Table 1

	Quick-Click Code	Length	Comments	Researcher Comments	Category
1	• • • • – • • –	8	“Rhythmically it (the code) felt good”, “More muscle memory that remembering”, “It’s intuitive and sensory”	Participant opted for a 7 digit code before being told that 8 was the minimum length.	Earworm
2	• – – – – • • –	8	“Non-predictable pattern - but one you know”,“Encoding binary, fibonacci sequence”	The first code entered was too complicated, so they retried with the new simplified code. The participant also delayed between presses whilst thinking about the code, resulting in the Nokē staying locked. When using the simplified code these problems were solved.	Numerical
3	• • • • • – – • • • • • – – • •	16	“I need to think of a song…”, “All the beats would be short (referring to song beats and Quick-Click Code)”	Code inspired by Johann Strauss “The Blue Danube Waltz”. The participant kept the melody in their head when unlocking the Nokē.	Earworm
4	• • – – • – • •	8	“I’m worried I might forget my code” , “Not too obvious, a mixture between long and short”	The participant commented on finding the balance between the combination being not to simple, but easy to remember. they counted off on their fingers as they created the code.	Pseudo-random
5	• • – • • • • • –	9	“Based off of a song”	Code inspired by Guns N Roses “Paradise City”. When creating their combination, this participant wrote it down on a piece of paper.	Earworm
6	• • – • – • • – • – –	11	“I might not remember my code”, “Unrelated to anything in particular (the code)”, “Uncommon”, “What are the lockout periods between failed attempts?”	This participant mentioned it was a complicated choice of code. There is a notable pattern repetition in the code.	Earworm
7	• • – – – • • – – – • • • • • •	16	“It’s based off of my favourite number - 7, with some added padding”	Initially the participant thought that the code had to be one type of character followed by another, rather than allowing for a mixture of both• This is not clarified by the Nokē application on the screen where you add a new code. The new code was a realisation of this, and represents a much more complicated and secure solution.	Earworm
8	• • – • • • – • • • •	11	“(It’s the same as…) my ham radio repeater beep”	The participant based their Quick-Click combination on the beeping sound from their radio.	Earworm
9	– • • • • • – • • •	10	"It's Bob in morse code”	The participant’s code was based off of morse code, noting the similarities between that and the Quick-Click code. It was the name “Bob” in morse. they explained it was something they would have to look up online to remember how to encode.	Morse
10	– • – • • – – • • • •	11	“When entering the code, I picture the song in my head”	The participant based their code off of song lyrics from “Toxicity” by System of a Down.	Earworm
11	– • – • • – • – • •	10	“It follows a rhythm pattern of 1-2-1-2-3”	This participant based their Quick-Click code on a rhythmic pattern.	Earworm
12	• • • • • – – – – – • – • – •	15	“A long code is better than a short code”, “Do I have to remember it?”, “5 short, 5 long, and then a mixture”	This participant used slow shackle taps to avoid making errors when putting in the code. It followed a simple pattern of a stream of shorts and longs, and then a mixture of the two in a symmetrical pattern.	Numerical
13	• – – – • • • •	8	“It's Jess in morse code”	The participant designed their code after recognising the similarity between the Quick-Click code and morse code. To make it memorable, they encoded their wife’s name “Jess” as their combination.	Morse
14	• • • – • • • –	8	“It's easy to do and to remember”	This participant chose a simple and easy to remember code, which follows a repeated rhythmic pattern of three dots and a dash.	Earworm
15	• • • – • • • • – • • • •	11	“My favourite number is 3”, “….patterns of 3 broken up by the longer dash”	This participant created a pattern based upon a repetition of their favourite number.	Numerical
16	• – – • • • – – – –	10	“8 is easier for me to remember”	This participant based their pattern off of encoding consecutive numbers in a 1-2-3-4 sequence, alternating between the shackle press types.	Numerical
17	• • – • • – • • •	9	“Easy to remember”	This participant’s pattern used repetition of a pattern of 3. This made their code easy to remember, but more complex as the pattern is repeated twice and then changes.	Numerical
18	• • • – • • • –	8	"I picked a pattern that is easy to remember”, “It’s hard to see in the light”	This participant chose a code based on an easy to remember pattern - a pattern of three short presses separated by a long press.	Earworm
