramiah, Tommy, Stella, Jeramiah, Yamilet, Chaya, Skyla, Thomas, Patience, Tommy, Sullivan, Stella, Dangelo, Skyla, Sullivan, Yamilet, Skyla, Yusuf, Chaya, Elsie, Stella, Patience, Yusuf, Sullivan, Skyla, Jeramiah, Chaya, Dangelo, Has-

san, Stella, Ross , Elsie, Corey, Ross , Hassan, Dangelo, Chaya, Corey, Hassan, Tommy, Elsie, Helen, Yusuf, Ross , Kamden, Hassan, Yamilet, Elsie, Patience, Sullivan, Stella, Madalyn, Tommy, Hassan, Jasiah, Chaya, Hassan, Sullivan, Chaya, Sullivan, Kamden, Ross , Tommy, Patience, Yamilet, Ross , Chaya, Chaya, Tommy, Kaylie, Yusuf, Thomas, Chaya, Yusuf, Skyla, Yamilet, Madalyn, Hassan, Yusuf, Kaylie, Elsie, Chaya

## The Raw data 04

Ross , Hassan, Stella, Thomas, Yusuf, Hassan, Chaya, Yusuf, Yusuf, Stella, Sullivan, Tommy, Helen, Yamilet, Skyla, Jeramiah, Chaya, Thomas, Yamilet, Stella, Corey, Kamden, Yamilet, Kaylie, Corey, Helen, Kamden, Thomas, Chaya, Elsie, Hassan, Patience, Chaya, Ross , Elsie, Kamden, Yusuf, Patience, Helen, Chaya, Dangelo, Stella, Dangelo, Helen, Stella, Skyla, Kaylie, Skyla, Sullivan, Yamilet, Jeramiah, Hassan, Madalyn, Yusuf, Skyla, Chaya, Patience, Dangelo, Elsie, Kamden, Patience, Helen, Ross , Sullivan, Thomas, Elsie, Stella, Jeramiah, Thomas, Corey, Skyla, Kaylie, Sullivan, Tommy, Corey, Thomas, Skyla, Skyla, Ross , Sullivan, Kaylie, Sullivan, Sullivan, Ross , Dangelo, Jasiah, Patience, Jeramiah, Elsie, Yamilet, Sullivan, Corey, Yusuf, Patience, Skyla, Yusuf, Jeramiah, Skyla, Hassan, Kamden, Yusuf, Kaylie, Ross , Sullivan, Kaylie, Yusuf, Dangelo, Patience, Chaya, Madalyn, Kamden, Corey, Madalyn, Skyla, Helen, Helen, Ross , Patience, Jeramiah, Chaya, Hassan, Skyla, Corey, Corey, Skyla, Madalyn, Sullivan, Stella, Corey, Patience, Hassan, Tommy, Ross , Ross , Dangelo, Madalyn, Kamden, Helen, Thomas, Stella, Helen, Tommy, Stella, Hassan, Hassan, Jeramiah, Yusuf, Helen, Jeramiah, Helen, Stella, Tommy, Yusuf, Hassan, Dangelo, Stella, Ross , Chaya, Dangelo, Corey, Kaylie, Kamden, Chaya, Madalyn, Chaya, Jasiah, Yusuf, Helen, Yamilet, Kaylie, Elsie, Hassan, Elsie, Tommy, Patience, Yusuf, Hassan, Madalyn, Corey, Jasiah, Sullivan, Kamden, Sullivan, Patience, Patience, Helen, Sullivan, Sullivan, Stella, Madalyn, Hassan, Jeramiah, Yamilet, Stella, Stella, Corey, Hassan, Elsie, Patience, Tommy, Ross , Madalyn, Jasiah, Madalyn, Stella, Ross , Jasiah, Sullivan, Kamden, Madalyn, Madalyn, Yusuf, Elsie, Dangelo, Tommy, Kamden, Kaylie, Chaya, Kamden, Helen, Kamden, Jeramiah, Thomas, Elsie, Stella, Dangelo, Yusuf, Kamden, Skyla, Dangelo, Kamden, Thomas, Elsie, Jasiah, Chaya, Stella, Kaylie, Patience, Yamilet, Jasiah, Corey, Yamilet, Chaya, Corey, Yusuf, Elsie, Thomas, Jeramiah, Chaya, Jasiah, Ross , Yusuf, Hassan, Skyla, Kaylie, Corey, Yusuf, Thomas, Skyla, Kaylie, Skyla, Madalyn, Chaya, Jasiah, Tommy, Stella, Skyla, Yusuf, Skyla, Ross , Skyla, Corey, Madalyn, Patience, Skyla, Chaya, Corey, Corey, Dangelo, Corey, Yamilet, Madalyn, Kamden, Patience, Kaylie, Hassan, Kaylie, Skyla, Jasiah, Madalyn, Dangelo, Kamden, Chaya, Hassan, Corey, Yusuf, Madalyn, Helen, Dangelo, Dangelo, Kaylie, Helen, Thomas, Yamilet, Kaylie, Elsie, Ross , Elsie, Dangelo, Yamilet, Jasiah, Thomas, Kamden, Yusuf, Chaya, Madalyn, Thomas, Elsie, Stella, Kaylie, Kaylie, Jeramiah, Yamilet, Hassan, Dangelo, Kamden, Kamden, Ross , Sullivan, Ross , Tommy, Dangelo, Jeramiah, Skyla, Dangelo, Hassan, Tommy, Helen, Skyla, Jeramiah, Patience, Skyla, Ross , Madalyn, Hassan, Hassan, Thomas, Patience, Madalyn, Madalyn, Stella, Kamden, Corey, Elsie, Jeramiah, Yusuf, Skyla, Thomas, Madalyn, Tommy, Tommy, Thomas, Kaylie, Jeramiah, Elsie, Chaya, Tommy, Skyla, Ross , Patience, Jasiah, Thomas, Sullivan, Kaylie, Tommy, Skyla, Skyla, Stella, Chaya, Sullivan, Yamilet, Skyla, Jeramiah, Yamilet, Corey, Dangelo, Yamilet, Kamden, Yamilet, Jasiah, Skyla, Dangelo, Jeramiah, Madalyn, Thomas, Hassan, Tommy, Helen, Skyla, Helen, Corey, Jeramiah, Yusuf, Skyla, Kaylie, Ross , Stella, Madalyn, Jeramiah, Thomas, Stella, Sullivan, Ross , Sullivan, Kamden, Kaylie, Tommy, Sullivan, Jeramiah, Tommy, Stella, Jeramiah, Yamilet, Chaya, Skyla, Thomas, Patience, Tommy, Sullivan, Stella, Dangelo, Skyla, Sullivan, Yamilet, Skyla, Yusuf, Chaya, Elsie, Stella, Patience, Yusuf, Sullivan, Skyla, Jeramiah, Chaya, Dangelo, Has-

