**\*\* *anonymous* \*\***

**anonymous:**

1. A nested class that doesn't have any name is known as an anonymous class.
2. An anonymous class must be defined inside another class. Hence, it is also known as an anonymous inner class. Its syntax is:

**It can achieved by 3 Ways :**

1. That extends by a class.
2. That implements by an interface.
3. That Define inside the arguments.

|  |  |  |
| --- | --- | --- |
| No. | A a = new A(); | A a = new A(){}; |
|  | Yaha ek class Create ka Object create ho rha he. | Yaha ek class Create ho rahi he anonymous class. |
|  | Class A ke Object ko class A ka reference variable hold kar rha he. | Jo anonymous class he baha extends he Class A se. |
|  |  | Yaha Anonymous class ka Object create ho rha he. |
| 4. |  | Anonymous inner class ka Object Super class ka reference variable ushe hold kar. |

1. **That extends by a class.**

abstract class A

**{**

    void show**()**

**{**

        System**.**out**.**println**(**"Vishal Soner - 1"**);**

**}**

**}**

class Q01\_Anonyonous\_Inner\_Class

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**();**

        a**.**show**();**

**}**

**}**

error: A is abstract; cannot be instantiated

                A a = new A();

                    ^

abstract class A

**{**

    void show**()**

**{**

        System**.**out**.**println**(**"Vishal Soner - 1"**);**

**}**

**}**

class Q02\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**(){};**

        a**.**show**();**

**}**

**}**

Vishal Soner – 1

1. Super Class ka referance variable sub-class ke object ko store kar sakta he.
2. Abstract class ka Object nai bana sakte he,
3. But Abstract class ka referance create kar sakte he.

abstract class A

**{**

    void show**()**

**{**

        System**.**out**.**println**(**"Vishal Soner - 1"**);**

**}**

**}**

class B **extends** A

**{}**

class Q03\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** B**();**

        a**.**show**();**

**}**

**}**

Vishal Soner - 1

1. We create Class B.

2. Class B extends A (inherit).

3. Create Object Class B.

4. B Class ke Object ko Super Class A ka referance variable a hold kar raha he.

abstract class A

**{}**

class Q04\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**(){};**

        System**.**out**.**println**(**"Main Method"**);**

**}**

**}**

Main Method

abstract class A

**{**

    abstract void show**();**

**}**

class Q05\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**(){};**

        System**.**out**.**println**(**"Main Method"**);**

**}**

**}**

error: <anonymous Q05\_Anonyonous\_Inner\_Class$1> is not abstract and does not override abstract method show() in A

    A a = new A(){};

                  ^

abstract class A

**{**

    abstract void show**();**

**}**

class B **extends** A

**{**

**}**

class Q06\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        B b **=** **new** B**();**

        System**.**out**.**println**(**"Main Method"**);**

**}**

**}**

error: B is not abstract and does not override abstract method show() in A

class B extends A

^

abstract class A

**{**

    abstract void show**();**

**}**

class B **extends** A

**{**

    void show**()**

**{**

        System**.**out**.**println**(**"Class B show Method"**);**

**}**

**}**

class Q07\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        B b **=** **new** B**();**

        b**.**show**();**

        System**.**out**.**println**(**"Main Method"**);**

**}**

**}**

Class B show Method

Main Method

abstract class A

**{**

    abstract void show**();**

**}**

class Q08\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**()**

**{**

            void show**()**

**{**

                System**.**out**.**println**(**"Anonymous Class show Method"**);**

**}**

**};**

        a**.**show**();**

        System**.**out**.**println**(**"Main Method"**);**

**}**

**}**

Anonymous Class show Method

Main Method

After Compile :

A.class

Q10\_Anonyonous\_Inner\_Class\_extends.class

Q10\_Anonyonous\_Inner\_Class\_extends$1.class

abstract class A

**{**

    abstract void show1**();**

    abstract void show2**();**

**}**

class Q09\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**()**

**{**

            void show1**()**

**{**

                System**.**out**.**println**(**"Anonymous Class show Method"**);**

**}**

**};**

        a**.**show1**();**

        System**.**out**.**println**(**"Main Method"**);**

**}**

**}**

error: <anonymous Q08\_Anonyonous\_Inner\_Class$1> is not abstract and does not override abstract method show2() in A

