

**The University of Azad Jammu and**

**Kashmir,Muzaffarabad**

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| Name | Kamal Ali Akmal |
| Roll No | 2024-SE-38 |
| Session | 2024-2028 |
| Instructor | Engr. Awais Rathore |
| Assignment | 01 |
| Subject | Object Oriented Programming |

BankAccount

SavingAccount

**UML Diagram of Single**

**Inheritance**

-

balance : double

-

accountHolder : string

+

BankAccount(name: string,

initialBalance: double)

+

deposit(amount: double): void

+

withdraw(amount: double): void

+

getBalance(): double

+

getAccountHolder(): string

-

interestRate: double

+

SavingsAccount(name: string,

initialBalance: double, rate: double)

+

addInterest(): void

Camera

MusicPlayer

SmartPhone

UML Diagram of Multiple

Inheritance

capturePhoto

()

+

+

recordVideo

()

+

playMusic

()

+

pauseMusic

()

+

makeCall

()

+

sendText

()

Vehicle

Car

ElectricCar

UML Diagram of

Multilevel Inheritance

+

startEngine

()

+

stopEngine

()

drive

()

+

+

honk

()

+

chargeBattery

()

+

showBatteryStatus

()

Vehicle

Car

Bike

Truck

UML Diagram of Hierarchical

Inheritance

+

startEngine

()

+

openTrunk

()

+

kickStart

()

+

loadCargo

()

Person

Teacher

Student

TeachingAssistant

UML Diagram of Hybrid Inheritance

(

Diamond Problem

)

UML Diagram of Hybrid Inheritance

)

Virtual Inheritance

(

Person

Teacher

Student

TeachingAssistant

showIdentity

()

+

teach

+

()

+

study

()

+

assist

()

+

showIdentity

()

+

teach

()

+

study

()

+

assist

()

Computer

Composition and Aggregation

CPU

Keyboard

+

name: string

+

computer

()

+

boot

()

+

speed: double

+

CPU (): void

+

process (): void

+

type: string

+

typing (): void

+

keyboard (): void