19	• • • – – – – –	8	"Sequence of shorts followed by longs”, “I chose three [presses] and then padded the remainder with long presses”	This participant chose a simple pattern of streaming short presses and long presses. This fulfilled the minimum length of 8, and was easy to remember.	Numerical

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20	• – – – – – – – – • • • • • •	16	“The year I was born”, “It was memorable even if I couldn't put the 4 in”, “Long short long short”	This participant encoded their birth year (1964) into the code,using consecutive shackle press lengths to signify the start and ends of numbers. Due to the length of the code, it isn’t possible to encode the final digit.	Numerical
21	• • • • • • • • –	9	“At first I tried to think of a song”, “But then I chose to do 8 short and 1 long out of simplicity”	This participant first considered encoding a song into their quick click code, but opted for a simple code.	Numerical
22	– – – • – – – • • – – –	12	“I used a visual pattern”	This participant used a memorable visual repeated pattern of three short presses separated with a long press, with a slight change at the end.	Earworm
23	– – – – • • – – – – • • – – – –	16	“I chose a longer code than patterns of three”	This participant used a repeated pattern of 4, in which 4 long presses were separated by 2 short presses.	Numerical
24	• • • • • – • • •	9	"I just set my code and tried to remember what I chose”	The participant chose a code supposedly on a pseudorandom basis - keeping it short at a length of 9, and splitting it into segments with a long press in the 6th position.	Pseudo-random
25	• • – • • – – • •	9	“Just to mix up the pattern”, “Similar to mixing numbers into words with passwords”, “I would use morse code”, “Half of it is a pattern”, “Easily memorable dot dot dash repetition”	This participant used a simple dot dot dash pattern which they repeated. To mix up the code and make it harder for people to guess, they changed it slightly at the end by reversing the pattern (- • •). they justifies this as being easy to remember, yet more secure than, for example repeating the pattern again.	Earworm
26	• • • • – – – • • • •	11	"It was a vibration style of an early phone.”, “Nokia Slide phone ring vibration”	This participant focused their Quick Click combination around the vibrate pattern of an early Nokia phone they owned. This made their code memorable to him.	Earworm
27	• – – • • • – – – – • • • • •	15	“A simple to remember pattern. Builds from a count of one to five, alternating `click’ / `hold”	This participant alternated long and short presses with a number sequence counting from 1 to 5.	Numerical
28	– – • – • – – – – • – • – • • •	16	“I memorised the long presses as a pin code”, “I randomised the way the pattern was generated”, “I can memorise this as ‘2-1-4-1-1’”	This participant tossed a coin for each press of the code - the two sides corresponding to a long or a short press. In this way, the code was pseudorandomised. The participant then memorised the pattern of consecutive long presses as separated by the short presses, making it easier to remember as a number code rather than a sequence of presses. they rationalised that this would be easier to recall for long term use.	Numerical
29	• • • – • • – –	8	“Easy to remember”, “Longs are quite annoying”, “I might forget it”.	As they developed the code, the participant annunciated each press out loud. they found the code hard to remember and so they opted for a short length of 8.	Pseudo-random
30	• – – • – • – • • • –	11	“It's a phrase in binary”, “It’s from a game that I will always remember”	This participant based their code off of a binary phrase which they encountered in a video game they played. As they developed their code, they counted out on their fingers.	Numerical
31	– – • – • • – – – • – • – –	15	“I wanted to make it long and complex but with some structure”	This participant created a randomised code designed to be complex and hard to guess. It features a mirrored pattern, as the first seven presses are mirrored to create the last 7, and separated in the middle by a long press.	Pseudo-random
32	• • • – – – • • • – – – • •	14	“It is based on S-O-S in Morse code so is memorable, but slightly longer for most security, and not to be as obvious”	This participant code featured an extension of the “S-O-S” morse code, with additional patterns to strengthen security	Morse
33	– – – – – • • •	8	“Easy to remember”	This participant chose an easy to remember code, featuring 5 longs followed by 3 shorts.	Pseudo-random