                {

                ^

abstract class A

**{**

    abstract void show1**();**

    abstract void show2**();**

**}**

class Q10\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**()**

**{**

            void show1**()**

**{**

                System**.**out**.**println**(**"Anonymous Class show Method - 1"**);**

**}**

            void show2**()**

**{**

                System**.**out**.**println**(**"Anonymous Class show Method - 2"**);**

**}**

**};**

        a**.**show1**();**

        a**.**show2**();**

        System**.**out**.**println**(**"Main Method"**);**

**}**

**}**

Anonymous Class show Method - 1

Anonymous Class show Method - 2

Main Method

After Compile :

A.class

Q10\_Anonyonous\_Inner\_Class\_extends.class

Q10\_Anonyonous\_Inner\_Class\_extends$1.class

abstract class A

**{**

    abstract void show1**();**

**}**

class Q11\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a1 **=** **new** A**()**

**{**

            void show1**()**

**{**

                System**.**out**.**println**(**"First Anonymous Class"**);**

**}**

**};**

        A a2 **=** **new** A**()**

**{**

            void show1**()**

**{**

                System**.**out**.**println**(**"Second Anonymous Class"**);**

**}**

**};**

        a1**.**show1**();**

        a2**.**show1**();**

**}**

**}**

First Anonymous Class

Second Anonymous Class

After Compile :

A.class

Q11\_Anonyonous\_Inner\_Class\_extends.class

Q11\_Anonyonous\_Inner\_Class\_extends$1.class

Q11\_Anonyonous\_Inner\_Class\_extends$2.class

abstract class A

**{**

    abstract int cube**(**int x**);**

**}**

class Q12\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a1 **=** **new** A**()**

**{**

            int cube**(**int x**)**

**{**

**return** x**\***x**\***x**;**

**}**

**};**

        int cube1 **=** a1**.**cube**(**10**);**

        System**.**out**.**println**(**"Cude : " **+** cube1**);**

**}**

**}**

Cude : 1000

abstract class A

**{**

    abstract void show**();**

**}**

class Q13\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

**new** A**()**

**{**

            void show**()**

**{**

                System**.**out**.**println**(**"Show Method"**);**

**}**

**}.**show**();**

**}**

**}**

Show Method

abstract class A

**{**

    abstract void show**();**

**}**

class Q14\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**()**

**{**

            void show**()**

**{**

                System**.**out**.**println**(**"Show Method"**);**

**}**

**}.**show**();**

**}**

**}**

error: incompatible types: void cannot be converted to A

    }.show();

          ^

.show() method void return kar rahi he or void ko object me types cast nai kar sakte

OR

void ka A a(Object) me store nai kar sakte.

abstract class A

**{**

    abstract int cube**(**int x**);**

**}**

class Q15\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        int cube\_data **=** **new** A**()**

**{**

            int cube**(**int x**)**

**{**

**return** x**\***x**\***x**;**

**}**

**}.**cube**(**5**);**

        System**.**out**.**println**(**"Cude : " **+** cube\_data**);**

**}**

**}**

Cude : 125

abstract class A

**{**

    abstract A show**();**

**}**

class Q16\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**()**

**{**

            A show**()**

**{**

                System**.**out**.**println**(**"Show Method"**);**

**return** **this;**

**}**

**}.**show**();**

**}**

**}**

show Method

abstract class A

**{**

    abstract A show**();**

**}**

class Q17\_Anonyonous\_Inner\_Class

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**()**

**{**

            A show**()**

**{**

                System**.**out**.**println**(**"Show Method"**);**

**return** **this;**

**}**

**}.**show**();**

**}**

**}**

show Method

class Employee

**{**

    void name**()**

**{**

        System**.**out**.**println**(**"Vishal Soner -1"**);**

**}**

    void salary**()**

**{**

        System**.**out**.**println**(**"Salary : 50,000"**);**

**}**

**}**

class Q17\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        Employee e1**=** **new** Employee**();**

