Computing & Ethics.

(*) What is Computer Ethics ?

· Using computer for the benifit of individeual and as well as society at large.

The act or behaviour through which computers are used ---- - - - - . - --

(*) ↓ Intellectual property : Example — Music album.
Intellectual property rights :
— Book writing
— Software development
The developer/writer/singer has absolute authority

to distribute / sell / modify the product.

To preserve intellectual property rights

i) Trademark ✓ → Symbol to identify a product/company. i.e T

ii) Copyright ✓ → Software, book, CD, ---.

iii) patent → Device, Formula

Individual rights to privacy

Software
Piracy => Using unauthorized software.

(*) Software counterfeiting => minor change → Sell in
own name

(*) Renting ≢ purchase ⇒ Renting

Hacking => Unauthorized access to others database

Internal & External threat.

How to maintain system

192, 384, 576

— 217   438   657

    273   546   819

— 327   654   981

3 digit.	} The set
2nd = 2×1st	contains
3rd = 3×1st	1 to 9

① WAP to check a number is unique number or not   123 ✓   522 ✗

② WAP to accept a number and remove a digit in all occurance of the number and display the new number – 68389 , 8   number

output   6 3 9

③ WAP to convert an octal number to decimal number.

$$(135)_8 \rightarrow (\qquad)_{10}$$

$$1 \times 8^2 + 3 \times 8^1 + 5 \times 8^0 = (\qquad)_{10}$$

09/10 |

1) WAP to accept a number and display the distinct prime factors of the number. $75 \rightarrow 3, 5$

2) WAP to print 1st n non fibonacci terms $n = 5 \rightarrow 4, 6, 7, 9, 10$

```c
void main (int n)
{
    int i, j, a=1, b=0, c
    for (i = 1; i <= n;    )
    {
        c = a + b;
        for ( j = b+1; j < c; j++ )
        {
            if (i <= n)
            {   s.op (j)
                i++;
            }
        }
        a = b;
        b = c;
    }
}
```

1, 1, 2, 3, 5=-1..8, ↑13 ↑21

4   6,7   5.   c

$\dfrac{5}{3, 5, 5, 8, 8}$

```java
void main(    )
{
    Scanner sc =
            S.op ("No of numbers");
        n = sc.neetInt();  }
    S.o pln(" Enter the first number").
    num = sc. neetInt();
    int max = num, min = num;
    for (int i = 2; i <= n; i++)
    {
        num = sc. neetInt();
        if (num > max)              S.o pln( "hitost = max)
                        max = num;      S.o pln( "Least = "+ mi);
        if (num < min)                         }
        min = num;
}
```

```
void main (int num)
{
    int i, flag = 0                    ;
for (i = 2; i <= num; i++ )
    {
        if ( num % i = = 0 )
            {   if ( flag == 0 )
                    S.O.P ( i + " " );
                    num = num / i ; flag = 1;
            }
else
{ .i ++
} flag = 0;
```

3. WAP to generate all the n digit numbers for which 1st digit and last digit are same. $n = 4 \Rightarrow$ $\underline{2352}$

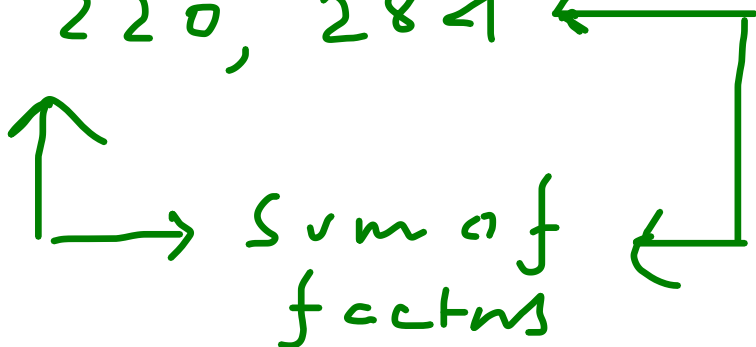4. WAP to find the highest and lowest of n number of numbers.

