a) a ⇒ 243

b ⇒ 330

Converting these integers to binary.

| | | |
|---|---|---|
| 2 | 243 | |
| 2 | 121 | 1 |
| 2 | 60 | 1 |
| 2 | 30 | 0 |
| 2 | 15 | 0 |
| 2 | 7 | 1 |
| 2 | 3 | 1 |
| | 1 | 1 |

→ 11110011

| | | |
|---|---|---|
| 2 | 330 | |
| 2 | 165 | 0 |
| 2 | 82 | 1 |
| 2 | 47 | 0 |
| 2 | 20 | 1 |
| 2 | 10 | 0 |
| 2 | 5 | 0 |
| 2 | 2 | 1 |
| | 1 | 0 |

→ 101001010

The binary of

243 → 11110011

330 → 101001010

## a << 2

Move 2 bits to the left

a = 11100 11

After move a = 11100

↳ 28

| 1 | 1 | 1 | 0 | 0 |
|---|---|---|---|---|
| $2^4$ | $2^3$ | $2^2$ | $2^1$ | $2^0$ |

## b >> 2

Move 2 bits to the right

b = 101001010

After Moving

b = 00 101 00 1010

↳ 330

b) d = ++a - b - [illegible]

a ⇒ 10

b ⇒ 'a'

c ⇒ 1.2

e ⇒ 2

x ⇒ 4

y ⇒ 3

d ⇒ double

$$d \Rightarrow ++10 - a - 1.2/2 + 4 * 3$$

Division $d \Rightarrow ++10 - a - 0.6 + 4 * 3$

Multiplication ⇒ ++10 - a - 0.6 + 12

Subtraction ⇒ ++10 - a - 11.4

Post Incrementation ⇒ 11 - a - 11.4

⇒ - a - 0.4

If a's ASCII is used $a \Rightarrow 97$

d = -97.4

or else d = -a-0.4 (Not possible in double)

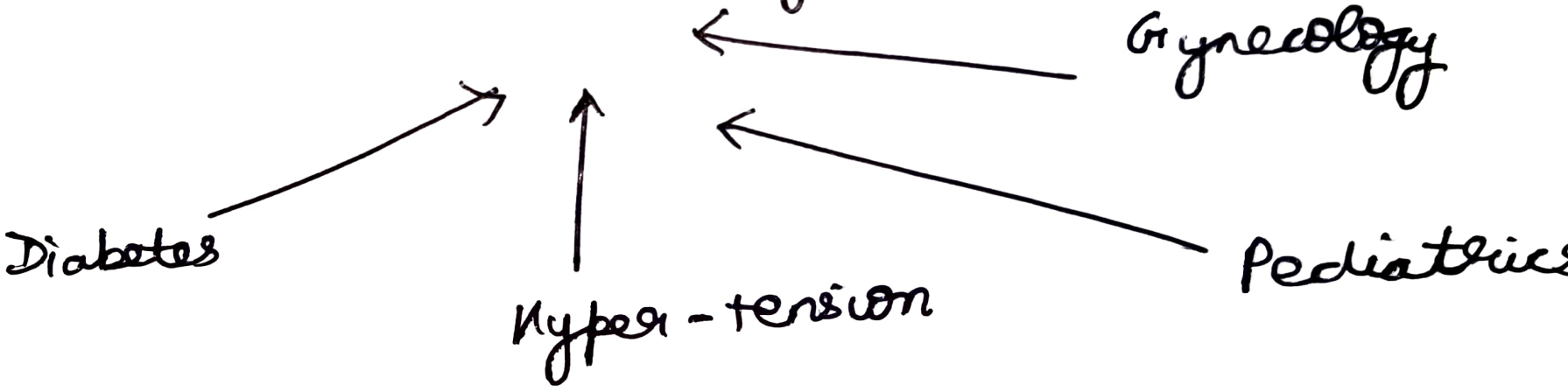
## Methods

↳ billing ()

↳ stock availability ()

↳ Sales report

↳ stock availability




Apply Dynamic polymorphism technique.

```
    int stocks_total;
    Pharmacy ()
      {   stocks_total = 0;
      }
    void billing ();
    void stock_available ();
}

class Diabetes extends Pharmacy
{   Strings med, int dia_stocks;
    Diabetes ( Strings medicine, int stocks)
      {
        this.med = medicine;
        this.dia_stocks = stocks;
      }
    void billing ()
      {
        System.out.println ("Total medicine
        in the shops" + dia_stocks");
        System.out.println ("Here is the billing");
      }
    void stock_available ()
      {
        System.out.println ("Available
    Diabetes medicine stocks" + dia_stocks);
      }
    stocks_total = stocks_total + dia_stoks.
}
```

```
class Hyper_tension extends
{
    String name;
    int hyper_stocks;

    Hyper_tension (String name, int stocks) {
        this.name = name;
        this.hyper_stocks = stocks;
    }

    void billing ()
    { System.out.println ("Medicine name :" + name
        + "Here is the billing order");
    }
    void stocks_available ()
    {
        System.out.println ("Available stocks :"
            + hyper_stocks");
    }

    stocks_total = stocks_total + hyper_stocks;

}
```

```
int pha

Gynecology (String name, int stocks) {
    this.name = name;
    this.pharma_stocks = stocks;
}

void billing()
{   System.out.println("Medicine name:" + na
    System.out.println("Here is the billing de
}

void stocks_available()
{   System.out.println("Available stocks
        + pharma_stocks");
}

stocks_total = stocks_total + pharma_stoc

}
```

```
public static void main ()
{
    Pharmacy obj1 = new Pharmacy ()
    Diabetes obj2 = new Diabetes ("Crocin", 100);
    Hyper_tension obj3 = new Hyper_tension ("Antacid",
    Gynecology obj4 = new Gynecology ("Hint", 200);

    obj2. billing ();
    obj2. stock_available();

    obj3. billing ()
    obj3. stock_available();

    obj4. billing();
    obj4. stock_available ();

}
```