34	• – • • – • • –	8	“Easy to remember, quick to do”	This participant's code featured a rhythmic pattern of shorts and longs.	Earworm
35	– • – • – • – •	8	“I had 3 hours of sleep last night”	This participant code uses a repeated structural pattern of dashed followed by dots.	Earworm
36	• • – – – • • –	8	“Simplicity and easy of access code is memorable to user, not too long and similar to other password”	This participant uses a somewhat unstructured pattern of shorts and longs.	Pseudo-random
37	• • • • • • • –	8	“Easy to remember.”	This participant used arguably the most basic code which fits the quick click constraints, making it very easily to remember and input.	Pseudo-random
38	• – • – • – • – •	9	“Simple, starts and finishes with the same symbol”	This participant code uses a mirrored pattern of dots and dashes.	Earworm
39	• – – • – – • – –	9	“The code was repetitive so easy to remember, was quick and easy to do”	This code utilised a rhythmic triplet pattern which was repeated twice.	Earworm

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40		9	“Mainly done as a trial, so the combination doesn't seem complicated. However, after testing the combination, I believe that the app is pretty secure, as using your phone to unlock is useful”	This participant used a seemingly arbitrary pattern of longs and shorts.	Pseudo-random
41		9	“Vibration pattern of phone”	This code used the common vibration pattern of a mobile phone.	Earworm
42		9	“I chose the code because I just felt like the pattern was right and it seemed easy to remember”	Not having any particular discernible structure, this code was cited as being easy to remember as well as being easily usable.	Pseudo-random
43		10	“It is easy to remember”	This code uses a series of shorts and longs, followed by 2 shorts. Whilst there could be an identifiable repeated sequence, it isn’t explicitly stated.	Pseudo-random
44		11	“Repetition with slight variation. Easier to remember”	This code used the rhythmic pattern of two longs followed by a series of shorts in a 2-1-2 sequence.	Earworm
45		11	“Ease of remembrance, rhythmic pattern”	This code followed a repeated rhythmic pattern of two longs followed by a short.	Earworm
46		11	“Random sequence”	The participant described this code as being a random sequence, but upon inspection it possibly has a pattern of “1, 2, 3” followed by alternative long and short presses.	Pseudo-random
47		11	“High length to take longer to break”	The participant chose this code based on its security aspects, stating that the length aspect attributed to it being hard to guess by attackers.	Pseudo-random
48		11	“No real rationale, just wanted something that I thought would be easy for me to remember but that I didn’t think would be easy to guess”	The participant chose this code based on its security aspects, stating that the length aspect attributed to it being hard to guess by attackers, but at the same time being memorable to them.	Pseudo-random
49		12	“The reason for the choice of code was it was very easy and simple to remember the code. I want the code to be quite long, however not too long as it would be quite painful to remember. By having a pattern it allowed me to remember the code.”	This code used a structural repetition pattern featuring two presses of both long and short, followed by four presses of each.	Earworm
50		12	“Easy to remember, long enough to be secure but could be guessable - memorable for the short time given to create it.”	This code featured a mirrored pattern of shorts and longs, in which the start and end symbol were mirrored, and contained a long-short long-short pattern.	Earworm
51		12	“I needed something that I could remember easily.”	This pattern followed a rhythmic cue of 2-1-1-2-3-3 arranged in a sequence.	Earworm
52		12	“Easy to remember (Remember only • • pattern, constant separator). Sequence 1, 3, 2”	This participant used a numerical pattern in which they encoded the numbers ‘1, 3, 2’ as shorts, which were then separated by longs.	Numerical
53		8	“It's the SOS code sequence I think”	This code featured a different interpretation of the S-O-S morse code.	Morse
54		9	“I think it’s the way to say `SOS’ in morse"	This participant utilised the correct variation of the S-O-S morse code	Morse
55		9	“Used my full name and syllables in it. So last syllable in each name is a long one, rest are short ”	The participant encoded their first and surname syllables by alternating between short and long presses.	Name substitution
56		9	“Easy to remember”	This code used a simple repeated triplet sequence of two shorts followed by a long.	Earworm
