

* Analytical Problems * Tulsen
CSA5765 - Fundamentals of Computing, 19210801

* Decimal to Hexadecimal *

1) $(2020)_{10} \rightarrow (7E4)_{16}$

$$\begin{array}{r} 16 \overline{) 2020} \\ 16 \overline{) 126} \rightarrow 7 \\ 7 \rightarrow 14 \end{array}$$

* $(7E4)_{16}$

4) $(49) \rightarrow (31)_{16}$

$$\begin{array}{r} 16 \overline{) 49} \\ 8 \rightarrow 1 \\ \Rightarrow 31 \end{array}$$

* $(31)_{16}$

2) $(2020.65625)_{10} \rightarrow (7E.48)_{16}$

$$\begin{array}{r} 16 \overline{) 2020} \\ 16 \overline{) 126} \rightarrow 7 \\ 7 \rightarrow 14 \end{array} \quad \begin{array}{l} 0.625 \times 16 = 10.0 \\ 0.5 \times 16 = 8 \end{array}$$

$\Rightarrow 7E \Rightarrow A8$

* $(7E.48)_{16}$

5) $(172.953)_{10} \rightarrow (AC.FB)_{16}$

$$\begin{array}{r} 16 \overline{) 172} \\ 10 \rightarrow 12 \end{array}$$

(AC) $0.953 \times 16 = 15.248$

$\Rightarrow (AC.FB)_{16}$ $0.7 \times 16 = 11.2$

$0.2 \times 16 = 3.2$

FB

3) $(172)_{10} \rightarrow (AC)_{16}$

$$\begin{array}{r} 16 \overline{) 172} \\ 10 \rightarrow 12 \end{array}$$

$\Rightarrow (AC)_{16}$

6) $(122810)_{10} \rightarrow (1FBA)_{16}$

$$\begin{array}{r} 16 \overline{) 122810} \\ 16 \overline{) 7625} \rightarrow 10 \\ 16 \overline{) 479} \rightarrow 11 \\ 16 \overline{) 29} \rightarrow 15 \\ 1 \rightarrow B \end{array}$$

$\therefore (1FBA)_{16}$

$$7) (60010)_{10} \rightarrow ()_{16}$$

$$\begin{array}{r} 16 \overline{) 60010} \\ 16 \overline{) 3750} \rightarrow 10 \\ 16 \overline{) 234} \rightarrow 6 \\ 14 \rightarrow 10 \end{array}$$

$$\Rightarrow (EAGA)_{16}$$

$$8) (175)_{10} \rightarrow ()_{16}$$

$$\begin{array}{r} 16 \overline{) 175} \\ 10 \rightarrow 15 \end{array}$$

$$\Rightarrow (AF)_{16}$$

$$9) (450)_{10} \rightarrow ()_{16}$$

$$\begin{array}{r} 16 \overline{) 450} \\ 16 \overline{) 28} \rightarrow 2 \\ 1 \rightarrow 12 \end{array}$$

$$\Rightarrow (1C2)_{16}$$

$$10) (3000)_{10} \rightarrow ()_{16}$$

$$\begin{array}{r} 16 \overline{) 3000} \\ 16 \overline{) 187} \rightarrow 8 \\ 11 \rightarrow 11 \end{array}$$

$$\Rightarrow (BB8)_{16}$$

$$11) (1542)_{10} \rightarrow ()_{16}$$

$$\begin{array}{r} 16 \overline{) 1542} \\ 16 \overline{) 96} \rightarrow 6 \\ 6 \rightarrow 0 \end{array}$$

$$\Rightarrow (606)_{16}$$

$$12) (105)_{10} \rightarrow ()_{16}$$

$$\begin{array}{r} 16 \overline{) 105} \\ 6 \rightarrow 9 \end{array}$$

$$\Rightarrow (69)_{16}$$

$$13) (199)_{10} \rightarrow ()_{16}$$

$$\begin{array}{r} 16 \overline{) 199} \\ 16 \overline{) 12} \rightarrow 7 \\ C \end{array}$$

$$\Rightarrow (C7)_{16}$$

$$14) \text{ convert Base}_{10} \text{ to Base}_8$$

$$\begin{array}{r} 8 \overline{) 1032} \\ 8 \overline{) 129} \rightarrow 0 \\ 8 \overline{) 16} \rightarrow 1 \\ 2 \rightarrow 0 \end{array}$$

$$\Rightarrow (2010)_8$$

$$15) (1032.6875)_{10} \rightarrow ()_8$$

$$\begin{array}{r|l} 8 & 1032 \\ \hline 8 & 129 \rightarrow 0 \\ 8 & 16 \rightarrow 1 \\ & 2 \rightarrow 0 \end{array} \quad \begin{array}{l} 0.6875 \times 8 = 5.4 \\ 0.5 \times 8 = 4 \\ 54 \end{array}$$

$$\Rightarrow (2010.54)_8$$

$$17) (172)_{10} \rightarrow ()_8$$

$$\begin{array}{r|l} 8 & 172 \\ \hline 8 & 21 \rightarrow 4 \\ & 2 \rightarrow 5 \end{array}$$

$$\Rightarrow (172)_{10} \rightarrow (254)_8$$

$$16) (167.878)_{10} \rightarrow ()_8$$

$$\begin{array}{r|l} 8 & 167 \\ \hline 8 & 21 \rightarrow 4 \\ & 2 \rightarrow 5 \end{array} \quad \begin{array}{l} 0.878 \times 8 = 7.0 \\ 7.0 \end{array}$$

$$\Rightarrow (254.7)_8$$

$$18) (127)_{10} \rightarrow ()_8$$

$$\begin{array}{r|l} 8 & 127 \\ \hline 8 & 15 \rightarrow 7 \\ & 1 \rightarrow 1 \end{array} = 177$$

$$\Rightarrow (127)_{10} \rightarrow (177)_8$$

IP Address Identification

- 1) 6250.1.1 \rightarrow Belongs to class A
- 2) 193.42.1.1 \rightarrow Belongs to class B
- 3) 249.240.80.78 \rightarrow Belongs to class E
- 4) 215.45.45.0 \rightarrow Belongs to class C
- 5) 33.0.0.0 \rightarrow Belongs to class A
- 6) 158.98.80.0 \rightarrow Belongs to class B