Huffman Tree – encode – decode

Text which should be compressed:

hi Hannah

ACHTUNG: Ich schreibe jetzt ein Leerzeichen als Underline '_'

1. **Collect all letters from a text**
   Allocation of 5 h_chars

```
['_', 'a', 'h', 'i', 'n']
  1    2    3    1    2
```

2. **Queue nodes and create a tree**
   - Insertion Sort of nodes

```
['i', '_', 'n', 'a', 'h']
  1    1    2    2    3
```

   Dequeue 2 Elemente + neuer Knoten + Verbindungen

```
   --'i_'--
   |      |
  'i'     '_'
```

   - Enqueue('i_')

```
['i_', 'n', 'a', 'h']
  2     2    2    3
```

   Dequeue 2 Elemente + neuer Knoten + Verbindungen

```
        --'i_n'--
       |         |
    --'i_'--     'n'
   |       |
  'i'     '_'
```

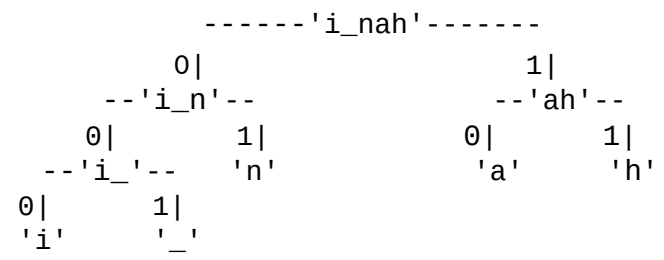
   - Enqueue('i_n')

```
['a', 'h', 'i_n']
  2    3     4
```

   - Dequeue 2 Elemente + neuer Knoten + Verbindungen

```
       --'i_n'--        --'ah--
      |         |      |      |
   --'i_'--    'n'    'a'    'h'
  |       |
 'i'     '_'
```

- Enqueue('ah')
  ['i_n', 'ah']
  4 5
- Dequeue 2 Elemente + neuer Knoten + Verbindungen



10	a
11	h
01	n
000	l
001	_

==> 11101101 (hahn)

==> 111001011011 (hannah)