

W2D3 Solution B: Compression inverted index using **Simple-9** method

Inverted index	(964, 17), (1488, 63), (2240, 24), (3168, 32)																															
d-gaps	(964, 17), (524, 63), (752, 24), (928, 32)																															
Binary of d-gaps	964 ≡ 11 1100 0100 17 ≡ 1 0001 524 ≡ 10 0000 1100 63 ≡ 11 1111 752 ≡ 10 1111 0000 24 ≡ 1 1000 928 ≡ 11 1010 0000 32 ≡ 10 0000																															
# of bits required	10, 5, 10, 6, 10, 5, 10, 6																															
Split by Simple-9 table:	<table><tr><td>10</td><td>5</td><td>10</td><td>6</td><td>10</td><td>5</td><td>10</td><td>6</td></tr><tr><td colspan="2">2 numbers, each at most 14 bits</td><td colspan="2">2 numbers, each at most 14 bits</td><td colspan="2">2 numbers, each at most 14 bits</td><td colspan="2">2 numbers, each at most 14 bits</td></tr></table>								10	5	10	6	10	5	10	6	2 numbers, each at most 14 bits		2 numbers, each at most 14 bits		2 numbers, each at most 14 bits		2 numbers, each at most 14 bits									
	10	5	10	6	10	5	10	6																								
2 numbers, each at most 14 bits		2 numbers, each at most 14 bits		2 numbers, each at most 14 bits		2 numbers, each at most 14 bits																										
Generate WORD sequence	<table><tr><td>4 bits</td><td colspan="4">14 bits</td><td colspan="3">14 bits</td></tr><tr><td>0111</td><td colspan="4">00 0011 1100 0100</td><td colspan="3">00 0000 0001 0001</td></tr><tr><td></td><td colspan="4">964 (10 bits)</td><td colspan="3">17 (5 bits)</td></tr></table>								4 bits	14 bits				14 bits			0111	00 0011 1100 0100				00 0000 0001 0001				964 (10 bits)				17 (5 bits)		
	4 bits	14 bits				14 bits																										
	0111	00 0011 1100 0100				00 0000 0001 0001																										
		964 (10 bits)				17 (5 bits)																										
	<table><tr><td>4 bits</td><td colspan="4">14 bits</td><td colspan="3">14 bits</td></tr><tr><td>0111</td><td colspan="4">00 0010 0000 1100</td><td colspan="3">00 0000 0011 1111</td></tr><tr><td></td><td colspan="4">524 (10 bits)</td><td colspan="3">63 (6 bits)</td></tr></table>								4 bits	14 bits				14 bits			0111	00 0010 0000 1100				00 0000 0011 1111				524 (10 bits)				63 (6 bits)		
	4 bits	14 bits				14 bits																										
	0111	00 0010 0000 1100				00 0000 0011 1111																										
		524 (10 bits)				63 (6 bits)																										
	<table><tr><td>4 bits</td><td colspan="4">14 bits</td><td colspan="3">14 bits</td></tr><tr><td>0111</td><td colspan="4">00 0010 1111 0000</td><td colspan="3">00 0000 0001 1000</td></tr><tr><td></td><td colspan="4">752 (10 bits)</td><td colspan="3">24 (5 bits)</td></tr></table>								4 bits	14 bits				14 bits			0111	00 0010 1111 0000				00 0000 0001 1000				752 (10 bits)				24 (5 bits)		
	4 bits	14 bits				14 bits																										
	0111	00 0010 1111 0000				00 0000 0001 1000																										
		752 (10 bits)				24 (5 bits)																										
	<table><tr><td>4 bits</td><td colspan="4">14 bits</td><td colspan="3">14 bits</td></tr><tr><td>0111</td><td colspan="4">00 0011 1010 0000</td><td colspan="3">00 0000 0010 0000</td></tr><tr><td></td><td colspan="4">928 (10 bits)</td><td colspan="3">32 (6 bits)</td></tr></table>								4 bits	14 bits				14 bits			0111	00 0011 1010 0000				00 0000 0010 0000				928 (10 bits)				32 (6 bits)		
	4 bits	14 bits				14 bits																										
	0111	00 0011 1010 0000				00 0000 0010 0000																										
		928 (10 bits)				32 (6 bits)																										
Size after compression:	4 WORDS x 4 Bytes = 16 Bytes																															