57		11	“Easily remembered”	Whilst a pattern here is not explicitly stated, this could have a pattern of 2-3-2-4 of long and shorts. The participant did not indicate choice of a pattern.	Pseudo-random
58		10	“Easy to remember and not too long to input the code”	This participant used a structured pattern of two consecutive sequences of four shorts, as separated by two longs in the middle.	Earworm
59		10	“Easy to remember pattern”	There is a clear encoding of “1-2-3-4” in alternate shackle presses in this pattern.	Numerical
60		15	“Long code, easy to remember, pattern 2, 1, 3 long dashes”	This participant used a numerical pattern in which they encoded the numbers ‘2, 1, 3’ as long presses, which were then separated by sequences of 3 shorts.	Numerical
61		8	“Logical and easy to remember”	This participant code uses a repeated pattern of dots and dashes in a sequence.	Earworm
62		14	“Picked a memorable number ‘1337’ and linked code pattern to this”	This participant encoded a number by using alternating shackle presses of short and long.	Numerical
63		12	“Something different, the more random the better”	This participant used a structured pattern of two consecutive sequences of five shorts, as separated by two longs in the middle.	Earworm

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64		10	“Easy to remember and follows a pattern”	This code featured a repeated 3-2, 3-2 pattern primarily consisting of long presses.	Earworm
65		12	“Easy pattern to remember”	This code featured a rhythm which was separated into 3 blocks of four beats, each separated by a long beat.	Earworm
66		9	“Visually easy to remember”	This participant used a visual and rhythmic cue in their repeated pattern	Earworm
67		12	“3 -> 1 and 1 -> 3: Short 3, long 1, short 2, long 2, short 1, long 3”	This participant encoded an alternate counting sequence, in which they counted down from 3 in short presses, and alternated by counting up from 1 in long presses.	Numerical
68		8	“3 is my favourite number and since they are less I thought i’d make them the long ones. Then used 5 (to make 8, wanted it as short as possible) made them short.”	This participant encoded their favourite number 3 as long presses, and added additional padding until the code was of the minimum length of 8.	Numerical
69		9	“Simple to remember”	This code uses a clear rhythmic pattern in a 2-3-2 pattern of shorts.	Earworm
70		13	“Easy to remember, and quite long to be more secure”	The participant has not stated to be using a pattern here, suggesting the code is randomly selected. However, it is possible that there is a 3-3-3-4 structure here, similar to a simple pin code.	Pseudo-random
71		9	“Easy pattern for me to remember but for someone else it would be difficult to crack”	This participant used the pattern based on it being easily memorable, but difficult to crack. Whilst there is no clear pattern, it is a possible encoding of a pin number, or other familiar digit based code.	Pseudo-random
72		9	“Just a random pattern - AND it’s SOS which is the only morse code I know”	As the only morse code the participant knows, they encoded it as a series of longs and shorts	Morse
73		16	“Easy to remember, Computer Science student”	This student encoded a binary counting code, as the full 16 length is split into sets of 4 bits, where the binary numbers for 1, 2, 3, 4 are encoded, with a dash representing the set bits, and a dot for unset bits.	Numerical
74		8	“The code was the minimum length, also a memorable combination”	This code used a simplistic and repeated rhythmic cue of 3 shorts followed by a long.	Earworm
75		10	“Easy to remember, short/easy to input”	This participant used the pattern based on it being easily memorable, but difficult to crack. Whilst there is no distinct pattern, it is a possible encoding of a pin number, or other familiar digit based code.	Pseudo-random
76		10	“Random repeating pattern”	This participant code, which was cited as being ‘random’ is clearly following a repeated structure, which is rhythmic in nature.	Earworm
77		9	“Easy to remember yet long enough and wide variety to be safe”	This participant chose their code on the basis that it was safe and secure in terms of length. There is a repeated rhythmic structure present.	Earworm
78		9	“SOS morse code - easy, simple to remember”	This participant came up with a reverse interpretation of the S-O-S morse code, in which they substituted long presses for short presses.	Morse
79		10	“Had a tune in my head, of drums being played like this”	This participant cited the sounds of drums as being the inspiration behind their code.	Earworm
