1.Bank Management.

**Code:**

package com.oops;

class Account{

double bal,Total;

public long accNum;

double balance;

String accHolderName;

public Account() {

}

public Account(long accNum, double balance, String accHolderName) {

this.accNum = accNum;

this.balance = balance;

this.accHolderName = accHolderName;

}

public long getAccountNumber()

{

return accNum;

}

public void setAccountNumber(long accNum)

{

this.accNum=accNum;

}

public double getBalance() {

return balance;

}

public void setBalance(double balance) {

this.balance = balance;

}

public String getAccHolderName() {

return accHolderName;

}

public void setAccHolderName(String accHolderName) {

this.accHolderName = accHolderName;

}

public void deposit(double amount)

{

balance+=amount;

}

public void withdraw(double amount)

{

bal=balance;

Total+=amount;

bal=bal-amount;

if(bal<=500)

{

System.out.println("Cannont Withdrawal the amount");

return;

}

balance-=amount;

}

}

public class Person extends Account{

public Person(long accNum, double balance, String accHolderName) {

super(accNum, balance, accHolderName);

}

private String name;

private byte age;

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public byte getAge() {

return age;

}

public void setAge(byte age) {

this.age = age;

}

public static void main(String[] args) {

Person smith=new Person(5433890456l,2000,"smith");

Person kathy=new Person(34567887621l,3000,"kathy");

smith.deposit(2000);

kathy.withdraw(2000);

// Savings\_Account savings = new Savings\_Account(5433890456l,200,"smith");

System.out.println(smith.getAccHolderName()+": "+smith.getBalance());

System.out.println(kathy.getAccHolderName()+": "+kathy.getBalance());

}

}

class Savings\_Account extends Account{

final double minimum\_Balance=500;

@Override

public void withdraw(double amount)

{

if(balance<=minimum\_Balance)

{

System.out.println("Cannont Withdrawal the amount");

return;

}

}

}

class CurrentAccount extends Account{

double overdraft = 5000;

public void withdraw(double amount)

{

if(Total>overdraft)

{

System.out.println("True");

return;

}

else {

System.out.println("False");

}

}

}

Output:

A screenshot of a computer

Description automatically generated

2.Library Management

Code:

package com.oops;

abstract class Item{

private int id;

private String title;

private int noOfCopies;

Item(){

}

Item(int id,String title,int noOfCopies)

{

this.id=id;

this.title=title;

this.noOfCopies=noOfCopies;

}

public int getId() {

return id;

}

public void setId(int id)

{

this.id=id;

}

public String getTitle() {

return title;

}

public void setTitle(String title) {

this.title = title;

}

public int getNoOfCopies() {

return noOfCopies;

}

public void setNoOfCopies(int noOfCopies) {

this.noOfCopies = noOfCopies;

}

public void checkOut()

{

if(noOfCopies>0)

{

noOfCopies--;

System.out.println(title +" is Checked Out by "+id);

}else {

System.out.println("Not Available");

}

}

public void checkIn()

{

noOfCopies++;

System.out.println(title+" is returned by "+id);

}

public void addItem(int noOfCount) {

noOfCopies+=noOfCount;

System.out.println("Total Quantity of Book "+title+" is: "+noOfCopies);

}

@Override

public String toString() {

return "Item [Id=" + id + ", Title=" + title + ", Number of Copies= " + noOfCopies + "]";

}

public abstract void print();

}

abstract class WrittenItem extends Item{

public WrittenItem(int id, String title, int noOfCopies,int year) {

super(id, title, noOfCopies);

}

public WrittenItem(int id, String title, int noOfCopies,String author) {

super(id, title, noOfCopies);

}

private String author;

public String getAuthor() {

return author;

}

public void setAuthor(String author) {

this.author = author;

}

@Override

public String toString() {

return "WrittenItem [author=" + author + "]";

}

}

class Book extends WrittenItem{

Book(int id,String title,int noOfCopies,String author)

{

super(id,title,noOfCopies,author);

}

@Override

public void print()

{

System.out.println("Id of the Book: "+getId());

System.out.println("Title of the Book: "+getTitle());

System.out.println("Number of Copies for a book: "+getNoOfCopies());

System.out.println("Author of the Book: "+getAuthor());

}

}

class JournalPaper extends WrittenItem{

JournalPaper(int id,String title,int noOfCopies,int year)

{

super(id,title,noOfCopies,year);

}

private int year;

public int getYear() {

return year;

}

public void setYear(int year) {

this.year = year;

}

public void print()

{

System.out.println("Id of the Book: "+getId());

System.out.println("Title of the Book: "+getTitle());

System.out.println("Number of Copies for a book: "+getNoOfCopies());

System.out.println("Year of the Book released: "+getYear());

}

}

abstract class MediaItem extends Item{

private int runtime;

public int getRuntime() {

return runtime;

}

public void setRuntime(int runtime) {

this.runtime = runtime;

}

}

class Video extends MediaItem{

private String director;

private String genre;

private int year;

public Video(String director, String genre, int year) {

super();

this.director = director;

this.genre = genre;

this.year = year;

}

public String getDirector() {

return director;

}

public void setDirector(String director) {

this.director = director;

}

public String getGenre() {

return genre;

}

public void setGenre(String genre) {

this.genre = genre;

}

public int getYear() {

return year;

}

public void setYear(int year) {

this.year = year;

}

@Override

public String toString() {

return "Video [director=" + director + ", genre=" + genre + ", year=" + year + "]";

}

@Override

public void print()

{

System.out.println("Video Deatails: "+this);

}

}

class CD extends MediaItem{

private String artist;

private String genre;

public String getArtist() {

return artist;

}

public void setArtist(String artist) {

this.artist = artist;

}

public String getGenre() {

return genre;

}

public void setGenre(String genre) {

this.genre = genre;

}

@Override

public String toString() {

return "CD [artist=" + artist + ", genre=" + genre + "]";

}

@Override

public void print()

{

System.out.println("CD Deatails: "+this);

}

}

public class Library {

public static void main(String[] args) {

Book book=new Book(23667,"Harry Potter",12,"Jimmy");

JournalPaper paper=new JournalPaper(23667,"Harry Potter",12,2005);

Video video=new Video("Jimmy","Fantasy",2005);

CD cd=new CD();

cd.setArtist("Harry");

cd.setGenre("Fantasy");

book.checkOut();

book.checkIn();

book.addItem(3);

System.out.println(book.getNoOfCopies());

book.print();

System.out.println("=======================================================================================================================================");

paper.print();

System.out.println("=======================================================================================================================================");

video.toString();

video.print();

System.out.println("=======================================================================================================================================");

cd.toString();

cd.print();

}

}

Output:

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