CODE

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import java.util.*;
abstract class Robber{
	void RobbingClass(){
		System.out.println("MScAI&ML");
	}
	Robber(){
		System.out.println("I love MachineLearning.");
	}
	abstract int RowHouses(int a[]);
	abstract int RoundHouses(int a[]);
	abstract int SquareHouse(int a[]);
	abstract int MultiHouse(int a[]);
}
class JAVAProfessionalRobber extends Robber{
	int RowHouses(int a[]){
		int max[]=new int[3];
		max[0]=a[0]+a[2];//adding 1st and 3rd
		max[1]=a[1]+a[3];//adding 2nd and 4th
		max[2]=a[0]+a[3];//adding 1st and 4th
		int maxi=0;
		for(int i=0;i<3;i++){
			if(maxi<max[i]){
				maxi=max[i];
			}
		}
		return maxi;
	}
	int RoundHouses(int a[]){
		int left=0,right=0;
		for(int i=0;i<a.length;i++){
			if(i%2==0){
				left+=a[i];//adding even places
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                }
                else{
                        right+=a[i];//adding odd places
                }
        }
        if(left>right){
                return left;
        }
        else{
                return right;
        }
}
int SquareHouse(int a[]){
        int left=0,right=0;
        for(int i=0;i<a.length;i++){
                if(i%2==0){
                        left+=a[i];//adding even places
                }
                else{
                        right+=a[i];//adding odd places
                }
        }
        if(left>right){
                return left;
        }
        else{
                return right;
        }
}
int MultiHouse(int a[]){
        int max[]=new int[4];
        int maxi=0;
        max[0]=a[0]+a[3];//adding 1st and 4th
        max[1]=a[0]+a[2]+a[4];//adding odd places
        max[2]=a[1]+a[3]+a[5];//adding even places
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            max[3]=a[2]+a[5];//adding 3rd and 6th
            for(int i=0;i<4;i++){
                if(maxi<max[i]){
                    maxi=max[i];
                }
            }
            return maxi;
        }
}
class Lab4{
        public static void main(String[] args) {
            Scanner sc=new Scanner(System.in);
            int a=0,max=0;
            JAVAProfessionalRobber obj=new JAVAProfessionalRobber();
            int array[]=new int[6];
            do
            {
                System.out.println("Choose a housing type:\n1.Row
House\n2.Square House\n3.Circle House\n4.Multi House");
                int b=sc.nextInt();
                if(b!=4){//first 3 cases need 4 houses
                    for(int i=0;i<4;i++){
                        System.out.println("Enter amount in house
"+(i+1));
                        array[i]=sc.nextInt();
                    }
                }
                else{//last case needs 6 houses
                    for(int i=0;i<6;i++){
                        System.out.println("Enter amount in house
"+(i+1));
                        array[i]=sc.nextInt();
                    }
                }
                switch(b){
```

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                        case 1: max=obj.RowHouses(array);
                                break;
                        case 2: max=obj.SquareHouse(array);
                                break;
                        case 3: max=obj.RoundHouses(array);
                                break;
                        case 4: max=obj.MultiHouse(array);
                                break;
                        default: System.out.println("Invalid Choice!");
                    }
                    System.out.println("Profit="+max);
                    System.out.println("Do you want to Rob
again:\n1.Yes\n2.No");
                    a=sc.nextInt();
                }while(a!=2);
                System.out.println("Good");
        }
}
```

OUTPUT

```
I love MachineLearning.
Choose a housing type:
1.Row House
2.Square House
3.Circle House
4.Multi House
1
Enter amount in house 1
100
Enter amount in house 2
200
Enter amount in house 3
50
Enter amount in house 4
150
Profit=350
Do you want to Rob again:
1.Yes
2.No
1
Choose a housing type:
1.Row House
2.Square House
3.Circle House
4.Multi House
```

2
Enter amount in house 1
100
Enter amount in house 2
200
Enter amount in house 3
50
Enter amount in house 4
50
Profit=250
Do you want to Rob again:
1.Yes
2.No
1
Choose a housing type:
1.Row House
2.Square House
3.Circle House
4.Multi House
3
Enter amount in house 1
100
Enter amount in house 2
200
Enter amount in house 3
300
Enter amount in house 4
400
Profit=600
Do you want to Rob again:
1.Yes
2.No
1
Choose a housing type:
1.Row House
2.Square House
3.Circle House
4.Multi House
4
Enter amount in house 1
50
Enter amount in house 2
9
Enter amount in house 3
12
Enter amount in house 4
100
Enter amount in house 5
18
Enter amount in house 6
20
Profit=150
Do you want to Rob again:
1.Yes
2.No
2
Good