Gor Isoyan

ENGS 110 — Introduction to Programming

Narine Hovhannisyan, Satenik Mnatsakanyan

24.04.2022

PRD

(Product requirements document)

Introduction

In computer programming, Base64 is a group of binary-to-text encoding schemes that represent binary data (more specifically, a sequence of 8-bit bytes) in sequences of 24 bits that can be represented by four 6-bit Base64 digits. Base64 is a way to encode the binary data. Each Base64 digit represents exactly 6 bits of data. So, three 8-bits bytes of the input string/binary file (3×8 bits = 24 bits) can be represented by four 6-bit Base64 digits (4×6 = 24 bits).

Common to all binary-to-text encoding schemes, Base64 is designed to carry data stored in binary formats across channels that only reliably support text content. Base64 is particularly prevalent on the World Wide Web where one of its uses is the ability to embed image files or other binary assets inside textual assets such as HTML and CSS files.

Base64 is also widely used for sending e-mail attachments. This is required because SMTP—in its original form—was designed to transport 7-bit ASCII characters only. This encoding causes an overhead of 33–36% (33% by the encoding itself; up to 3% more by the inserted line breaks).

Project overview

As a project I am taking base64 encoding, for checking the correctness of the code the decoding part of project also, we will be done. Both parts will have their different files. Such as for running the program for encoding, it will only encode the given data from the user, and vice versa will be for the decoding file. The user will be able to run the file and will be asked to write anything and the program will return the given data and encoded or decoded version of it.

Reference:

<https://nachtimwald.com/2017/11/18/base64-encode-and-decode-in-c/>

<https://developer.mozilla.org/en-US/docs/Glossary/Base64>