





$n = \text{number of samples}$

$n = \frac{(\text{time vector})}{50} \text{ in 50 windows for time vector}$

→ for loop will go to each window

2 - ʊ	<u>book</u>	0-38 Hz	yellow
3 - ʌ	<u>too</u>	0-57 Hz	yellow-ish
4 - ɪə	<u>here</u>	-12-12 Hz	
5 - eɪ	<u>day</u>		
6 - e	<u>men</u>		
7 - ə	<u>America</u>		
8 - ɔ:	<u>word</u>		
9 - ɔ:	<u>sort</u>		
10 - ʊə	<u>tour</u>		
11 - ɔɪ	<u>boy</u>		
12 - əʊ	<u>go</u>		
13 - ə	<u>cat</u>		
14 - ʌ	<u>but</u>		
15 - a:	<u>part</u>		
16 - ɒ	<u>not</u>		
17 - eə	<u>wear</u>		
18 - aɪ	<u>my</u>		
19 - əʊ	<u>how</u>		

My voice

Reedo

2 - ʊ	<u>book</u>	12 - 57 Hz	
3 - ʊ:	<u>too</u>	12 - 68 Hz	yellowish
4 - ɪə	<u>here</u>	12 - 59 Hz	yellowish
5 - eɪ	<u>day</u>	35 - 82 Hz	yellow
6 - e	<u>men</u>	58.6 - 82 Hz	yellow
7 - ə	<u>America</u>		175.78 Hz - 199 Hz Blue
8 - ɜ:	<u>word</u>		
9 - ɔ:	<u>sort</u>		
10 - ʊə	<u>tour</u>		
11 - ɔɪ	<u>boy</u>		
12 - əʊ	<u>go</u>		
13 - ə	<u>ca+</u>		
14 - ʌ	<u>bu+</u>		
15 - ə:	<u>part</u>		
16 - ə	<u>not</u>		
17 - eə	<u>wear</u>		
18 - aɪ	<u>my</u>		
19 - aʊ	<u>how</u>		



$$N_{FFT} = 2^{16}$$

2 - ʊ	<u>book</u>	156 - 405 Hz (yellow none yellow)
3 - ʌ	<u>too</u>	139 - 440 Hz (starting end of Decay) and 170 - 276 Hz (end of Decay) yellow greenish
4 - ɪ	<u>here</u>	112 - 162 Hz greenish and 227 - 292 Hz yellow and 344 - 399 Hz greenish and 448 - 511 Hz greenish
5 - eɪ	<u>day</u>	435 - 513 Hz yellow
6 - e	<u>men</u>	557 - 596 Hz yellowish and 637 - 703 Hz greenish
7 - ə	<u>America</u>	545 - 598 Hz yellow or 536 - 603 Hz yellow-green
8 - ɔ:	<u>word</u>	461 - 537 Hz yellowish
9 - ɔ:	<u>sort</u>	425 - 465 Hz yellow
10 - ʊə	<u>tour</u>	293 - 364 Hz yellow
11 - ɔɪ	<u>boy</u>	392 - 440 Hz yellow and 448 - 494 Hz greenish
12 - əʊ	<u>go</u>	453 - 507 Hz greenish
13 - əə	<u>cat</u>	755 - 881 Hz yellow (heavy curvature) and 1464 - 1576 Hz greenish
14 - ʌ	<u>but</u>	480 - 619 Hz yellow
15 - a:	<u>part</u>	508 - 547 Hz greenish
16 - ɒ	<u>not</u>	482 - 533 Hz yellow and 540 - 662 Hz yellow Or 487 - 653 Hz yellowish
17 - eə	<u>wear</u>	498 - 572 Hz light green and 545 - 614 Hz light green
18 - aɪ	<u>my</u>	223 - 260 Hz skyblue and 567 - 624 Hz green and 1090 - 1139 Hz greenish 707 - 754 Hz skyblue
19 - aʊ	<u>how</u>	533 - 593 Hz yellow-greenish and 706 - 752 Hz yellowish

## Vowels

Phoneme	IPA Symbol	Graphemes	Examples
25	æ	a, ai, au	cat, plaid, laugh
26	eɪ	a, ai, eigh, aigh, ay, er, et, ei, au, a_e, ea, ey	bay, maid, weigh, straight, pay, foyer, filet, eight, gauge, mate, break, they
27	e	e, ea, u, ie, ai, a, eo, ei, ae	end, bread, bury, friend, said, many, leopard, heifer, aesthetic
28	i:	e, ee, ea, y, ey, oe, ie, i, ei, eo, ay	be, bee, meat, lady, key, phoenix, grief, ski, deceive, people, quay
29	ɪ	i, e, o, u, ui, y, ie	it, england, women, busy, guild, gym, sieve
30	aɪ	i, y, igh, ie, uy, ye, ai, is, eigh, i_e	spider, sky, night, pie, guy, stye, aisle, island, height, kite
31	ə	a, ho, au, aw, ough	swan, honest, maul, slaw, fought
32	əʊ	o, oa, o_e, oe, ow, ough, eau, oo, ew	open, moat, bone, toe, sow, dough, beau, brooch, sew
33	ʊ	o, oo, u, ou	wolf, look, bush, would
34	ʌ	u, ə, oo, ou	lug, monkey, blood, double
35	ʊ:	o, oo, ew, ue, u_e, oe, ough, ui, oew, ou	who, loon, dew, blue, flute, shoe, through, fruit, manoeuvre, group
36	ɔɪ	oi, oy, uoy	join, boy, buoy
37	aʊ	ow, ou, ough	now, shout, bough
38	ə	a, er, i, ar, our, ur	about, ladder, pencil, dollar, honour, augur
39	eər	air, are, ear, ere, eir, ayer	chair, dare, pear, where, their, prayer
40	ɑ:	a	arm
41	ɔ:r	ir, er, ur, ear, or, our, yr	bird, term, burn, pearl, word, journey, myrtle
42	ɔ:	aw, a, or, oor, ore, oar, our, augh, ar, ough, au	paw, ball, fork, poor, fore, board, four, taught, war, bought, sauce
43	ɪər	ear, eer, ere, ier	ear, steer, here, tier
44	ʊər	ure, our	cure, tourist