lab7.py

```python
#print the first 10 natural number using for loop in python

for i in range(1, 11):
    print(i)


#2 question
def is_palindrome_number(n):
    num_str = str(n)
    length = len(num_str)

    for i in range(length // 2):
        if num_str[i] != num_str[length - i - 1]:
            return False
    return True


input_number = 121
if is_palindrome_number(input_number):
    print(f'{input_number} is a palindrome number.')
else:
    print(f'{input_number} is not a palindrome number.')


#3question Armstrong number

def is_armstrong_number(n):

    num_str = str(n)

    num_digits = len(num_str)

    sum_of_powers = 0


    for digit in num_str:
        # Convert the digit back to an integer, raise it to the power of the number of digits, and add it to the sum
        sum_of_powers += int(digit) ** num_digits

    # Check if the sum of powers is equal to the original number
    return sum_of_powers == n

# Example usage
input_number = 153
if is_armstrong_number(input_number):
    print(f'{input_number} is an Armstrong number.')
else:
    print(f'{input_number} is not an Armstrong number.')


 # 4 question Fibonacci numbers
```

```
52
53  a, b = 0, 1
54
55
56  print(a)
57
58
59  for _ in range(50):
60      if b > 50:
61          break
62      print(b)
63      a, b = b, a + b
64
65  #5 Question
66
67  def is_valid_password(password):
68
69      if len(password) < 8:
70          print("Password must be at least 8 characters long.")
71          return False
72
73      has_lower = False
74      has_upper = False
75      has_digit = False
76      has_special = False
77
78      special_characters = "!@#$%^&*()"
79
80
81      for char in password:
82          if char.islower():
83              has_lower = True
84          elif char.isupper():
85              has_upper = True
86          elif char.isdigit():
87              has_digit = True
88          elif char in special_characters:
89              has_special = True
90
91
92      if not has_lower:
93          print("Password must contain at least one lowercase letter.")
94          return False
95      if not has_upper:
96          print("Password must contain at least one uppercase letter.")
97          return False
98      if not has_digit:
99          print("Password must contain at least one digit.")
100         return False
101     if not has_special:
102         print("Password must contain at least one special character.")
103         return False
104
105     return True
```

```
106
107
108 while True:
109     user_password = input("Enter your password: ")
110
111     if is_valid_password(user_password):
112         print("Password is valid!")
113         break
114     else:
115         print("Invalid password. Please try again.")
116
```