Task 2

1. 10059

|  |  |  |
| --- | --- | --- |
| Division | Quotient | Remainder |
| 10059/2 | 5029 | 1 |
| 5029/2 | 2514 | 1 |
| 2514/2 | 1257 | 0 |
| 1257/2 | 628 | 1 |
| 628/2 | 314 | 0 |
| 314/2 | 157 | 0 |
| 157/2 | 78 | 1 |
| 78/2 | 39 | 0 |
| 39/2 | 19 | 1 |
| 19/2 | 9 | 1 |
| 9/2 | 4 | 1 |
| 4/2 | 2 | 0 |
| 2/2 | 1 | 0 |
| 1/2 | 0 | 1 |

10011101001011 – is the binary value of 10059

|  |  |  |
| --- | --- | --- |
| Division | Quotient | Remainder |
| 10059/16 | 628 | 11 - B |
| 628/16 | 39 | 4 |
| 39/16 | 2 | 7 |
| 2/16 | 0 | 2 |

274B – is the hexadecimal value of 10059

1. 99999 – 11000011010011111 + 10011101001011 = 11010110111101010

11000011010011111 – 10011101001011 = 10101111101010100

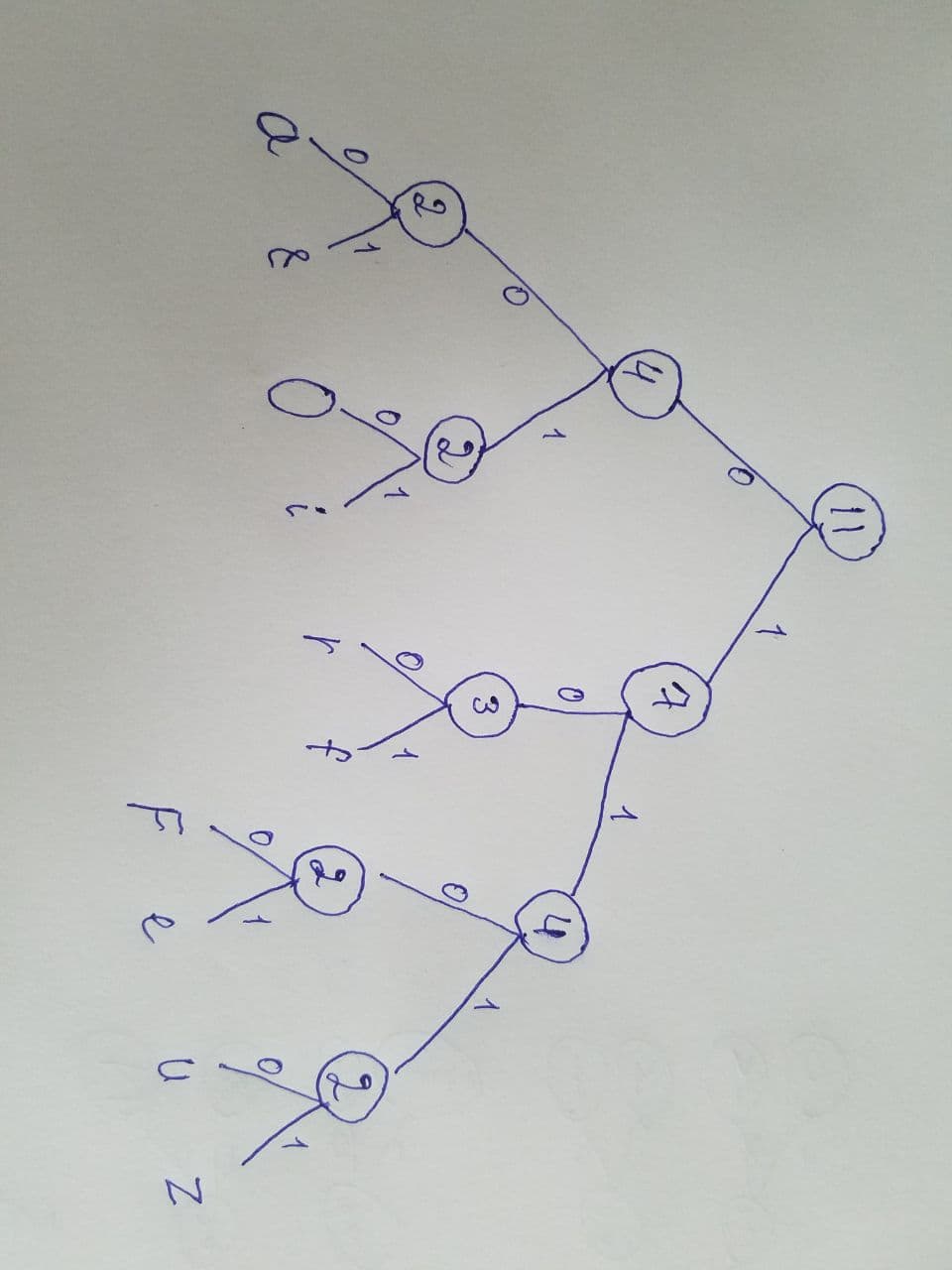
1. Hexadecimal numbers are widely used nowadays. For example, in representation of Media Access Control or MAC address. In naming of colors, especially in web pages.

Task 3

Orif&Feruza

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a | & | O | i | r | f | F | e | u | z |
| 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 |
| 000 | 001 | 010 | 011 | 100 | 101 | 1100 | 1101 | 1110 | 1111 |

1\*3 + 1\*3 + 1\*3 +1\*3 +1\*3 +1\*3 + 1\*4 + 1\*4 + 1\*4 + 1\*4 = 18 + 16 = 34 bits

Task 4

1005945237

Search for 7

1. Put in ascending order – 0, 0, 1, 2, 3, 4, 5, 5, 7, 9
2. 10/2 = 5, midpoint is 3
3. X > 3, so leave only right side
4. 5/2 = 2.5, rounded 3. Midpoint is 5
5. X > 5, so leave only right side
6. 2/2 = 1, midpoint is 7
7. X is 7, 7 = 7, number is found

Task 5

In single contiguous memory management, memory is divided into two, in partitions memory is divided into more then two parts and in paged memory management, process is divided into pages and stored in memory frames.

1. In page 2 the frame is 5, so we multiply 5 to frame size which is 1024, then add offset.

5\*1024 + 85 = 5,205‬

1. It is illegal address due to the offset is bigger than frame size. 1026 > 1024