san, Stella, Ross , Elsie, Corey, Ross , Hassan, Dangelo, Chaya, Corey, Hassan, Tommy, Elsie, Helen, Yusuf, Ross , Kamden, Hassan, Yamilet, Elsie, Patience, Sullivan, Stella, Madalyn, Tommy, Hassan, Jasiah, Chaya, Hassan, Sullivan, Chaya, Sullivan, Kamden, Ross , Tommy, Patience, Yamilet, Ross , Chaya, Chaya, Tommy, Kaylie, Yusuf, Thomas, Chaya, Yusuf, Skyla, Yamilet, Madalyn, Hassan, Yusuf, Kaylie, Elsie, Chaya

## Two Groups

### Part 1 of 2 (250 words)

ross stella yusuf chaya yusuf sullivan helen skyla chaya yamilet corey yamilet corey kamden  
chaya hassan chaya elsie yusuf helen dangelo dangelo stella kaylie sullivan jeramiah madalyn  
skylia patience elsie patience ross thomas stella thomas skylia sullivan corey skylia ross kaylie  
sullivan dangelo patience elsie sullivan yusuf skylia jeramiah hassan yusuf ross kaylie dangelo  
chaya kamden madalyn helen ross jeramiah hassan corey skylia sullivan corey hassan ross  
dangelo kamden thomas helen stella hassan yusuf jeramiah stella yusuf dangelo ross dangelo  
kaylie chaya chaya yusuf yamilet elsie elsie patience hassan corey sullivan sullivan patience  
sullivan stella hassan yamilet stella hassan patience ross jasiah stella jasiah kamden madalyn  
elsie tommy kaylie kamden kamden thomas stella yusuf skylia kamden elsie chaya kaylie yamilet  
corey chaya yusuf thomas chaya ross hassan kaylie yusuf skylia skylia chaya tommy skylia skylia  
skylia madalyn skylia corey dangelo yamilet kamden kaylie kaylie jasiah dangelo chaya corey  
madalyn dangelo kaylie thomas kaylie ross dangelo jasiah kamden chaya thomas stella kaylie  
yamilet dangelo kamden sullivan tommy jeramiah dangelo tommy skylia patience ross hassan  
thomas madalyn stella corey jeramiah skylia madalyn tommy kaylie elsie tommy ross jasiah  
sullivan tommy skylia chaya yamilet jeramiah corey yamilet yamilet skylia jeramiah thomas  
tommy skylia corey yusuf kaylie stella jeramiah stella ross kamden tommy jeramiah stella  
yamilet skylia patience sullivan dangelo sullivan skylia chaya stella yusuf skylia chaya hassan  
ross corey hassan chaya hassan elsie yusuf kamden yamilet patience stella tommy jasiah hassan  
chaya kamden tommy yamilet chaya tommy yusuf chaya skylia madalyn yusuf elsie

## Part 2 of 2 (250 words)

hassan thomas hassan yusuf stella tommy yamilet jeramiah thomas stella kamden kaylie helen  
thomas elsie patience ross kamden patience chaya stella helen skyla skyla yamilet hassan yusuf  
chaya dangelo kamden helen sullivan elsie jeramiah corey kaylie tommy thomas skyla sullivan  
sullivan ross jasiah jeramiah yamilet corey patience yusuf skyla kamden kaylie sullivan yusuf  
patience madalyn corey skyla helen patience chaya skyla corey madalyn stella patience tommy  
ross madalyn helen stella tommy hassan jeramiah helen helen tommy hassan stella chaya corey  
kamden madalyn jasiah helen kaylie hassan tommy yusuf madalyn jasiah kamden patience he-  
len sullivan madalyn jeramiah stella corey elsie tommy madalyn madalyn ross sullivan mada-  
lyn yusuf dangelo kamden chaya helen jeramiah elsie dangelo kamden dangelo thomas jasiah  
stella patience jasiah yamilet corey elsie jeramiah jasiah yusuf skyla corey thomas kaylie mada-  
lyn jasiah stella yusuf ross corey patience chaya corey corey madalyn patience hassan skyla  
madalyn kamden hassan yusuf helen dangelo helen yamilet elsie elsie yamilet thomas yusuf  
madalyn elsie kaylie jeramiah hassan kamden ross ross dangelo skyla hassan helen jeramiah  
skyla madalyn hassan patience madalyn kamden elsie yusuf thomas tommy thomas jeramiah  
chaya skyla patience thomas kaylie skyla stella sullivan skyla yamilet dangelo kamden jasiah  
dangelo madalyn hassan helen helen jeramiah skyla ross madalyn thomas sullivan sullivan  
kaylie sullivan tommy jeramiah chaya thomas tommy stella skyla yamilet yusuf elsie patience  
sullivan jeramiah dangelo stella elsie ross dangelo corey tommy helen ross hassan elsie sullivan  
madalyn hassan chaya sullivan sullivan ross patience ross chaya kaylie thomas yusuf yamilet  
hassan kaylie chaya

## Four Groups

### Part 1 of 4 (125 words)

ross yusuf yusuf helen chaya corey corey chaya chaya yusuf dangelo stella sullivan madalyn  
patience patience thomas thomas sullivan skyla kaylie dangelo elsie yusuf jeramiah yusuf kaylie  
chaya madalyn ross hassan skyla corey ross kamden helen hassan jeramiah yusuf ross kaylie  
chaya yamilet elsie hassan sullivan patience stella yamilet hassan ross stella kamden elsie kaylie  
kamden stella skyla elsie kaylie corey yusuf chaya hassan yusuf skyla tommy skyla madalyn  
corey yamilet kaylie jasiah chaya madalyn kaylie kaylie dangelo kamden thomas kaylie dangelo  
sullivan jeramiah tommy patience hassan madalyn corey skyla tommy elsie ross sullivan skyla  
yamilet corey yamilet jeramiah tommy corey kaylie jeramiah ross tommy stella skyla sullivan  
sullivan chaya yusuf chaya ross hassan hassan yusuf yamilet stella jasiah chaya tommy chaya  
yusuf skyla yusuf



