import java.util.ArrayList;

import java.util.Scanner;

public class Main {

private static ArrayList<Integer> expenses = new ArrayList<Integer>();

public static void main(String[] args) {

System.out.println("\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

System.out.println("\tWelcome to TheDesk \n");

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

expenses.add(1000);

expenses.add(2300);

expenses.add(45000);

expenses.add(32000);

expenses.add(110);

optionsSelection();

}

private static void optionsSelection() {

String[] arr = {"1. I wish to review my expenditure",

"2. I wish to add my expenditure",

"3. I wish to delete my expenditure",

"4. I wish to sort the expenditures",

"5. I wish to search for a particular expenditure",

"6. Close the application"

};

int[] arr1 = {1,2,3,4,5,6};

int slen = arr1.length;

for(int i=0; i<slen;i++){

System.out.println(arr[i]);

}

System.out.println("\nEnter your choice:\t");

Scanner sc = new Scanner(System.in);

int options = sc.nextInt();

for(int j=1;j<=slen;j++){

if(options==j){

switch (options){

case 1:

System.out.println("Your saved expenses are listed below: \n");

System.out.println(expenses+"\n");

optionsSelection();

break;

case 2:

System.out.println("Enter the value to add your Expense: \n");

int value = sc.nextInt();

expenses.add(value);

System.out.println("Your value is updated\n");

System.out.println(expenses+"\n");

optionsSelection();

break;

case 3:

System.out.println("You are about the delete all your expenses! \nConfirm again by selecting the same option...\n");

int con\_choice = sc.nextInt();

if(con\_choice==options){

expenses.clear();

System.out.println(expenses+"\n");

System.out.println("All your expenses are erased!\n");

} else {

System.out.println("Oops... try again!");

}

optionsSelection();

break;

case 4:

sortExpenses(expenses);

optionsSelection();

break;

case 5:

searchExpenses(expenses, sc);

optionsSelection();

break;

case 6:

closeApp();

break;

default:

System.out.println("You have made an invalid choice!");

break;

}

}

}

}

private static void closeApp() {

System.out.println("Closing your application... \nThank you!");

}

private static void searchExpenses(ArrayList<Integer> arrayList, Scanner sc) {

//Complete the method

int leng = arrayList.size();

int i = 0;

int search;

boolean found = false;

System.out.println("Enter the expense you need to search:\t");

search = sc.nextInt();

while(i < leng) {

if (arrayList.get(i) == search) {

System.out.println("Expense found at index " + i);

System.out.println();

i = leng;

}

else {

i++;

}

}

if(found == false)

System.out.println("Expense not found");

}

private static void sortExpenses(ArrayList<Integer> arrayList) {

//Complete the method. The expenses should be sorted in ascending order.

System.out.println("Sorting expenses now...");

mergeSort(arrayList);

System.out.println("Expenses sorted.");

System.out.println(expenses+"\n");

System.out.println();

}

private static void mergeSort(ArrayList<Integer> a) {

if (a.size()<=1)

return;

int mid = a.size()/2;

ArrayList<Integer> left = new ArrayList<Integer>();

ArrayList<Integer> right = new ArrayList<Integer>();

for(int i = 0; i < mid; i++)

left.add(a.remove(0));

while (a.size()!=0)

right.add(a.remove(0));

mergeSort(left);

mergeSort(right);

while (left.size()!=0 && right.size()!=0) {

if (left.get(0) < right.get(0))

a.add(left.remove(0));

else

a.add(right.remove(0));

}

while(left.size()!=0)

a.add(left.remove(0));

while(right.size()!=0)

a.add(right.remove(0));

}

}