Concept of Operations

Introduction to Programming

Final Project

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# Introduction

This project was created to test the knowledge gained by the students during the Introduction to Programming course. The aim of the project is to create an encoding program in C using base64.

A little bit about base64. Base 64 is a binary-to-text encoding scheme. It works by dividing every three bits of binary data into six bit units. The newly created data is represented in a 64-radix numeral system.

# 2.0 Documents

These documents were used to learn what is base64 and how it works. Also these provided help, when writing the actual code. Note: the last one is a website which encodes and decodes , this was used to check the program.

References:

<https://www.techopedia.com/definition/27209/base64#:~:text=Base64%20is%20a%20binary%20to,as%20seven%2Dbit%20ASCII%20text>.

<https://medium.com/swlh/powering-the-internet-with-base64-d823ec5df747#:~:text=How%20does%20base64%20work%3F,bits)%20into%20four%20base64%20characters.&text=Which%20makes%20up%20a%20total,according%20to%20the%20table%20above>.

<https://amp.base64decode.org/>

# 3.0 Description of Envisioned System.

This system is going to function using the programming language C, so to have it working C is required. Goals of the system is to make a working encoder using base64.

# 4.0 Physical Environment

The Physical environment needed for the system is an average laptop or PC.

# 5.0 Support Environment

For the system to work you need to either have terminal console or a visual studio, which support the C language.

# 6.0 Operational Scenarios, Use Cases and/or Design Reference Missions

The operational scenario is the use of the system to encode information.

# 7.0 Impact Consideration

No major impact expected.

# 8.0 Risks and Potential Issues

No major risks or issues were noticed.