$n = 5$, 2, 15, 6, 18, 7

highest $= 18$, lowest $= 2$

23.10 | 1) Amicable number → 220, 284 ←

2) Hamming distance b/w
   two numbers (binary) .

$\longrightarrow$ Sum of
         factors ←

5, 15
↓   ↓

✓   ̄0 1 0 1 ̄   1 1 1 1   diff = 0

✓   1 1 1 1 ✓   diff + + → diff = 2 (Hamming Dist)

3. Evil number → If the binary equivalent
            of a number contains even numbers of 1
                                              5 → 101 → Evil

4. Keith number →

$\boxed{14} \rightarrow$

$\underline{5} \rightarrow \underline{9} \rightarrow \boxed{14}$

$\underline{19} \rightarrow 1+9 \rightarrow 10 \rightarrow 10+9 \rightarrow \underline{19}$

197
↓
1, 9, 7

$1 + 9 + 7 = 17$

$9 + 7 + 17 = \underline{33}$

$7 + 17 + \underline{33} = \overline{57}$

$17 + 33 + \underline{57} = 107$

$33 + 57 + 107 = 197$

```c
void main (int a, int b)
{
    int i, sum1 = 0, sum2 = 0;
    for (i = 1; i <= a/2; i++)
        if (a%i == 0)
            sum1 += i;
    for (i = 1; i <= b/2; i++)
        if (b%i == 0)
            sum2 += i;
    if (sum1 == b && sum2 == a)
        S.o.pln ("Amicable");
    else
        S.o.pln ("NAt
                  amicable");
}
```

```c
void main (int num)
{
    int count = 0, d;
    while (num > 0)
    {
        d = num % 2;
        if (d == 1)
            count++;
        num /= 2;
    }
    if (count % 2 == 0)
        S.o.p ("Evil number");
    else S.o.p ("Not Evil number");
}
```

30.10

WAP to check a given number is armstrong $n_7 2_n^w = x^4 + y^4 + z^4 + w^4$ number or not.

$153 \rightarrow 1^3 + 5^3 + 3^3$

$135 \rightarrow 1^1 + 3^2 + 5^3$

```
{
  -void main (int num)
  int d, count = 0, i, copy, sum=0;
  copy = num;
  for ( i = ___ ;  i ___ ;  i ___ )
          1          2         3
              count ++ ;
  {
  while ( ___ )
            4
      d = copy % 10 ;
      sum = sum + ___ ;
                    5
      copy /= 10 ;
          6
  }
}
```

1. num
2. > 0
3. i /= 10
4. copy > 0
5. (int) Math.pow(d, count)
6.
7. ___ num

if (___ == sum)
      7
S.o.p ("Armstrng");
else S.o.p ("not Armstrng").
}

Q WAP to convert a decimal number to octal, Hexadecimal, Binary number as per the supplied base value.

```
void main (int num, int base)       125, 2  → Binary
{                                    125, 8  → octal
    String str = " "   ;             125, 16 → Hexa.
    int d ;
    {
        while (num > 0)
            d = _____ ;
                  (1)
        if (d > 9)
            str = (chan) (55 + d) + str;
        else
        str = _____
                (2)
```

1. num % base
2. d + str
3. num /= base
4. str

}   (3)

S.o. pln ("Equivalent num" +
                    str   );
                    (4)

$$\text{while} (172 > 0)$$
$$\{ \quad d = 172 \, / . \, 16 \quad (12)$$
$$str = c + ""$$
$$\text{en}$$
$$Str = d + str$$
$$num = num / base;$$
$$\}$$

$$53 + 12 = 67 \quad \rightarrow \quad 65 - A$$
$$10 - A \qquad 66 - B$$
$$11 - B \qquad 67 - C$$
$$12 - C$$

$$\bar{5} \quad) 9 \rightarrow A, B, C$$

Generic form

$$- \quad - \quad - \quad - \quad .$$