**Product Requirements Document**

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Project Name: CRC32B function implementation

**Revision History**

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| **Version Number** | **Author** | **Version Description** | **Date Complete** |
| 1.0 | Arman Armaghanyan | Create Hash function based on CRC32B algorithm | 11.05.2022 |
| 1.1 | Arman Armaghanyan | Add file reading symstem | 13.05.2022 |

**Abstract**

A hash function is a function whose purpose is to convert data of an arbitrary size into a fixed size. The values ​​returned by a hash function are called hash values, hash codes, digests, or simply hashes. Values ​​are typically used to index a fixed size table called a hash table.

**Introduction**

We can use hash functions for many purposes, and one such purpose is hash tables to store and retrieve data in little time. Hash functions are also used in many applications and websites to verify the transfer of information. One good example is using various sites for registration and further access to data with their help. I use one of the well-known CRC32B hash algorithms in my code example. The program imports data from another file and creates a hash code that we can use for further needs.

**Glossary of Terms**

**CRC(Cyclic Redundancy Check)** - a technique used to detect errors in digital data

**Polynomial representations** - Any string of bits can be interpreted as the coefficients of the polynomial, and then we find the remainder when divided by the generator polynomial. Residual polynomial coefficients are CRC bits. In my example, I used 0xEDB88320, an already identified hexadecimal polynomial.

**Introduction**

I also attach a source to test the performance of my hash generator:

https://hash.rfctools.com/crc32b-hash-generator/

**System Architecture**

**Diagram

Description automatically generated**