**OOP Concept**

**package** enca\_psulation;

**class** Universe {

**public** **void** display() {

System.***out***.println("Hello World");

}

}

//inheritance

**class** World **extends** Universe {

@Override

**public** **void** display() {

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

}

**public** **int** add(**int** x, **int** y) {

**return** x+y;

}

//Overload

**public** **double** add(**double** x,**double** y) {

**return** x+y;

}

}

//encapsulation example

**class** EncapTest {

**private** String name;

**public** String getName() {

**return** name;

}

**public** **void** setName(String newName) {

name = newName;

}

}

//abstraction

**abstract** **class** TwoWheeler {

**public** **abstract** **void** run();

}

**class** Honda **extends** TwoWheeler{

**public** **void** run(){

System.***out***.println("\nbike is Running..");

}

}

**class** MainClass {

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

Universe a=**new** Universe();

a.display();

World b=**new** World();

b.display();

System.***out***.println(b.add(6,2));

System.***out***.println(b.add(5.,2.)); //polymorphism

EncapTest encap = **new** EncapTest();

encap.setName("Sanya");

System.***out***.print("Name : " + encap.getName() );

TwoWheeler test = **new** Honda();

test.run();

}

}

**Java Small Project**

**package** project;

**import** java.util.Scanner;

**public** **class** Email {

**private** String firstName;

**private** String lastName;

**private** String password;

**private** String department;

**private** String email;

**private** **int** mailboxCapacity;

**private** **int** defaultPasswordLength; // when we define password length is 7 it show 7codes line

**private** String alternateEmail;

**private** String companySuffix = "samrudhi123@gmail.com";

//

**public** Email(String firstName, String lastName)

{

**this**.firstName = firstName; //constructor

**this**.lastName = lastName;

System.***out***.println("Email Created :" + **this**.firstName + " " + **this**.lastName);

// call a method for department

**this**.department = setDepartment();

System.***out***.println("Department :" + **this**.department);

//call method for password

**this**.password = randomPassword(defaultPasswordLength);

System.***out***.println("your password is:" + **this**.password);

}

// combine element to generate email

//email = firstName.toLowerCase() + "." + lastName.toLowercase() + "0" + department + "companySuffix";

//System.out.println("your Email is:" + email);

// call department

**private** String setDepartment() {

System.***out***.println("DEPARTMENT CODES\n1 for Sales\n2 for Development\n3 for Accounting\n0 for none \nEnter the department code:");

Scanner in = **new** Scanner(System.***in***);

**int** depChoice = in.nextInt();

**if**(depChoice == 1) {

**return** "sales";

}

**else** **if**(depChoice == 2) {

**return** "dev";

}

**else** **if**(depChoice == 3) {

**return** "acct";

}

**else** { **return** "";}

}

// generate password

**private** String randomPassword(**int** length) {

String passwordSet = "#@$QWERTYUIOP123456";

//array[]

**char**[] password = **new** **char**[length];

**for**(**int** i=0; i<length;i++) {

**int** rand = (**int**)(Math.*random*() \* passwordSet.length());

password[1] = passwordSet.charAt(rand);

System.***out***.println(rand);

System.***out***.println(passwordSet.charAt(rand));

}

**return** **new** String(password);

}

// set the mailbox capacity

**public** **void** setMailboxCapcity(**int** capacity) {

**this**.mailboxCapacity = capacity;

}

//set the alternate email

**public** **void** setAlternateEmail(String altEmail) {

**this**.alternateEmail = altEmail;

}

// set the password

**public** **void** changePassword(String password) {

**this**.password = password;

}

**public** **int** getMaiboxCapacity() {

**return** mailboxCapacity;

}

**public** String getAlternateEmail() {

**return** alternateEmail;

}

**public** String getPassword() {

**return** password;

}

**public** String showInfo() {

**return** "DISPLAY NAME: " + firstName + lastName + "COMPANY EMAIL: " + email + "MAILBOX CAPACITY:" + mailboxCapacity + "ab";

}

}

**package** project;

**public** **class** EmailApp {

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

//constructor

Email em = **new** Email("Samrudhi","Meshram");

// System.out.println(em1.showInfo());

//local variable

//eml.setAlternateEmail("sami@gmail.com");

//System.out.println(eml.getAlternateEmail());

}

}