21.What is inheritance?

Inheritance mens  enables a new class to inherit the properties and method of an existing class.

* **Type of Inheritance in Dart:**

1.Singal Inheitance

2.Multilevel Inheritance

3. Hierarchical Inheritance

1.**Singal Inheritance:**

* The inheritance in which a single derived class is inherited from a single base class is known as the Single Inheritance.
* It is the simplest among all the types of inheritance since it does not include any kind of inheritance combination or different levels of inheritance.

Class A

Class B

* Syntex:

class A{

-------------Syntex-----------

}

class B extends A{

------------Syntex-------------

}

* Exampal:

import 'dart:io';

class A {

  var num1, num2, ans;

  void get() {

    print("Enter value of number 1: ");

    num1 = int.parse(stdin.readLineSync()!);

    print("Enter value of number 2: ");

    num2 = int.parse(stdin.readLineSync()!);

  }

}

class B extends A {

  void mul() {

    ans = num1 \* num2;

    print("Multiplication of $num1 and $num2 is $ans");

  }

}

void main() {

  var obj = B();

  obj.get();

  obj.mul();

}

* Output:

Enter value of number 1:

5

Enter value of number 2:

5

Multiplication of 5 and 5 is 25

**2.Multilevel Inheritance:**

* The inheritance in which a class can be derived from another derived class is known as Multilevel Inheritance.
* It is the simplest among all the types of inheritance since it does not include any kind of inheritance combination or different levels of inheritance.

Class A

Class B

Class C

* Syntex:

class A{

----------Syntex-----

}

class B extends class A{

------------Syntex------------

}

class C extends class B{

------------Syntex-----------

}

* Exampal:

import 'dart:io';

class A {

  var num1, num2, ans;

  void get() {

    print("Enter value of number 1: ");

    num1 = int.parse(stdin.readLineSync()!);

    print("Enter value of number 2: ");

    num2 = int.parse(stdin.readLineSync()!);

  }

}

class B extends A {

  void mul() {

    ans = num1 \* num2;

  }

}

class C extends B {

  void display() {

    print("Multiplication of $num1 and $num2 is $ans");

  }

}

void main() {

  var obj = C();

  obj.get();

  obj.mul();

  obj.display();

}

* Output:

Enter value of number 1:

5

Enter value of number 2:

5

Multiplication of 5 and 5 is 25

**3.Hierarchical Inheritance:**

* A situation in which a parent class is inherited by many subclasses is called hierarchical inheritance.

Class B

Class A

Class C

* Exampal:

import 'dart:io';

class A {

  var num1, num2, ans;

  void get() {

    print("Enter value of number 1: ");

    num1 = int.parse(stdin.readLineSync()!);

    print("Enter value of number 2: ");

    num2 = int.parse(stdin.readLineSync()!);

  }

}

class B extends A {

  void add() {

    ans = num1 + num2;

    print("Additiom of $num1 and $num2 is $ans");

  }

}

class C extends A {

  void mul() {

    ans = num1 \* num2;

    print("Multiplication of $num1 and $num2 is $ans");

  }

}

void main() {

  var obj = B();

  var obj1 = C();

  obj.get();

  obj.add();

  obj1.get();

  obj1.mul();

}

* Output:

Enter value of number 2:

5

Addition of 5 and 5 is 10

Enter value of number 1:

5

Enter value of number 2:

5

Multiplication of 5 and 5 is 25