        Employee e2**=** **new** Employee**();**

        Employee e3**=** **new** Employee**();**

        e1**.**name**();**

        e1**.**salary**();**

        e2**.**name**();**

        e2**.**salary**();**

        e3**.**name**();**

        e3**.**salary**();**

**}**

**}**

Vishal Soner -1

Salary : 50,000

Vishal Soner -1

Salary : 50,000

Vishal Soner -1

Salary : 50,000

class Employee

**{**

    void name**()**

**{**

        System**.**out**.**println**(**"Vishal"**);**

**}**

    void salary**()**

**{**

        System**.**out**.**println**(**"500"**);**

**}**

**}**

class Employee2 **extends** Employee

**{**

    void salary**()**

**{**

        System**.**out**.**println**(**"700"**);**

**}**

**}**

class Q18\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        Employee e1**=** **new** Employee2**();**

        Employee e2**=** **new** Employee2**();**

        Employee e3**=** **new** Employee2**();**

        e1**.**name**();**

        e1**.**salary**();**

        e2**.**name**();**

        e2**.**salary**();**

        e3**.**name**();**

        e3**.**salary**();**

**}**

**}**

Vishal

700

Vishal

700

Vishal

700

class Employee

**{**

    void name**()**

**{**

        System**.**out**.**println**(**"Vishal"**);**

**}**

    void salary**()**

**{**

        System**.**out**.**println**(**"500"**);**

**}**

**}**

class Q19\_Anonyonous\_Inner\_Class\_extends

**{**

    public static void main**(**String args**[])**

**{**

        Employee e1**=** **new** Employee**()**

**{**

            void salary**()**

**{**

                System**.**out**.**println**(**"700"**);**

**}**

**};**

        Employee e2**=** **new** Employee**();**

        Employee e3**=** **new** Employee**();**

        e1**.**name**();**

        e1**.**salary**();**

        e2**.**name**();**

        e2**.**salary**();**

        e3**.**name**();**

        e3**.**salary**();**

**}**

**}**

Vishal

700

Vishal

500

Vishal

500

-----------------------------------------------------------------------------------------------

1. **That implements by an interface.**

interface Inter1

**{**

    void show**();**

**}**

class Q20\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**();**

**}**

**}**

error: Inter1 is abstract; cannot be instantiated

                Inter1 in1 = new Inter1();

                             ^

interface Inter1

**{**

    void show**();**

**}**

class Q21\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**(){};**

**}**

**}**

error: <anonymous Q21\_Anonyonous\_Inner\_Class\_implements$1> is not abstract and does not override abstract method show() in Inter1

                Inter1 in1 = new Inter1(){};

                                         ^

interface Inter1

**{**

    void show**();**

**}**

class A implements Inter1

**{**

    void show**()**

**{**

        System**.**out**.**println**(**"Vishal Soner"**);**

**}**

**}**

class Q22\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**();**

        a**.**show**();**

**}**

**}**

 error: show() in A cannot implement show() in Inter1

        void show()

             ^

  attempting to assign weaker access privileges; was public

interface Inter1

**{**

    void show**();**

**}**

class A implements Inter1

**{**

    public void show**()**

**{**

        System**.**out**.**println**(**"Vishal Soner"**);**

**}**

**}**

class Q23\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        A a **=** **new** A**();**

        a**.**show**();**

**}**

**}**

Vishal Soner

interface Inter1

**{**

    void show**();**

**}**

class Q24\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**()**

**{**

            void show**()**

**{**

                System**.**out**.**println**(**"Vishal Soner"**);**

**}**

**};**

        in1**.**show**();**

**}**

**}**

error: show() in <anonymous Q22\_Anonyonous\_Inner\_Class\_implements$1> cannot implement show() in Inter1

                        void show()

