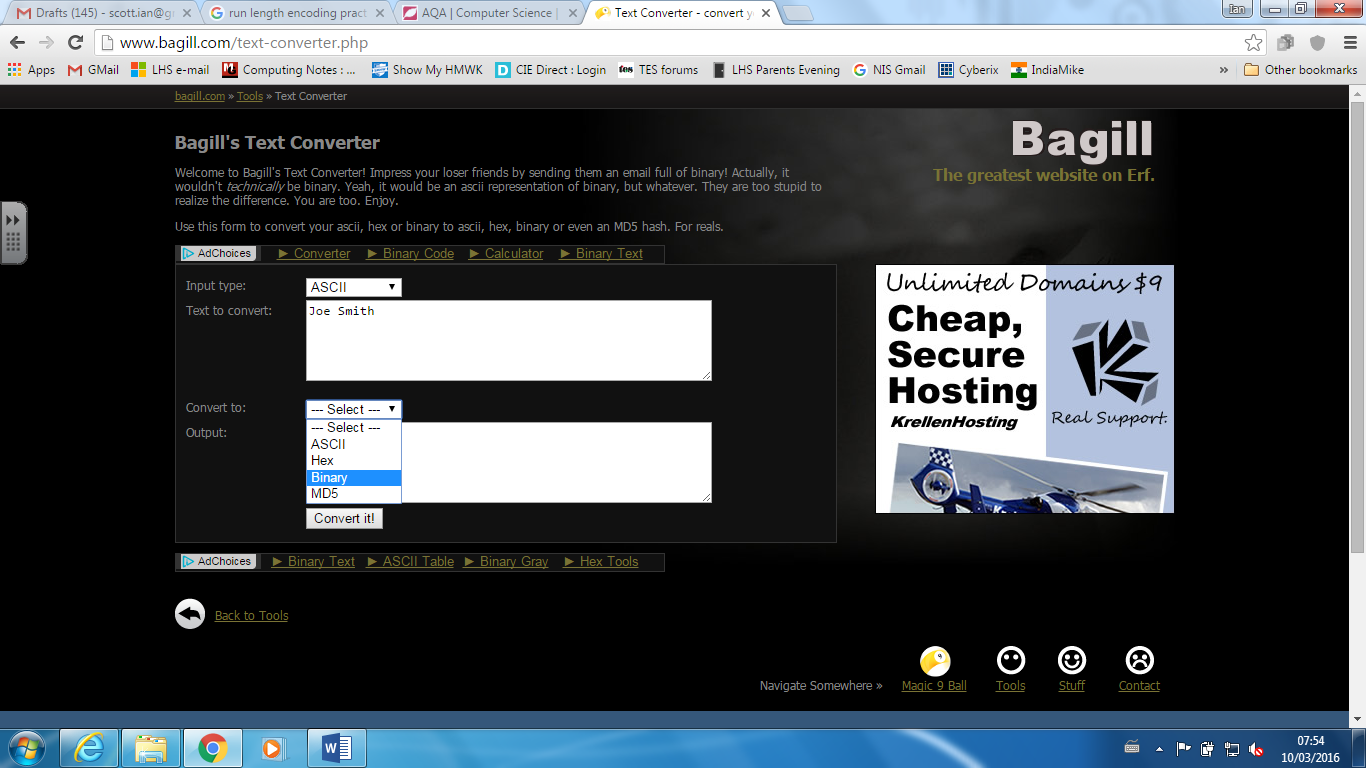
**TASK 1**

Go to the website:

<http://www.bagill.com/text-converter.php>



Convert your name into binary.

**Run-length encoding** is a simple computer method of LOSSLESS compressing or encoding data.

When there is a pair or more than TWO bits the same (a ‘run length’ of common digits), we can compress those bits by writing how many - length - of those common bits (run) there are.

For example:

11000010 🡪 114010 - this means there is a string of four zeroes in the sequence

|  |  |
| --- | --- |
| **Data** | **Number of bits** |
| 11000010 | 8 bits |
| 214010 | 6 bits (‘compressed’) |

***EXAMPLE***

|  |  |  |
| --- | --- | --- |
| **MY NAME (ASCII characters)** | JOHN SMITH | **HOW MANY DIGITS?** |
| **MY NAME (in BINARY - uncompressed)** | 0100101001101111011010000110111000  1000000101001101101101011010010111  010001101000 | 80 digits |
| **MY NAME (in BINARY – compressed)** | 0120101202104102101402103130  16010120210210210102101201031  0130210130 | 67 digits  = 17% compression |

\* COUNTING BITS IN THE ‘UNCOMPRESSED’ NAME 🡪 EACH LETTER = 1 BYTE = 8 BITS

Using the website:

<http://www.bagill.com/text-converter.php>

- fill in the table below with:

- your name

- your name in BINARY

- your name ‘compressed’ using **RUN-LENGTH ENCODING**

- how many digits storage space your name takes UNCOMPRESSED

- how many digits storage space your name takes COMPRESSED

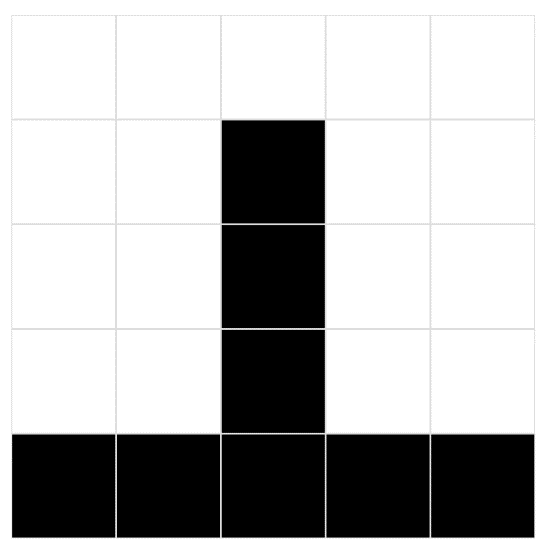
- the compression %age

|  |  |  |
| --- | --- | --- |
| **MY NAME (ASCII characters)** |  | **HOW MANY DIGITS?** |
| **MY NAME (in BINARY - uncompressed)** |  | \_\_\_ digits |
| **MY NAME (in BINARY – compressed)** |  | \_\_\_ digits  = \_\_\_ % compression |

