Data Encoding

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Data encoding

- The term encoded data means wrapped data and the process of encoding is used to transform the data into a different format so that it can be easily understood by different type of system.

- For example ASCII characters are encoded by means of numbers ‘i’ is represented with 105, ‘S’ with 83, ‘E’ with 69 an so on.

```
>>> ord("i")
105
>>> ord("S")
83
>>> ord("E")
69
```

URL Encoding

- The internet only accepts URL's in ASCII format, URL encoding entails encoding certain parts of the URL character set. This process takes one character and converts it into a character triplet that has a prefix of "%" followed by two digits in hexadecimal format.

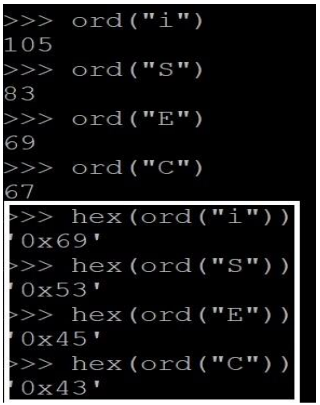
- Python example: https://isec.ne.jp

```
>>> site="https://isec.ne.jp"
>>> print site
https://isec.ne.jp
>>> urllib.quote_plus(site)
'https%3A%2F%2Fisec.ne.jp'
```

Hexadecimal

- Hexadecimal or Base 16 is a positional number system which consists of 16 distinct symbols which range from 0 to 9 in numerals and both upper and lowercase alphabets which range from A to F which represent numeric values 10 to 15

- Python example: “iSEC” in hexadecimal



Base64

- Each base64 digit represents exactly 6 bits of data.Is a radix-64 representation of ASCII string.
- Python example: iSEC Base64

```
>>> print example
iSEC
>>> print base64.b64encode(example)
aVNFQw==
>>>
```

Rot13

- A letter substitution cypher, it's conversion process from plain text to cypher test is dicinging the total number of alphabets in half: A to M and N to Z. The first half mirriors the second half and vice versa. So, A = N and N = A.

- Python example: iSEC Rot13

```
>>> from codecs import encode
>>> print example
iSEC
>>> print encode(example, "rot13")
vFRP
```

References

- Wikipedia
https://en.wikipedia.org/wiki/Character_encoding

- URL encoding Wikipedia
https://en.wikipedia.org/wiki/Percent-encoding