                             ^

interface Inter1

**{**

    void show**();**

**}**

class Q25\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**()**

**{**

            public void show**()**

**{**

                System**.**out**.**println**(**"Vishal Soner"**);**

**}**

**};**

        in1**.**show**();**

**}**

**}**

Vishal Soner

interface Inter1

**{**

    void show1**();**

    void show2**();**

**}**

class Q26\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**()**

**{**

            public void show1**()**

**{**

                System**.**out**.**println**(**"Vishal Soner"**);**

**}**

**};**

        in1**.**show1**();**

**}**

**}**

error: <anonymous Q26\_Anonyonous\_Inner\_Class\_implements$1> is not abstract and does not override abstract method show2() in Inter1

                {

                ^

interface Inter1

**{**

    void show1**();**

    void show2**();**

**}**

class Q27\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**()**

**{**

            public void show1**()**

**{**

                System**.**out**.**println**(**"Show - 1"**);**

**}**

            public void show2**()**

**{**

                System**.**out**.**println**(**"Show - 2"**);**

**}**

**};**

        in1**.**show1**();**

        in1**.**show2**();**

**}**

**}**

Show - 1

Show - 2

interface Inter1

**{**

    int cude**(**int x**);**

**}**

class Q28\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**()**

**{**

            public int cude**(**int x**)**

**{**

**return** x**\***x**\***x**;**

**}**

**};**

        System**.**out**.**println**(**"Cude : " **+** in1**.**cude**(**10**)** **);**

**}**

**}**

Cude : 1000

interface Inter1

**{**

    int cude**(**int x**);**

**}**

class Q29\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **new** Inter1**()**

**{**

            public int cude**(**int x**)**

**{**

**return** x**\***x**\***x**;**

**}**

**}.**cude**(**10**);**

**}**

**}**

error: incompatible types: int cannot be converted to Inter1

                }.cude(10);

                      ^

interface Inter1

**{**

    int cude**(**int x**);**

**}**

class Q30\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        int in1 **=** **new** Inter1**()**

**{**

            public int cude**(**int x**)**

**{**

**return** x**\***x**\***x**;**

**}**

**}.**cude**(**10**);**

        System**.**out**.**println**(**"Cude : " **+** in1 **);**

**}**

**}**

Cude : 1000

interface Inter1

**{**

    int cude**(**int x**);**

**}**

class Q31\_Anonyonous\_Inner\_Class\_implements

**{**

    public static void main**(**String args**[])**

**{**

        int in1 **=** **new** Inter1**()**

**{**

            public int cude**(**int x**)**

**{**

**return** x**\***x**\***x**;**

**}**

**};**

        System**.**out**.**println**(**"Cude : " **+** in1**.**cude**(**10**)** **);**

**}**

**}**

 error: incompatible types: <anonymous Inter1> cannot be converted to int

                int in1 = new Inter1()

                          ^

    1. Function Interface : is a Interface that contains only one abstract method.

    2. Lambda Expresion   : Function Interface me woek karta he,  ye version 1.8 me add hua he.

interface Inter1

**{**

    void show**();**

**}**

class Q32\_Function\_Interface

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **()->{**      System**.**out**.**println**(**"Function Interface"**);**       **};**

        in1**.**show**();**

        in1**.**show**();**

**}**

**}**

Function Interface

Function Interface

-----------------------------------------------------------------------------------------------

1. **Function Inter Face**

  1. Function Interface : is a Interface that contains only one abstract method.

    2. Lambda Expresion   : Function Interface me woek karta he,  ye version 1.8 me add hua he.

interface Inter1

**{**

    void show**();**

**}**

class Q33\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **()->{**      System**.**out**.**println**(**"Lambda Expresion - 1"**);**     **};**

        in1**.**show**();**

        //Also do like this :

