Interest Calculator

Calculate interest based on the type of the account and the status of the account holder. The rate of interest changes according to the amount (greater than or less than 1 crore), age of the account holder (General or Senior citizen) and the number of days if the type of account is FD or RD.

Applicable rates are as given in the below tables:

Rate of FD interest for amounts below 1 Crore:

Maturity Period	Current Rates of interest (in %)	
	General	Senior Citizen
7 days to 14 days	4.50	5.00
15 days to 29 days	4.75	5.25
30 days to 45 days	5.50	6.00
45 days to 60 days	7	7.50
61 days to 184 days	7.50	8.00
185 days to 1 year	8.00	8.50

Rate of FD interest for amounts above 1 Crore:

Maturity Period	Interest Rate
7 days to 14 days	6.50
15 days to 29 days	6.75
30 days to 45 days	6.75
45 days to 60 days	8
61 days to 184 days	8.50
185 days to 1 year	10.00

Rate of RD interests:

Maturity Period	Current Rates of interest	
	General	Senior Citizen
6 months	7.50	8.00
9 months	7.75	8.25
12 months	8.00	8.50
15 months	8.25	8.75
18 months	8.50	9.00
21 months	8.75	9.25

SB Account interest rates:

Type of Account	Interest Rate
Normal	4%
NRI	6%

Requirements:

1. Separate classes should be created for the different types of accounts.
2. All classes should be derived from an abstract class named 'Account' which should contain a method called 'calculateInterest'.
3. Implement the 'calculateInterest' method according to the type of the account, interest rates, amount and age of the account holder.
4. If the user enters an invalid value (For e.g. negative value) in any field, raise a user defined exception.

<u>Sample class structures are given below:</u>

Account(Abstract)
double interestRate
double amount
Abstract double calculateInterest()

FDAccount
double interestRate
double amount
int noOfDays
int ageOfACHolder
abstract double calculateInterest()

SBAccount
double interestRate
double amount
abstract double calculateInterest()

RDAccount
double interestRate
double amount
int noOfMonths;
double monthlyAmount;
abstract double calculateInterest()

Hint: Use method overriding

Sample Output:

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MAIN MENU
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    1. Interest Calculator – SB
    2. Interest Calculator – FD
    3. Interest Calculator – RD
    4. Exit
Enter your option (1..4): 1
Enter the Average amount in your account: 10000
Interest gained: Rs. 400

MAIN MENU
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    1. Interest Calculator –SB
    2. Interest Calculator –FD
    3. Interest Calculator –RD
    4. Exit
Enter your option (1..4): 2
Enter the FD amount: 10000
Enter the number of days: 91
Enter your age: 65
Interest gained is: Rs. 800

MAIN MENU
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    1. Interest Calculator –SB
    2. Interest Calculator –FD
    3. Interest Calculator –RD
    4. Exit
Enter your option (1..4): 2
Enter the FD amount: 10000
Enter the number of days:  91
Enter your age:  34
Interest gained is: Rs. 750

MAIN MENU
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    1. Interest Calculator –SB
    2. Interest Calculator –FD
    3. Interest Calculator –RD
    4. Exit
Enter your option (1..4): 2
Enter the FD amount: 10000
Enter the number of days: -7
Enter your age: 78
Invalid Number of days. Please enter non-negative values.
```