**Part 2 of 4 (125 words)**

hassan hassan stella yamilet thomas kamden helen elsie ross patience stella skyla yamilet  
yusuf dangelo helen elsie corey tommy skyla sullivan jasiah yamilet patience skyla kaylie yusuf  
madalyn skyla patience skyla madalyn patience ross helen tommy jeramiah helen hassan chaya  
kamden jasiah kaylie tommy madalyn kamden helen madalyn stella elsie madalyn ross madalyn  
dangelo chaya jeramiah dangelo dangelo jasiah patience yamilet elsie jasiah skyla thomas  
madalyn stella ross patience corey madalyn hassan madalyn hassan helen helen elsie yamilet  
yusuf elsie jeramiah kamden ross skyla helen skyla hassan madalyn elsie thomas thomas chaya  
patience kaylie stella skyla dangelo jasiah madalyn helen jeramiah ross thomas sullivan sullivan  
jeramiah thomas stella yamilet elsie sullivan dangelo elsie dangelo tommy ross elsie madalyn  
chaya sullivan patience chaya thomas yamilet kaylie

**Part 3 of 4 (125 words)**

stella chaya sullivan skyla yamilet yamilet kamden hassan elsie helen dangelo kaylie jeramiah  
skyla elsie ross stella skyla corey ross sullivan patience sullivan skyla hassan ross dangelo  
kamden helen jeramiah corey sullivan hassan dangelo thomas stella yusuf stella dangelo dangelo  
chaya yusuf elsie patience corey sullivan sullivan hassan stella patience jasiah jasiah madalyn  
tommy kamden thomas yusuf kamden chaya yamilet chaya thomas ross kaylie skyla chaya  
skyla skyla skyla dangelo kamden kaylie dangelo corey dangelo thomas ross jasiah chaya stella  
yamilet kamden tommy dangelo skyla ross thomas stella jeramiah madalyn kaylie tommy  
jasiah tommy chaya jeramiah yamilet skyla thomas skyla yusuf stella stella kamden jeramiah  
yamilet patience dangelo skyla stella skyla hassan corey chaya elsie kamden patience tommy  
hassan kamden yamilet tommy chaya madalyn elsie

**Part 4 of 4 (125 words)**

thomas yusuf tommy jeramiah stella kaylie thomas patience kamden chaya helen skyla hassan chaya kamden sullivan jeramiah kaylie thomas sullivan ross jeramiah corey yusuf kamden sullivan patience corey helen chaya corey stella tommy madalyn stella hassan helen tommy stella corey madalyn helen hassan yusuf jasiah patience sullivan jeramiah corey tommy madalyn sullivan yusuf kamden helen elsie kamden thomas stella jasiah corey jeramiah yusuf corey kaylie jasiah yusuf corey chaya corey patience skyla kamden yusuf dangelo yamilet elsie thomas madalyn kaylie hassan ross dangelo hassan jeramiah madalyn patience kamden yusuf tommy jeramiah skyla thomas skyla sullivan yamilet kamden dangelo hassan helen skyla madalyn sullivan kaylie tommy chaya tommy skyla yusuf patience jeramiah stella ross corey helen hassan sullivan hassan sullivan ross ross kaylie yusuf hassan chaya

## Five Groups

### Part 1 of 5 (100 words)

ross hassan sullivan jeramiah corey helen hassan kamden dangelo skyla jeramiah chaya patience  
elsie skyla thomas kaylie jasiah sullivan yusuf yusuf yusuf kamden helen hassan madalyn hassan  
madalyn helen jeramiah stella stella kaylie jasiah elsie yusuf sullivan helen hassan corey ross  
ross madalyn kamden kamden dangelo kamden stella corey elsie ross corey skyla stella skyla  
chaya yamilet hassan dangelo yusuf kaylie elsie jasiah madalyn kaylie kamden tommy hassan  
patience hassan stella yusuf tommy chaya jasiah skyla yamilet dangelo skyla hassan corey ross  
stella kaylie stella thomas dangelo yusuf yusuf dangelo corey corey yusuf elsie tommy sullivan  
tommy chaya chaya hassan

