CISC 101: Assignment 1

Batuhan Aktan

19ba17@queensu.ca

1. Outside of computer science I am very passionate about competitive esports. My passion started when I was first introduced to League of Legends in grade 9, my friends and I were addicted to it. Everyday when we were back from school we would play for hours, with the development of esports as a genre in the online community we decided to watch a few games and we were immediately hooked. Since then I watched almost every season of it. This passion allowed me to make friends and share some of my most memorable experiences with them. This is related to computer science since the streaming platforms are softwares that need to be developed and updated. These platforms need to evaluate large amounts of data in order to improve their recommendation algorithms, add or remove content according to their terms of service, or even use machine learning to make their data evaluation more efficient and accurate. I believe that with the education I will be receiving I will be able to allow future generations to have the same experiences I had and have a job that is very rewarding which is why I choose to major in computer science.

2.

   a. $25 = 1 * (2\text{^}4) + 1 * (2^3) + 0 * (2^2) + 0 * (2^1) + 1 * (2^0)$

      $25 = 11001$

   b. $149 = 1 * (2^7) + 0 * (2^6) + 0 * (2^5) + 1*(2^4) + 0 * (2^3) + 1 * (2^2) + 0 * (2^1) + 1 * (2^0)$

      $149 = 10010101$

   c. $1111 = 1 * (2^{10}) + 0 * (2^9) + 0 * (2^8)+ 0 * (2^7) + 1 * (2^6) + 0 * (2^5) + 1*(2^4) + 0 * (2^3) + 1 * (2^2) + 1 * (2^1) + 1 * (2^0)$

1111 = 10001010111

3.

a. $10101 = 1 *(2^4) + 0 * (2^3) + 1 * (2^2) + 0 * (2^1) + 1 * (2^0)$

$10101 = 16 + 0 + 4 + 0 + 1$

$10101 = 21$

b. $110 = 1 * (2^2) + 1 * (2^1) + 0 * (2^0)$

$110 = 4 + 2 + 0$

$110 = 6$

c. $11111 = 1 *(2^4) + 1 * (2^3) + 1 * (2^2) + 1 * (2^1) + 1 * (2^0)$

$11111 = 16 + 8 + 4 + 2 + 1$

$11111 = 31$

4. $B = 66 = 1*(2^6) + 0*(2^5) + 0*(2^4) + 0*(2^3) + 0 *(2^2) + 1*(2^1) + 0*(2^0) = 1000010$

$a = 97 = 1*(2^6) + 1*(2^5) + 0*(2^4) + 0*(2^3) + 0*(2^2) + 0*(2^1) + 1*(2^0) = 1100001$

$t = 116 = 1*(2^6) + 1*(2^5) + 1*(2^4) + 0*(2^3) + 1*(2^2) + 0*(2^1) + 0*(2^0) = 1110100$

$u = 117 = 1*(2^6) + 1*(2^5) + 1*(2^4) + 0*(2^3) + 1*(2^2) + 0*(2^1) + 1*(2^0) = 1110101$

$h = 104 = 1*(2^6) + 1*(2^5) + 0*(2^4) + 1*(2^3) + 0*(2^2) + 0*(2^1) + 0*(2^0) = 1101000$

$a = 97 = 1*(2^6) + 1*(2^5) + 0*(2^4) + 0*(2^3) + 0*(2^2) + 0*(2^1) + 1*(2^0) = 1100001$

$n = 110 = 1*(2^6) + 1*(2^5) + 0*(2^4) + 1*(2^3) + 1*(2^2) + 1*(2^1) + 0*(2^0) = 1101110$

$A = 65 = 1*(2^6) + 0*(2^5) + 0*(2^4) + 1*(2^3) + 0*(2^2) + 0*(2^1) + 1*(2^0) = 1000001$

$k = 107 = 1*(2^6) + 1*(2^5) + 0*(2^4) + 1*(2^3) + 0*(2^2) + 1*(2^1) + 1*(2^0) = 1101011$

$t = 116 = 1*(2^6) + 1*(2^5) + 1*(2^4) + 0*(2^3) + 1*(2^2) + 0*(2^1) + 0*(2^0) = 1110100$

$a = 97 = 1*(2^6) + 1*(2^5) + 0*(2^4) + 0*(2^3) + 0*(2^2) + 0*(2^1) + 1*(2^0) = 1100001$

$n = 110 = 1*(2^6) + 1*(2^5) + 0*(2^4) + 1*(2^3) + 1*(2^2) + 1*(2^1) + 0*(2^0) = 1101110$