Shiwei Huang Exam Question

Major knees could be seen when:

window size = 18 - 27 delta = 9 page fault rate = 28 page fault = 45

window size = 34 - 47 delta = 13 page fault rate = 56 page fault = 23

window size = 52 - 65 delta = 13 page fault rate = 62 page fault = 21

window size = 70 - 83 delta = 13 page fault rate = 68 page fault = 19

window size = 88 -101 delta = 13 page fault rate = 76 page fault = 17

window size = 106-119 delta = 13 page fault rate = 86 page fault = 15

window size = 124 - 137 delta = 13 page fault rate = 100 page fault = 13

window size = 142 - 155 delta = 13 page fault rate = 118 page fault = 11

window size = 160 - 173 delta = 13 page fault rate = 144 page fault = 9

window size = 178 - 191 delta = 13 page fault rate = 186 page fault = 7

window size = 192 - 200 delta = 13 page fault rate = 217 page fault = 6

Because the window size that gives the same page fault has delta of 13. It is likely that the window just moves from the string of “28272272927222” from one character to the other since the string of “28272272927222” length is 14. To be more specific, it is likely that the string “28272272927222” repeat 10 times which gives a length of 140.  And the repetition string of “28272272927222” is likely in the Working Set. Thus, despite the increase of the window size, page fault rate stays the same.

For the window size ranges from 140 - 200, it is likely that the Working Set include string of “373338393373737333”. Since all the character of “373338393373737333”\*10 Times + string of (3637322)(272733733 + “373338393373737333”\* 9 Times + (3637322)(272733733 + 373338393373737333 \* 8 Times + string of  (3637322)(272733733… that this string is likely in the Working Set as well, thus, increase in window size won’t affect the page fault, thus, won’t affect the page fault rate.

Reference String

272722(ONE:28272272927222)(TWO:28272272927222)(THREE:28272272927222)(FOUR:28272272927222)(FIVE:28272272927222)(SIX:28272272927222)(SEVEN:28272272927222)(EIGHT:28272272927222)(NINE:28272272927222)(TEN:28272272927222)(272722)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(EIGHT:373338393373737333)(NINE:373338393373737333)(TEN:373338393373737333)(3637322)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(EIGHT:373338393373737333)(NINE:373338393373737333)(3637322)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(EIGHT:373338393373737333)(3637322)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(SEVEN:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(SIX:373338393373737333)(3637322)(272733733(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(FIVE:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(FOUR:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(THREE:373338393373737333)(3637322)(272733733)(ONE:373338393373737333)(TWO:373338393373737333)(3637322)(272733733)(ONE:37333839337373733)(33637322)

272722: LENGTH6

28272272927222: LENGTH14

3637322: LENGTH7

272733733: LENGTH9

373338393373737333: LENGTH18