**Part 2 of 5 (100 words)**

hassan chaya tommy chaya kamden kamden patience yusuf stella kaylie hassan patience helen stella kaylie skyla sullivan patience corey jeramiah kaylie dangelo corey ross skyla sullivan tommy kamden tommy yusuf tommy ross kamden yusuf hassan hassan kamden sullivan jeramiah hassan madalyn jasia yusuf kaylie jeramiah yusuf thomas kaylie yamilet thomas yusuf yusuf madalyn skyla corey corey madalyn kaylie kamden madalyn helen ross thomas thomas jeramiah kamden dangelo tommy skyla thomas kamden skyla thomas tommy thomas skyla skyla yamilet dangelo tommy jeramiah stella sullivan tommy jeramiah patience skyla chaya sullivan hassan ross hassan ross patience hassan chaya patience tommy yusuf yusuf

**Part 3 of 5 (100 words)**

stella yusuf helen thomas yamilet thomas chaya patience dangelo skyla madalyn dangelo ross  
jeramiah sullivan skyla sullivan jeramiah yusuf skyla ross patience madalyn patience corey  
stella ross helen stella helen yusuf chaya chaya helen elsie madalyn sullivan sullivan yamilet elsie  
jasiah sullivan elsie chaya thomas kamden elsie patience chaya jeramiah hassan thomas chaya  
yusuf madalyn corey kamden skyla chaya helen thomas elsie kamden elsie yamilet ross jeramiah  
helen ross patience corey thomas kaylie skyla sullivan stella jeramiah kamden jeramiah helen  
yusuf madalyn ross sullivan yamilet tommy sullivan elsie skyla stella hassan tommy kamden  
sullivan jasiah sullivan yamilet kaylie skyla kaylie

**Part 4 of 5 (100 words)**

thomas yusuf yamilet yamilet kaylie chaya ross helen helen sullivan yusuf elsie sullivan thomas  
tommy ross ross elsie patience hassan sullivan chaya skyla jeramiah corey corey ross thomas  
hassan jeramiah hassan dangelo madalyn yamilet tommy corey patience stella stella patience  
madalyn kamden dangelo kamden elsie skyla jasiah yamilet corey chaya skyla skyla jasiah  
skyla patience dangelo patience jasiah hassan dangelo yamilet dangelo yusuf stella hassan  
sullivan skyla skyla madalyn madalyn elsie madalyn jeramiah ross kaylie chaya yamilet yamilet  
madalyn skyla skyla jeramiah sullivan jeramiah chaya sullivan yamilet stella jeramiah ross  
dangelo elsie hassan stella chaya kamden ross yusuf yamilet elsie

**Part 5 of 5 (100 words)**

yusuf stella skyla stella corey elsie elsie chaya stella yamilet skyla kamden thomas corey corey  
sullivan dangelo yamilet skyla kamden kaylie madalyn helen chaya skyla patience dangelo  
stella hassan helen dangelo corey chaya kaylie patience jasiah patience madalyn stella tommy  
stella madalyn tommy helen stella dangelo chaya jasiah yusuf jasiah kaylie kaylie tommy ross  
skyla corey kaylie madalyn corey dangelo kaylie yamilet chaya kaylie dangelo ross dangelo  
jeramiah hassan madalyn jeramiah tommy elsie patience tommy sullivan corey jasiah thomas  
helen kaylie thomas kamden tommy skyla stella skyla patience chaya elsie chaya helen yamilet  
madalyn hassan ross chaya thomas madalyn chaya



## Ten Groups

### Part 1 of 10 (50 words)

ross sullivan corey hassan dangelo jeramiah patience skyla kaylie sullivan yusuf kamden hassan  
hassan helen stella kaylie elsie sullivan hassan ross madalyn kamden kamden corey ross skyla  
skyla yamilet dangelo kaylie jasiah kaylie tommy patience stella tommy jasiah yamilet skyla  
corey stella stella dangelo yusuf corey yusuf tommy tommy chaya

**Part 2 of 10 (50 words)**

hassan tommy kamden patience stella hassan helen kaylie sullivan corey kaylie corey skyla  
tommy tommy tommy kamden hassan kamden jeramiah madalyn yusuf jeramiah thomas  
yamilet yusuf madalyn corey madalyn kamden helen thomas jeramiah dangelo skyla kam-  
den thomas thomas skyla dangelo jeramiah sullivan jeramiah skyla sullivan ross ross hassan  
patience yusuf

