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ENGS 110 — Introduction to Programming

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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. As already was mentioned the base64 is based on ASCII characters. I am going to use C programming language for the project. The program will ask the user to enter any value and get the encoded 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>