1. **can I access parent class properties and behaviours using parent class reference ?**

**Ans :** Yes we can access parent class properties and behaviours using parent class reference.

**Source Code :**

**package** com.inheritance;

**class** A{

String message="This is parent class";

**public** **void** printMessage() {

System.***out***.println("Method1");

}

}

**class** B extends A{

String message="This is child class";

**public** **void** displayMessage() {

System.***out***.println("Method2");

}

}

**public** **class** Example {

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

A a=**new** A();

System.***out***.println(a.message);

a.printMessage();

}

}

**Output :**

This is parent class

Method1

1. **can I access parent class properties and behaviours using child class reference ?**

**Ans :** Yes we can access parent class properties and behaviours using child class reference.

**Source Code :**

**package** com.inheritance;

**class** A{

String message="This is parent class";

**public** **void** printMessage() {

System.***out***.println("Method1");

}

}

**class** B **extends** A{

String message="This is child class";

**public** **void** displayMessage() {

System.***out***.println("Method2");

}

}

**public** **class** Example {

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

B b =**new** B();

b.printMessage();

System.***out***.println(b.message);

}

}

**Output :**

Method1

This is child class

1. **can I access parent class private properties and behaviours using parent class reference from child class ?**

**Ans :** No we can’t access parent class properties and behaviours using parent class reference form child class. Because private fields having scope within the class.

**Source Code :**

**package** com.inheritance;

**class** A{

**private** String message="This is parent class";

**private** **void** printMessage() {

System.***out***.println("Method1");

}

}

**class** B **extends** A{

String message="This is child class";

**public** **void** displayMessage() {

System.***out***.println("Method2");

}

}

**public** **class** Example {

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

A a=**new** B();

a.printMessage;

System.out.println(a.message);

}

}

**Output :**

Exception in thread "main" java.lang.Error: Unresolved compilation problems:

Syntax error, insert "VariableDeclarators" to complete LocalVariableDeclaration

printMessage cannot be resolved or is not a field

The field A.message is not visible

at com.inheritance.Example.main(Example.java:20)

1. **can I access child class properties and behaviours using child class reference ?**

**Ans :** Yes we can access child class properties and behaviours using child class reference.

**Source Code :**

package com.inheritance;

class A{

private String message="This is parent class";

private void printMessage() {

System.*out*.println("Method1");

}

}

class B extends A{

String message="This is child class";

public void displayMessage() {

System.*out*.println("Method2");

}

}

public class Example {

public static void main(String[] args) {

B b=new B();

System.*out*.println(b.message);

b.displayMessage();

}

}

**Output :**

This is child class

Method2

1. **can I access parent class properties and behaviours using child class reference ?**

**Ans :** Yes we can access parent class properties and behaviours using child class reference.

**Source Code :**

**package** com.inheritance;

**class** A{

String message="This is parent class";

**public** **void** printMessage() {

System.***out***.println("Method1");

}

}

**class** B **extends** A{

String message="This is child class";

**public** **void** displayMessage() {

System.***out***.println("Method2");

}

}

**public** **class** Example {

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

B b =**new** B();

b.printMessage();

System.***out***.println(b.message);

}

}

**Output :**

Method1

This is child class

1. **can I store child class object into parent class reference variable?**

**Ans :** Yes we can store child class object into parent class reference variable.

**Source Code :**

**package** com.inheritance;

**class** A{

String message="This is parent class";

**public** **void** printMessage() {

System.***out***.println("Method1");

}

}

**class** B **extends** A{

String message="This is child class";

**public** **void** displayMessage() {

System.***out***.println("Method2");

}

}

**public** **class** Example {

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

A a=**new** B();

System.***out***.println(a.message);

a.printMessage();

}

}

**Output :**

This is parent class

Method1

1. **which keywords is use to make relation b/w classes to classes ?**

**Ans :** extends keyword is used to make realation between classes to classes.

1. **how many types of inheritance ?**

**Ans :** There are five types of inheritance in java

* Single level inheritance
* Multi level inheritance
* Hierarchy inheritance
* Multiple inheritance
* Hybrid inheritance

**9. can I access child class properties and behaviours using parent class reference ?**

**Ans :** No we can’t access child class properties and behaviours using parent class reference.

**Source Code :**

**package** com.inheritance;

**class** A{

String message="This is parent class";

**public** **void** printMessage() {

System.***out***.println("Method1");

}

}

**class** B **extends** A{

String message="This is child class";

**public** **void** displayMessage() {

System.***out***.println("Method2");

}

}

**public** **class** Example {

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

A a=**new** A();

System.***out***.println(a.message);

a.dipayMessage();

}

}

**Output :**

Exception in thread "main" java.lang.Error: Unresolved compilation problem:

The method dipayMessage() is undefined for the type A

at com.inheritance.Example.main(Example.java:21)

10.when does java.lang.ClassCastException raised ?

**Ans:** We cannot convert parent object into child class object by down casting it throws a runtime exception i.e java.lang.ClassCastexception

**Source Code :**

**package** com.inheritance;

**class** A{

String message="This is parent class";

**public** **void** printMessage() {

System.***out***.println("Method1");

}

}

**class** B **extends** A{

String message="This is child class";

**public** **void** displayMessage() {

System.***out***.println("Method2");

}

}

**public** **class** Example {

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

B b=(B)**new** A();

b.printMessage();

b.displayMessage();

System.***out***.println(b.message);

}

}

**Output :**

Exception in thread "main" java.lang.ClassCastException: class com.inheritance.A cannot be cast to class com.inheritance.B (com.inheritance.A and com.inheritance.B are in unnamed module of loader 'app')

at com.inheritance.Example.main(Example.java:19)

**11. Any Possible ways to store parent class reference into child class reference ?**

**Ans :** We can store parent reference into child class reference when parent class reference is storing child class object.

package com.inheritance;

class A{

String message="This is parent class";

public void printMessage() {

System.*out*.println("Method1");

}

}

class B extends A{

String message="This is child class";

public void displayMessage() {

System.*out*.println("Method2");

}

}

public class Example {

public static void main(String[] args) {

A a=new B();

B b=(B)a;

b.displayMessage();

b.printMessage();

System.*out*.println(b.message);

}

}

**Output :**

Method2

Method1

This is child class