slip9

```
public class s9q1 {
   public static void main(String args[]) {
      int i, j, k=1;
      for(i=1; i<5; i++) {
         for(j=1; j<=i; j++) {
            if(k%2 == 0) {
               System.out.print("0");
            }
            else {
               System.out.print("1");
            }
            k++;
         }
         System.out.println();
      }
   }
}
```

```
class InvalidDataException extends Exception {
   InvalidDataException(String string) {}
}


class s9q2 {
```

```
    public static void main(String[] args) {
        String pan = "PAN1234567";
        String mobile = "1234567890";

        try {
            if(pan.length() != 10) {
                throw new InvalidDataException("Invalid PAN Number");
            }
            if(mobile.length() != 10) {
                throw new InvalidDataException("Invalid Mobile Number");
            }
            System.out.println("Valid PAN Number and Mobile Number");
        }
        catch(InvalidDataException e) {
            System.out.println("Invalid Data");
        }
    }
}
```

```
class StringReverser:
    def __init__(self):
        self.user_string = ""

    def get_string(self):
```

```
        self.user_string = input("Enter a string: ")

    def reverse_string(self):

        words = self.user_string.split()
        reversed_words = ' '.join(reversed(words))
        return reversed_words

s1 = StringReverser()

s1.get_string()

reversed_result = s1.reverse_string()

print("Reversed String:", reversed_result)
```

```
import tkinter as tk
from tkinter import messagebox

def is_prime(n):

    if n <= 1:
        return False
    for i in range(2, int(n**0.5) + 1):
```

```
        if n % i == 0:
            return False
    return True

def is_perfect(n):

    return n == sum(i for i in range(1, n) if n % i == 0)

def is_armstrong(n):

    num_str = str(n)
    power = len(num_str)
    return n == sum(int(digit) ** power for digit in num_str)

def check_number():

    try:
        n = int(entry.get())
        selection = radio_var.get()
        result = ""

        if selection == 1:
            result = "Prime" if is_prime(n) else "Not Prime"

        elif selection == 2:
            result = "Perfect Number" if is_perfect(n) else "Not Perfect Number"
```

```
        elif selection == 3:
            result = "Armstrong Number" if is_armstrong(n) else "Not Armstrong Number"

        messagebox.showinfo("Result", f"{result}")

    except ValueError:
        messagebox.showerror("Error", "Please enter a valid integer.")

root = tk.Tk()
root.title("Number Checker")

label = tk.Label(root, text="Enter a number:")
label.pack(pady=10)

entry = tk.Entry(root)
entry.pack(pady=5)

radio_var = tk.IntVar(value=1)

radio_prime = tk.Radiobutton(root, text="Check if Prime", variable=radio_var, value=1)
radio_prime.pack(anchor='w')

radio_perfect = tk.Radiobutton(root, text="Check if Perfect", variable=radio_var, value=2)
```

```
radio_perfect.pack(anchor='w')

radio_armstrong = tk.Radiobutton(root, text="Check if Armstrong", variable=radio_var, value=3)

radio_armstrong.pack(anchor='w')


check_button = tk.Button(root, text="Check Number", command=check_number)

check_button.pack(pady=20)


root.mainloop()
```