

```
import java.util.Scanner;
```

```
abstract class Account {  
    double amount;  
    abstract double calculateInterest();  
}
```

```
class FDAccount extends Account {  
    int days, age;  
    FDAccount(double amount, int days, int age) {  
        if (amount < 0 || days < 0 || age < 0) throw new IllegalArgumentException("Invalid input.");  
        this.amount = amount;  
        this.days = days;  
        this.age = age;  
    }  
    double calculateInterest() {  
        double[][] rates = {{4.5, 5}, {4.75, 5.25}, {5.5, 6}, {7, 7.5}, {7.5, 8}, {8, 8.5}};  
        int[] range = {14, 29, 45, 60, 184, 365};  
        for (int i = 0; i < range.length; i++) {  
            if (days <= range[i]) return amount * rates[i][age >= 60 ? 1 : 0] / 100;  
        }  
        return 0;  
    }  
}
```

```
class SBAccount extends Account {  
    boolean isNRI;  
    SBAccount(double amount, boolean isNRI) {  
        if (amount < 0) throw new IllegalArgumentException("Invalid amount.");  
        this.amount = amount;  
        this.isNRI = isNRI;  
    }  
}
```

```

    }

    double calculateInterest() {
        return amount * (isNRI ? 6 : 4) / 100;
    }
}

```

```

class RDAccount extends Account {
    int months;

    RDAccount(double amount, int months) {
        if (amount < 0 || months < 0) throw new IllegalArgumentException("Invalid input.");
        this.amount = amount;
        this.months = months;
    }

    double calculateInterest() {
        double[] rates = {7.5, 7.75, 8, 8.25, 8.5, 8.75};
        int[] range = {6, 9, 12, 15, 18, 21};
        for (int i = 0; i < range.length; i++) {
            if (months == range[i]) return amount * rates[i] * months / 100;
        }
        return 0;
    }
}

```

```

public class InterestCalculator {
    public static void main(String[] args) {
        Scanner s = new Scanner(System.in);
        while (true) {
            System.out.println("1. SB Interest\n2. FD Interest\n3. RD Interest\n4. Exit");
            int choice = s.nextInt();
            if (choice == 4) break;
            try {

```

```

System.out.println("Enter amount:");

double amount = s.nextDouble();

switch (choice) {

    case 1:

        System.out.println("NRI? (true/false):");

        boolean isNRI = s.nextBoolean();

        System.out.println("Interest: Rs. " + new SBAccount(amount, isNRI).calculateInterest());

        break;

    case 2:

        System.out.println("Days:");

        int days = s.nextInt();

        System.out.println("Age:");

        int age = s.nextInt();

        System.out.println("Interest: Rs. " + new FDAccount(amount, days,
age).calculateInterest());

        break;

    case 3:

        System.out.println("Months:");

        int months = s.nextInt();

        System.out.println("Interest: Rs. " + new RDAccount(amount,
months).calculateInterest());

        break;

    default:

        System.out.println("Invalid choice.");

}

} catch (Exception e) {

    System.out.println(e.getMessage());

}

}

s.close();

}

}

```