

## Happy Number (Problem 2)

**Explanation:** The problem is to find the happy number. To check whether the number is happy or not first we need to separate the given into then square it and add it. If the output is 1 then the given number is a Happy Number.

```
class Solution {
    public boolean isHappy(int n) {

        List<Integer>used = new ArrayList<Integer>(); // creating a Array List

        while(n>0) // Running the loop till n becomes 0
        {
            int tmp = 0; // intializing temp with 0
            while(n>0) // Running the loop till n becomes 0
            {
                int i = n%10; // seperating one value by modulo 10

                tmp += i*i; // squaring the seperated value and adding in temp
                n = n/10; // diving n by 10 to eliminate the used value
            }

            if(used.contains(tmp)) // checking whether tmp value is present in the array list
            {
                return false; // if found return false
            }
            else
            {
                used.add(tmp); // else add the temp value to the array list
            }
        }
    }
}
```

```

    }

    if(tmp==1) // checking whether tmp is equal to 1
    {
        return true; // if yes then return true since it's a happy value
    }

    n = tmp; // again storing the tmp value in n

}

return false; // if n is not equal to 1 then return false
}
}

```

## Palindrome Number (Problem 3)

**Explanation: Palindrome** is the name derived if the given input is reversed and gives the same output as the input. The number or string is a **Palindrome**.

```

class Solution {
    public boolean isPalindrome(int x) {
        int rev = 0; // initializing rev with 0
        int original = x; // storing x in original for future comparison
        while(x != 0) { // running the loop till x is not 0
            int num = x % 10; // separating the value by modulo operation
            rev = rev * 10 + num; // storing the separated value in rev by multiplying 10
            x = x / 10; // dividing x by 10 to remove the added value
        }
    }
}

```

```
}
```

```
if(original >= 0 && original == rev){
```

```
// comparing wheather x is equal to original input and original is greater if both becomes true it will  
return true or else false
```

```
    return true;
```

```
}
```

```
    return false;
```

```
}
```

```
}
```