

CSE461 Section #2

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Hamming Code Revision

HTTP Primer

Q&A

Hamming Code

(7,4) Hamming Code

$$d[1]^d[3]^d[5]^d[7]=0$$

$$d[2]^d[3]^d[6]^d[7]=0$$

$$d[4]^d[5]^d[6]^d[7]=0$$

(M,N) Hamming Code

(11,7) Hamming Code

Bits	P ₁	P ₂	D ₁	P ₃	D ₂	D ₃	D ₄	P ₄	D ₅	D ₆	D ₇
P ₁	X		X		X		X		X		X
P ₂		X	X			X	X			X	X
P ₃				X	X	X	X				
P ₄								X	X	X	X

Hamming Code

Practice

Encode the following bits:

0011

1111

1001100

Correct and decode the following codewords:

0011011

0000101

0010000

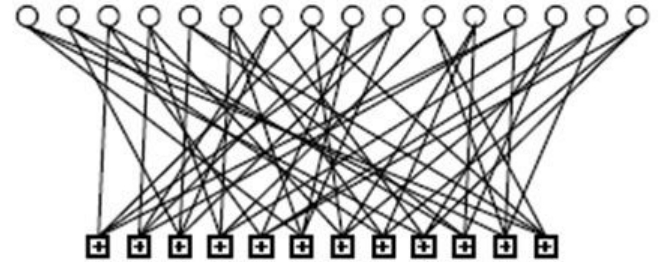
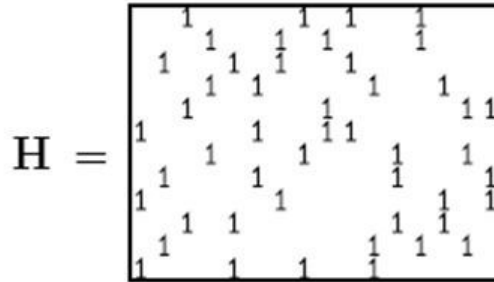
Efficiency

error correction capability: 1 bit

error detection capability: 2 bit

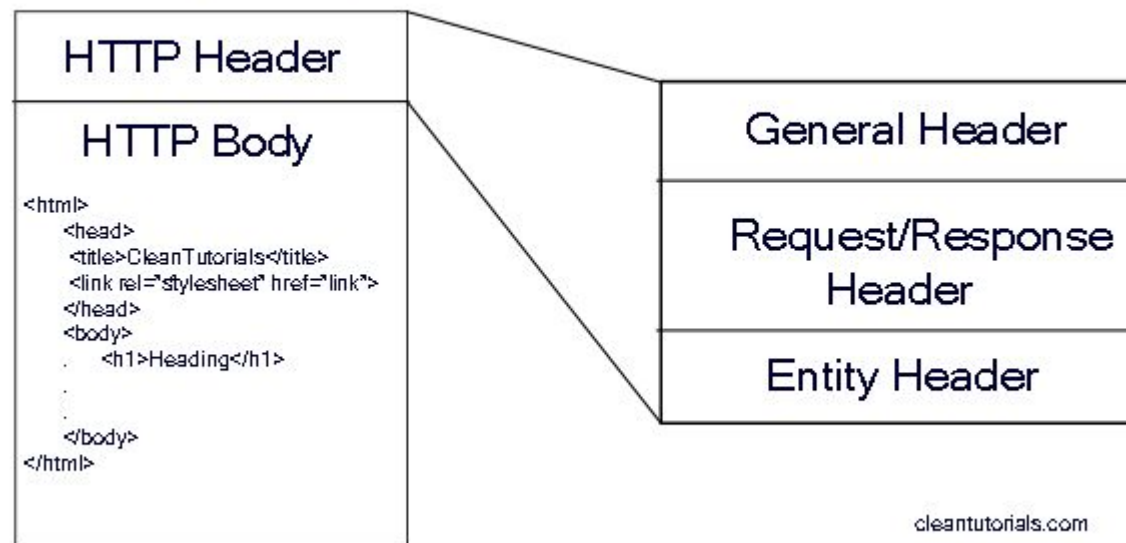
rate: $1 - r/(2^r - 1)$

Better codes?



HTTP

HTTP Request/response



HTTP Header

method	path	protocol
GET	/tutorials/other/top-20-mysql-best-practices/	HTTP/1.1

```
Host: net.tutsplus.com
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 6.1; en-US; rv:1.9.1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=
Accept-Language: en-us,en;q=0.5
Accept-Encoding: gzip,deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Keep-Alive: 300
Connection: keep-alive
Cookie: PHPSESSID=r2t5uvjq435r4q7ib3vtdjq120
Pragma: no-cache
Cache-Control: no-cache
```

HTTP headers as Name: Value