

DAA ASSIGNMENT 3

EHTASHAM AKMAL
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69974Algorithm ^{Q1} McDonalds :

```

NuggetBox(a)
    condition = false ;
    if (a < 1)
        return false ;

```

```

    if ((a % 6 == 0) || (a % 9 == 0) ||
        (a % 20 == 0))

```

```

        Console.WriteLine(a);
        return true

```

```

    if (condition == false && a > 20)
        condition = NuggetBox(a - 20)
    if (condition == true)
        Console.WriteLine(20);
    if (condition == false && (a > 9 &&
        a < 20))

```

```

        condition = NuggetBox(a - 9)
    if (condition == true)
        Console.WriteLine(9);

```

if (condition == false && (a > 6.

&& a < 9)) {

Condition = NuggetBox(a-6);

Console.WriteLine(6);

return Condition;

Q2

a) Given 4096

$$\log_2(4096) = 12$$

$$\log_3(4096) = 7.57$$

$$\log_4(4096) = 6$$

$$\log_5(4096) = 5.16$$

$$\log_6(4096) = 4.64$$

$$\log_7(4096) = 4.27$$

$$\log_8(4096) = 4$$

$$i.e. \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, AB\}$$

Assume

b)

Array ~~b~~ [4096];
a = 10 ; ~~b~~ = 11 , increment = 0 ;

for (int i = 0 ; i < a.length ; i++)

if (i == a)

{ a[i] = 'A' ;

a = a + 10 ; }

if (i == b)

{

a[i] = 'B' ;

b = b + 10 ;

}

else

{

a[i] = increment ;

increment++ ;

}

}



c) Now if we want to sort this we can using different algorithms so for this purpose we use bucket sort Algorithm in which each bucket is sorted by or using Counting Sort.

d) while (LSD reach)
repeat step 'c'

e) Console.WriteLine("Sorted");