        Inter1 in2 **=** **()->**   System**.**out**.**println**(**"Lambda Expresion - 2"**);**     **;**

        in2**.**show**();**

**}**

**}**

Lambda Expresion - 1

Lambda Expresion - 2

interface Inter1

**{**

    void show**();**

**}**

class Q34\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **()->{**

                            System**.**out**.**println**(**"Lambda Expresion - 1"**);**

                            System**.**out**.**println**(**"Lambda Expresion - 2"**);**

**};**

        in1**.**show**();**

**}**

**}**

Lambda Expresion - 1

Lambda Expresion - 2

interface Inter1

**{**

    void show**();**

**}**

class Q35\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **()->**

        System**.**out**.**println**(**"Lambda Expresion - 1"**);**

        System**.**out**.**println**(**"Lambda Expresion - 2"**);**

        in1**.**show**();**

**}**

**}**

Lambda Expresion - 2

Lambda Expresion - 1

Internally : Work like this.

Inter1 in1 = ()->System.out.println("Lambda Expresion - 1");

System.out.println("Lambda Expresion - 2");

interface Inter1

**{**

    int cude**(**int x**);**

**}**

class Q36\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **(**int x**)->**

**{**

**return** x**\***x**\***x**;**

**};**

        System**.**out**.**println**(**"Cude : " **+** in1**.**cude**(**10**)** **);**

**}**

**}**

Cude : 1000

-----------------------------------------------------------------------------------------------

interface Inter1

**{**

    int cude**(**int x**);**

**}**

class Q37\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **(**int x**)->{**         **return** x**\***x**\***x**;**       **};**

        System**.**out**.**println**(**"Cude : " **+** in1**.**cude**(**2**)** **);**

        Inter1 in2 **=** **(**x**)->{**         **return** x**\***x**\***x**;**       **};**

        System**.**out**.**println**(**"Cude : " **+** in2**.**cude**(**3**)** **);**

        Inter1 in3 **=** x**->{**           **return** x**\***x**\***x**;**       **};**

        System**.**out**.**println**(**"Cude : " **+** in3**.**cude**(**4**)** **);**

**}**

**}**

Cude : 8

Cude : 27

Cude : 64

-----------------------------------------------------------------------------------------------

interface Inter1

**{**

    int multi**(**int x**,** int y**);**

**}**

class Q38\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        // 01

        Inter1 in1 **=** **(**int x**,** int y**)->{**          **return** x**\***y**;**         **};**

        System**.**out**.**println**(**"Multi : " **+** in1**.**multi**(**10**,** 5**)** **);**

        // 02

        Inter1 in2 **=** **(**x**,** y**)->{**                      **return** x**\***y**;**         **};**

        System**.**out**.**println**(**"Multi : " **+** in2**.**multi**(**10**,** 25**)** **);**

        //03

        // Inter1 in3 = x,y->{                      return x\*y;         };

        // System.out.println("Multi : " + in3.multi(10, 50) );

**}**

**}**

// 01

Multi : 50

// 02

Multi : 250

// 03

error: ';' expected

    Inter1 in3 = x,y->{                                         return x\*y;                 };

                   ^

interface Inter1

**{**

    int multi**(**int x**,** int y**);**

**}**

class Q39\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in **=** **(**int x**,** int y**)->**    **return** x**\***y**;**

        Inter1 in **=** **(**x**,** y**)->**    **return** x**\***y**;**         //Same Error

        System**.**out**.**println**(**"Cude : " **+** in**.**multi**(**10**,** 20**));**

**}**

**}**

 error: illegal start of expression

    Inter1 in = (int x, int y)->    return x\*y;

                            ^

interface Inter1

**{**

    int multi**(**int x**,** int y**);**

**}**

class Q40\_Lambda\_Expresion

**{**

    public static void main**(**String args**[])**

**{**

        Inter1 in1 **=** **(**int x**,** int y**)->**   x**\***y**;**

        System**.**out**.**println**(**"Cude : " **+** in1**.**multi**(**10**,** 5**));**

        Inter1 in2 **=** **(**x**,** y**)->**   x**\***y**;**            //Same Work

        System**.**out**.**println**(**"Cude : " **+** in2**.**multi**(**10**,** 10**));**

**}**

**}**

Cude : 50

Cude : 100