**Part 3 of 10 (50 words)**

stella helen yamilet chaya dangelo madalyn ross sullivan sullivan yusuf ross madalyn corey ross  
stella yusuf chaya elsie sullivan yamilet jasiah elsie thomas elsie chaya hassan chaya madalyn  
kamden chaya thomas kamden yamilet jeramiah ross corey kaylie sullivan jeramiah jeramiah  
yusuf ross yamilet sullivan skyla hassan kamden jasiah yamilet skyla

**Part 4 of 10 (50 words)**

thomas yamilet kaylie ross helen yusuf sullivan tommy ross patience sullivan skyla corey ross  
hassan hassan madalyn tommy patience stella madalyn dangelo elsie jasiah corey skyla jasiah  
patience patience hassan yamilet yusuf hassan skyla madalyn elsie jeramiah kaylie yamilet  
madalyn skyla sullivan chaya yamilet jeramiah dangelo hassan chaya ross yamilet

**Part 5 of 10 (50 words)**

yusuf skyla corey elsie stella skyla thomas corey dangelo skyla kaylie helen skyla dangelo hassan dangelo chaya patience patience stella stella tommy stella chaya yusuf kaylie tommy skyla kaylie corey kaylie chaya dangelo dangelo hassan jeramiah elsie tommy corey thomas kaylie kamden skyla skyla chaya chaya yamilet hassan chaya madalyn

**Part 6 of 10 (50 words)**

hassan jeramiah helen kamden skyla chaya elsie thomas jasiah yusuf yusuf helen madalyn  
madalyn jeramiah stella jasiah yusuf helen corey ross kamden dangelo stella elsie corey stella  
chaya hassan yusuf elsie madalyn kamden hassan hassan yusuf chaya skyla dangelo hassan  
ross kaylie thomas yusuf dangelo corey elsie sullivan chaya hassan

**Part 7 of 10 (50 words)**

chaya chaya kamden yusuf kaylie patience stella skyla patience jeramiah dangelo ross sullivan  
kamden yusuf ross yusuf hassan sullivan hassan jasiah kaylie yusuf kaylie thomas yusuf skyla  
corey kaylie madalyn ross thomas kamden tommy thomas skyla tommy skyla yamilet tommy  
stella tommy patience chaya hassan hassan patience chaya tommy yusuf

**Part 8 of 10 (50 words)**

yusuf thomas thomas patience skyla dangelo jeramiah skyla jeramiah skyla patience patience  
stella helen helen chaya helen madalyn sullivan elsie sullivan chaya kamden patience jeramiah  
thomas yusuf corey skyla helen elsie elsie ross helen patience thomas skyla stella kamden helen  
madalyn sullivan tommy elsie stella tommy sullivan sullivan kaylie kaylie



**Part 9 of 10 (50 words)**

yusuf yamilet chaya helen sullivan elsie thomas ross elsie hassan chaya jeramiah corey thomas  
jeramiah dangelo yamilet corey stella patience kamden kamden skyla yamilet chaya skyla skyla  
dangelo jasiah dangelo dangelo stella sullivan skyla madalyn madalyn ross chaya yamilet skyla  
jeramiah jeramiah sullivan stella ross elsie stella kamden yusuf elsie

**Part 10 of 10 (50 words)**

stella stella elsie chaya yamilet kamden corey sullivan yamilet kamden madalyn chaya patience  
stella helen corey kaylie jasiah madalyn tommy madalyn helen dangelo jasiah jasiah kaylie ross  
corey madalyn dangelo yamilet kaylie ross jeramiah madalyn tommy patience sullivan jasiah  
helen thomas tommy stella patience elsie helen madalyn ross thomas chaya

## Twenty Groups

### Part 1 of 20 (25 words)

ross corey dangelo patience kaylie yusuf hassan helen kaylie sullivan ross kamden corey skyla  
yamilet kaylie kaylie patience tommy yamilet corey stella yusuf yusuf tommy

**Part 2 of 20 (25 words)**

hassan kamden stella helen sullivan kaylie skyla tommy kamden kamden madalyn jeramiah  
yamilet madalyn madalyn helen jeramiah skyla thomas skyla jeramiah jeramiah sullivan ross  
patience

**Part 3 of 20 (25 words)**

stella yamilet dangelo ross sullivan ross corey stella chaya sullivan jasiah thomas chaya chaya  
kamden thomas yamilet ross kaylie jeramiah yusuf yamilet skyla kamden yamilet

