

Aarya Arban

S11-07

Assignment No. 13 – Inheritance and its Type

Code:

```
# Single inheritance
```

```
class Details:
```

```
    def __init__(self):
```

```
        self.__id("<No Id>")
```

```
        self.__name("<No Name>")
```

```
        self.__gender("<No Gender>")
```

```
    def setData(self,id,name,gender):
```

```
        self.__id=id
```

```
        self.__name=name
```

```
        self.__gender=gender
```

```
    def showData(self):
```

```
        print("Id\t\t:",self.__id)
```

```
        print("Name\t\t:", self.__name)
```

```
        print("Gender\t\t:", self.__gender)
```

```
class Employee(Details):
```

```
    def __init__(self):
```

```
        self.__company("<No Company>")
```

```
        self.__dept("<No Dept>")
```

```
    def setEmployee(self,id,name,gender,comp,dept):
```

```
        self.setData(id,name,gender)
```

```
        self.__company=comp
```

```
        self.__dept=dept
```

```

def showEmployee(self):
    self.showData()
    print("Company\t\t:", self.__company)
    print("Department\t:", self.__dept)

def main():
    e=Employee()
    e.setEmployee(7,"Aarya Arban","Male","Mumbai",400022)
    e.showEmployee()

if __name__=="__main__":
    main()

class Employee:
    def getEmployeeInfo(self):
        self.__id=input("Enter Employee Id:")
        self.__name=input("Enter Name:")
        self.__salary=int(input("Enter Employee Salary:"))

    def printEmployeeInfo(self):
        print("ID : ", self.__id," , name : ", self.__name, ", Basic Salary : ", self.__salary)

    def getSalary(self):
        return(self.__salary)

class Perks(Employee):
    def getPerks(self):
        self.getEmployeeInfo()
        sal=self.getSalary()
        self.__da=sal*35/100
        self.__hra = sal * 17 / 100

```

```

def printPerks(self):
    self.printEmployeeInfo()
    print("Total Salary ", (self.getSalary() + self.__da + self.__hra ) )
S=Perks()
S.getPerks()
print("Employee information ")
S.printPerks()

# Single inheritance with two child classes
class Details:
    def __init__(self):
        self.__id=0
        self.__name=""
        self.__gender=""
    def setDetails(self):
        self.__id=int(input("Enter Id: "))
        self.__name=input("Enter Name: ")
        self.__gender=input("Enter gender: ")
    def showDetails(self):
        print("Id: ",self.__id)
        print("Name: ",self.__name)
        print("Gender: ",self.__gender)
class Employee(Details):
    def __init__(self):
        self.__company=""
        self.__desig=""
    def setEmployee(self):

```

```

self.setDetails()
self.__company=input("Enter Compmany Name: ")
self.__desig=input("Enter Designation: ")
def showEmployee(self):
self.showDetails()
print("Company: ",self.__company)
print("Designation: ",self.__desig)
class Doctor(Details):
def __init__(self):
self.__hospital=""
self.__dept=""
def setDoctor(self):
self.setDetails()
self.__hospital=input("Enter Hospital Name: ")
self.__dept=input("Enter Department: ")
def showDoctor(self):
self.showDetails()
print("Hospital: ",self.__hospital)
print("Department",self.__dept)
def main():
print("Employee Object: ")
e = Employee()
e.setEmployee()
e.showEmployee()
print("\nDoctor Object: ")
d=Doctor()

```

```
d.setDoctor()
d.showDoctor()
if __name__=="__main__":
    main()

# Multiple inheritance
class Personel:
    def __init__(self):
        self.__id=0
        self.__name=""
        self.__gender=""
    def setPersonel(self):
        self.__id=int(input("Enter Id: "))
        self.__name = input("Enter Name: ")
        self.__gender = input("Enter Gender: ")
    def showPersonel(self):
        print("Id: ",self.__id)
        print("Name: ",self.__name)
        print("Gender: ",self.__gender)
class Educational:
    def __init__(self):
        self.__stream=""
        self.__year=""
    def setEducational(self):
        self.__stream=input("Enter Stream: ")
        self.__year = input("Enter Year: ")
    def showEducational(self):
```

```

print("Stream: ",self.__stream)
print("Year: ",self.__year)
class Student(Personel,Educational):
    def __init__(self):
        self.__address = ""
        self.__contact = ""
    def setStudent(self):
        self.setPersonel()
        self.__address = input("Enter Address: ")
        self.__contact = input("Enter Contact: ")
        self.setEducational()
    def showStudent(self):
        self.showPersonel()
        print("Address: ",self.__address)
        print("Contact: ",self.__contact)
        self.showEducational()
def main():
    s=Student()
    s.setStudent()
    s.showStudent()
if __name__=="__main__":
    main()
# Multilevel inheritance
class Details1:
    def __init__(self):
        self.__id=0

```

```
def setId(self):
self.__id=int(input("Enter Id: "))
def showId(self):
print("Id: ",self.__id)
class Details2(Details1):
def __init__(self):
self.__name=""
def setName(self):
self.setId()
self.__name=input("Enter Name: ")
def showName(self):
self.showId()
print("Name: ",self.__name)
class Details3(Details2):
def __init__(self):
self.__gender=""
def setGender(self):
self.setName()
self.__gender=input("Enter Gender: ")
def showGender(self):
self.showName()
print("Gender: ",self.__gender)
class Employee(Details3):
def __init__(self):
self.__desig=""
self.__dept=""
```

```

def setEmployee(self):
    self.setGender()
    self.__desig=input("Enter Designation: ")
    self.__dept= input("Enter Department: ")
def showEmployee(self):
    self.showGender()
    print("Designation: ",self.__desig)
    print("Department: ",self.__dept)
def main():
    e = Employee()
    e.setEmployee()
    e.showEmployee()
if __name__=="__main__":
    main()

```

Output:

Id : 7

Name : Aarya Arban

Gender : Male

Company : Mumbai

Department : 400022

Enter Employee Id:7

Enter Name:Aarya Arban

Enter Employee Salary:50000

Employee information

ID : 7 , name : Aarya Arban , Basic Salary : 50000

Total Salary 76000.0

Employee Object:

Enter Id: 7

Enter Name: Aarya

Enter gender: Male

Enter Compmany Name: Google

Enter Designation: CEO

Id: 7

Name: Aarya

Gender: Male

Company: Google

Designation: CEO

Doctor Object:

Enter Id: 1

Enter Name: Sarthak Joshi

Enter gender: Male

Enter Hospital Name: Global

Enter Department: Neuy Cardiology

Id: 1

Name: Sarthak Joshi

Gender: Male

Hospital: Global

Department Cardiology

Enter Id: 10

Enter Name: Soham

Enter Gender: Male

Enter Address: Kalyan

Enter Contact: 999 004367123

Enter Stream: Science

Enter Year: 2

Id: 10

Name: Soham

Gender: Male

Address: Kalyan

Contact: 9004367123

Stream: Science

Year: 2

Enter Id: 9

Enter Name: Jorden

Enter Gender: Male

Enter Designation: Project Head

Enter Department: Technical

Id: 9

Name: Jorden

Gender: Male

Designation: Project Head

Department: Technical