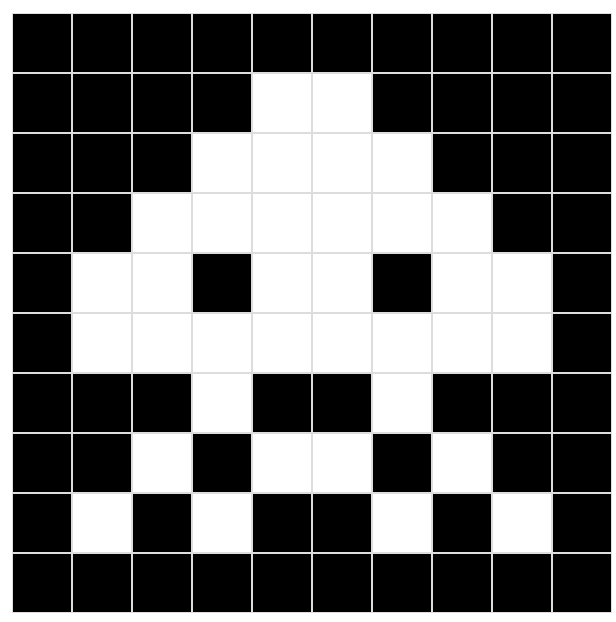
\* COUNTING BITS IN THE ‘UNCOMPRESSED’ NAME 🡪 EACH LETTER = 1 BYTE = 8 BITS

**TASK 2**

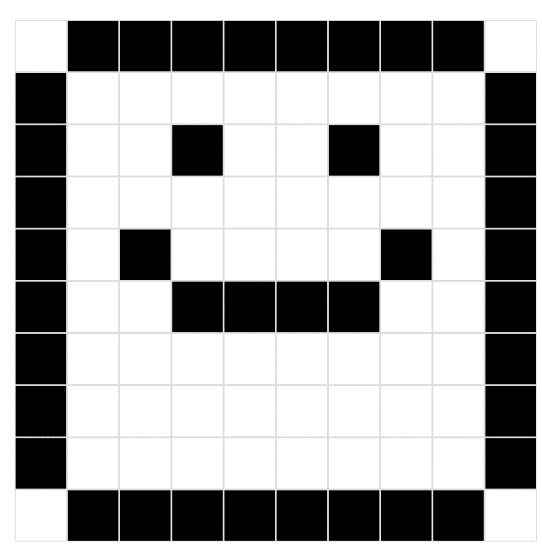
Write down the run length encoding for the following images. 0 means white and 1 means black.



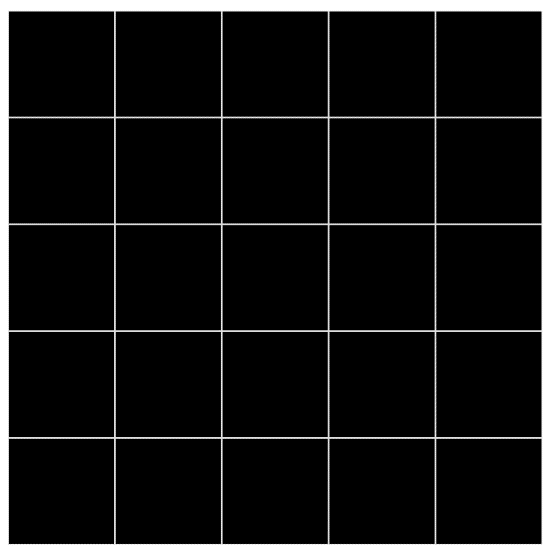
|  |  |  |  |
| --- | --- | --- | --- |
| Original num of bits | Original bits | Compressed characters | Compressed num of characters |
|  |  |  |  |



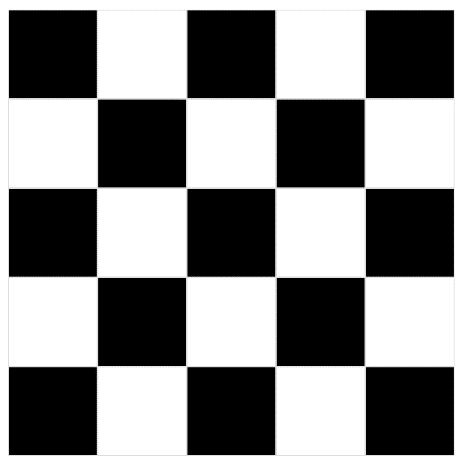
|  |  |  |  |
| --- | --- | --- | --- |
| Original num of bits | Original bits | Compressed characters | Compressed num of characters |
|  |  |  |  |



|  |  |  |  |
| --- | --- | --- | --- |
| Original num of bits | Original bits | Compressed characters | Compressed num of characters |
|  |  |  |  |



|  |  |  |  |
| --- | --- | --- | --- |
| Original num of bits | Original bits | Compressed characters | Compressed num of characters |
|  |  |  |  |



|  |  |  |  |
| --- | --- | --- | --- |
| Original num of bits | Original bits | Compressed characters | Compressed num of characters |
|  |  |  |  |