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Lab 6 – Questions and Answers Concerning this Computer Laboratory Project

1. The Logical XOR Operation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| expr1 | expr2 |  | expr1 XOR exp2 |  |
|  |  |  |  |  |
| 1 | 1 |  | 0 |  |
| 1 | 0 |  | 1 |  |
| 0 | 1 |  | 1 |  |
| 0 | 0 |  | 0 |  |

1. The MS Excel XOR Function

The output of XOR(0,1) is TRUE. This is because an exclusive OR with true and false is true.

1. The MS Excel BITXOR Function

The output of BITXOR(57,19) is 42. This is because the binary value of 57 is 00111001 and the binary value of 19 is 00010011. If we do an XOR of these values, the result is 00101010 which is 42 in decimal.

1. Computer Programs and the XOR Operation

First result: first result = TRUE

Second result: second result = TRUE

Third result: third result = FALSE

1. Encryption/Decryption

The way to decrypt an encrypted character would be to convert the ACSII equivalent of the encrypted character to binary. Then, we can XOR the ACSII equivalent of the encrypted character with the ACSII equivalent of the key. The result will be the ACSII equivalent of the decrypted character.