**Part 4 of 20 (25 words)**

thomas kaylie helen sullivan ross sullivan corey hassan madalyn patience madalyn elsie corey  
jasiah patience yamilet hassan madalyn jeramiah yamilet skyla chaya jeramiah hassan ross

**Part 5 of 20 (25 words)**

yusuf corey stella thomas dangelo kaylie skyla hassan chaya patience stella stella yusuf tommy  
kaylie kaylie dangelo hassan elsie corey kaylie skyla chaya yamilet chaya

**Part 6 of 20 (25 words)**

hassan helen skyla elsie jasiah yusuf madalyn jeramiah jasiah helen ross dangelo elsie stella  
hassan elsie kamden hassan chaya dangelo ross thomas dangelo elsie chaya



**Part 7 of 20 (25 words)**

chaya kamden kaylie stella patience dangelo sullivan yusuf yusuf sullivan jasiah yusuf thomas  
skylar kaylie ross kamden thomas tommy yamilet stella patience hassan patience tommy

**Part 8 of 20 (25 words)**

yusuf thomas skyla jeramiah jeramiah patience stella helen helen sullivan sullivan kamden  
jeramiah yusuf skyla elsie ross patience skyla kamden madalyn tommy stella sullivan kaylie

**Part 9 of 20 (25 words)**

yusuf chaya sullivan thomas elsie chaya corey jeramiah yamilet stella kamden skyla chaya skyla  
jasiah dangelo sullivan madalyn ross yamilet jeramiah sullivan ross stella yusuf

**Part 10 of 20 (25 words)**

stella elsie yamilet corey yamilet madalyn patience helen kaylie madalyn madalyn dangelo  
jasiah ross madalyn yamilet ross madalyn patience jasiah thomas stella elsie madalyn thomas

**Part 11 of 20 (25 words)**

sullivan hassan jeramiah skyla sullivan kamden hassan stella elsie hassan madalyn kamden  
ross skyla dangelo jasiah tommy stella jasiah skyla stella dangelo corey tommy chaya

**Part 12 of 20 (25 words)**

tommy patience hassan kaylie corey corey tommy tommy hassan jeramiah yusuf thomas yusuf  
corey kamden thomas dangelo kamden thomas dangelo sullivan skyla ross hassan yusuf

**Part 13 of 20 (25 words)**

helen chaya madalyn sullivan yusuf madalyn ross yusuf elsie yamilet elsie elsie hassan madalyn  
chaya kamden jeramiah corey sullivan jeramiah ross sullivan hassan jasiah skyla

**Part 14 of 20 (25 words)**

yamilet ross yusuf tommy patience skyla ross hassan tommy stella dangelo jasiah skyla patience  
hassan yusuf skyla elsie kaylie madalyn sullivan yamilet dangelo chaya yamilet



**Part 15 of 20 (25 words)**

skylar elsie skylar corey skylar helen dangelo dangelo patience stella tommy chaya kaylie skylar  
corey chaya dangelo jeramiah tommy thomas kamden skylar chaya hassan madalyn

**Part 16 of 20 (25 words)**

jeramiah kamden chaya thomas yusuf helen madalyn stella yusuf corey kamden stella corey  
chaya yusuf madalyn hassan yusuf skyla hassan kaylie yusuf corey sullivan hassan

**Part 17 of 20 (25 words)**

chaya yusuf patience skyla jeramiah ross kamden ross hassan hassan kaylie kaylie yusuf corey  
madalyn thomas tommy skyla skyla tommy tommy chaya hassan chaya yusuf

**Part 18 of 20 (25 words)**

thomas patience dangelo skyla skyla patience helen chaya madalyn elsie chaya patience thomas  
corey helen elsie helen thomas stella helen sullivan elsie tommy sullivan kaylie

**Part 19 of 20 (25 words)**

yamilet helen elsie ross hassan jeramiah thomas dangelo corey patience kamden yamilet skyla  
dangelo dangelo stella skyla madalyn chaya skyla jeramiah stella elsie kamden elsie

**Part 20 of 20 (25 words)**

stella chaya kamden sullivan kamden chaya stella corey jasiah tommy helen jasiah kaylie corey  
dangelo kaylie jeramiah tommy sullivan helen tommy patience helen ross chaya