80		9	“Simple to remember and feels like it is secured enough”	The participant based their code off of what they felt was secure, and easy to remember. There is no clear pattern.	Pseudo-random
81		10	“Random pattern, should remember it after a few uses”	This participant cited their pattern as being “random” and remembered after a few uses. This suggests it isn’t necessarily based on external knowledge such as a number etc.	Pseudo-random
82		9	“The code correlated with a tune in my head I could remember”	This code was mentioned as being correlated to a tune in the participant’s head, which made it easy to remember for them.	Earworm
83		8	“Easy to remember - sequence/pattern”	This participant stated that this code involved a repeated rhythmic sequence of two longs and two shorts.	Earworm
84		8	"Easy to remember"	This participant used a repeated structure of shorts and longs to encode their rhythmic pattern.	Earworm
85		11	“Easy to remember, Encoding of first and last names vowels and consonants with alternate presses”	This participant encoded their name’s vowels and consonants using alternative quick click presses.	Name substitution

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86	• • – – • – • •	8	“Hard to remember long strings, especially since it isn’t something `natural’”	This participant mentioned that it is difficult to remember long codes as it is ‘unnatural’. Resultantly their code was kept short.	Pseudo-random
87	• – • – • – • –	8	“Easily memorable”	This code featured a simple repeated pattern of long-short-long-short, which made it easy to remember and broke up the structure.	Earworm
88	• • • – – – • •	8	“Like S-O-S just without 1 code”	This participant created a shorter version of the S-O-S morse code, in which they omitted the final short press of the code.	Morse
89	• • • • • • • –	8	“Quick and easy to remember”	This participant used a basic code which fits the quick click constraints, making it very easily remembered by users.	Pseudo-random
90	• • • – • • • •	8	“Because it is easy to remember and meets the requirements”	This participant cited the quick click code requirements as being the benchmark for their code, featuring a simplified 8 length sequence with a single long press, which can maximise speed and usability.	Pseudo-random
91	• • • – – – – – • • •	12	“Easy to remember”	This code featured a split pattern of two consecutive sequences of three shorts, separated by six longs. This is quite a unique code, as it is primarily comprised of longs.	Earworm
92	– • • – • • – • •	9	“Simple, easy to remember”	This code featured a repeated pattern of a long followed by two longs, which was formed in a triplet.	Earworm
93	• • – • • • • • • • –	11	“I used the same rhythm of beats that I use when spelling out my name for formal situations over the hone etc. as it is a pattern I am familiar with and can visualise as I go along”	This participant pictured the rhythmic representation of spelling out their name, which helped them visualise their code.	Earworm
94	• • – • – – • • • – • –	12	“Reasonably long password, chosen because it had a nice rhythm”.	This participant cited their chosen code as having a “nice rhythm” which made it easy to recall whilst being long.	Earworm
95	• • – – • • – –	8	“Easy to remember, quick to think of.”	This code used a repeated pattern of two shorts and two longs in a pattern that was easy to come up with.	Earworm
96	• • – – – • – –	8	“Humans have difficulty with remember long sequences - typically anything more than 7-9…We also have difficulty remembering random patterns…”	This participant stated an awareness of the difficulty in remembering long pieces of information, and so opted for a simple code of length 8. It is not clear whether there is a pattern used here.	Pseudo-random
97	• • • – • • – •	8	“Simplistic and uses a combination of both”	This code used a combination of both long and shorts as per the requirements, and was simplistic, making it easy to remember.	Pseudo-random
98	• • • – – • • –	8	“Simple code, easy to remember”	This participant’s code combined long and short presses and was of the minimum length of 8, making it a simplistic code choice.	Pseudo-random
99	• • • – • • • –	8	“Picked as it was easy to remember”	This participant used a repeated pattern of three shorts followed by a long.	Earworm
100	– – – – • • – • •	9	“It’s the beginning bit to the imperial march.”	This code was inspired by the Star Wars “Imperial March” Theme, which was easily memorable to the participant and so formed the basis of their code.	Earworm