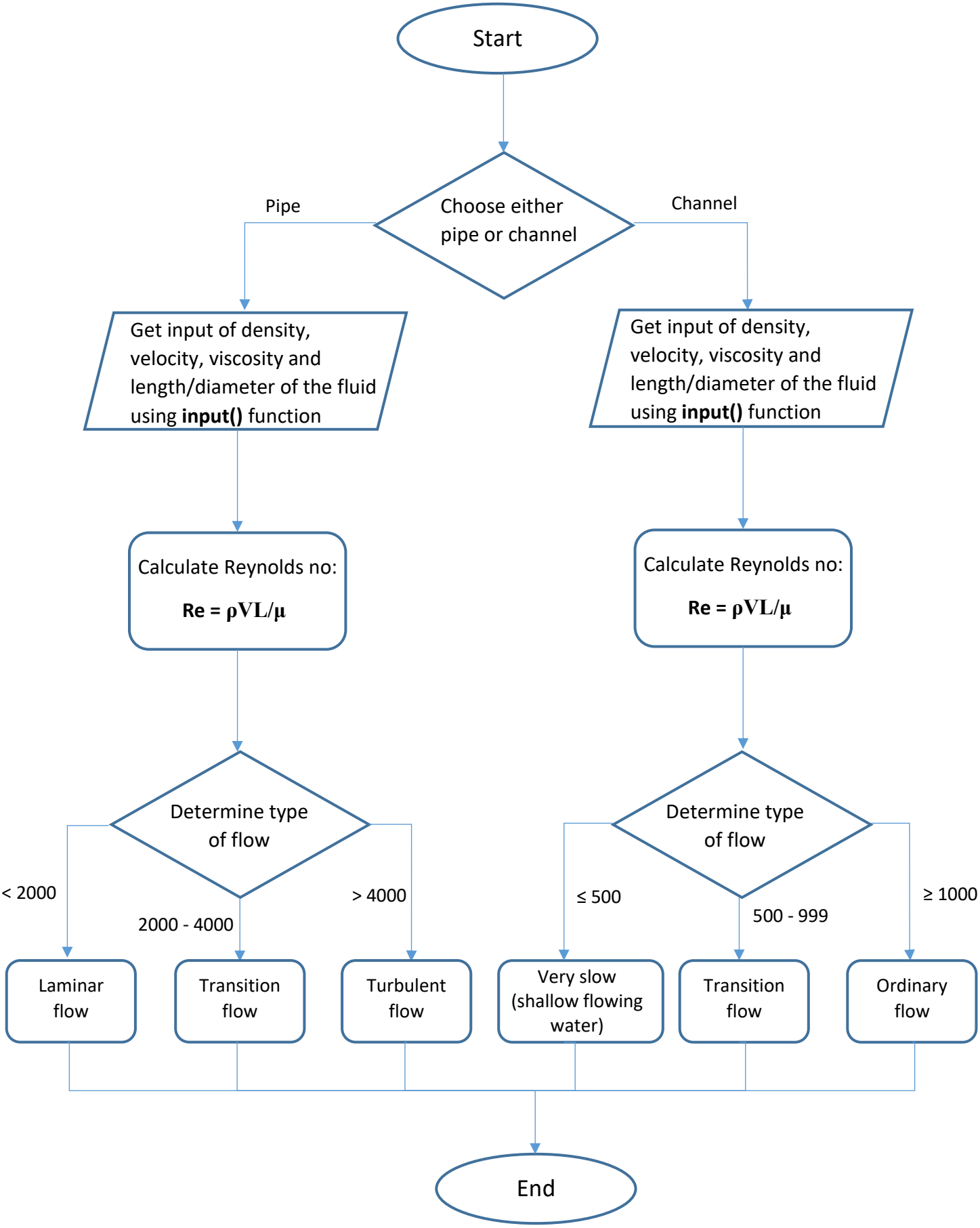
Start
Choose either pipe or channel
Pipe
Channel
Get input of density, velocity, viscosity and length/diameter of the fluid using **input()** function
Get input of density, velocity, viscosity and length/diameter of the fluid using **input()** function
Calculate Reynolds no:
Re = ρVL/μ
Calculate Reynolds no:
Re = ρVL/μ
Determine type of flow
Determine type of flow
< 2000
2000 - 4000
> 4000
≤ 500
500 - 999
≥ 1000
Laminar flow
Transition flow
Turbulent flow
Very slow (shallow flowing water)
Transition flow
Ordinary flow
End

Codes:

```
import tkinter as tk

print('\n**************************************************
***************')
print('*
*')
print('* Calculate te Reynolds number of the fluid flow in
Pipes/Channels *')
print('*
*')
print('**************************************************
*************\n')

my_w = tk.Tk()
my_w.geometry("400x200")  # Size of the window
my_w.title("Please select Pipe or Channel?")  # Adding a title

def display_selected(choice):
    choice = options.get()
    print(choice)

pipe_channel = ['Pipe','Channel']

options = tk.StringVar(my_w)
options.set(pipe_channel[0]) # default value

label = tk.Label(my_w,  text='Select One', width=15 )
label.grid(row=5,column=1)

om1 =tk.OptionMenu(my_w, options, *pipe_channel,
command=display_selected)
om1.grid(row=5,column=2)
my_w.mainloop()
choice = options.get()

density = float(input("Enter the density of the fluid (kg/m3):
"))
velocity = float(input("Enter the velocity of the fluid (m/s):
"))
length = float(input("Enter the length or diameter of the
fluid (m): "))
viscosity = float(input("Enter the dynamic viscosity of the
fluid (kg/m.s): "))
```

```
reynolds_no = (density*velocity*length)/viscosity
print("\nThe Reynolds number of the fluid is",
round(reynolds_no,2))

if choice == "Pipe":
    if reynolds_no < 2000:
        print("\nIt is a Laminar flow.")
    elif reynolds_no >= 2000 and reynolds_no <= 4000:
        print("\nIt is a Transition flow.")
    else:
        print("\nIt is a Turbulent flow.")
else:
    if reynolds_no <= 500:
        print("\nVery slow (shallow flowing water).")
    elif reynolds_no >= 501 and reynolds_no <= 999:
        print("\nIt is a Transition flow.")
    else:
        print("\nIt is an Ordinary flow.")

print('\n************************* End of program
**************************')
```

Output: