	Marwadi University
	Faculty of Engineering & Technology
	Department of Information and Communication Technology
Subject: Programming With Python (01CT1309)	**Aim:** Practical demonstrate to validate PAN card number and Email ID.
Experiment No: 23	**Date:**	**Enrollment No: 92400133181**

Aim: Practical demonstrate to validate PAN card number and Email ID.

IDE:

For this experiment, you only need the built-in **re** library for regular expressions, which comes with Python.

Validating a PAN Card Number

PAN Card Format:

- A PAN (Permanent Account Number) card in India consists of 10 characters.

- The first five characters are uppercase letters (A-Z).

- The next four characters are digits (0-9).

- The last character is an uppercase letter (A-Z).

Regular Expression:

^[A-Z]{5}[0-9]{4}[A-Z]{1}$

import re

def validate_pan(pan):

   pattern = r'^[A-Z]{5}[0-9]{4}[A-Z]{1}$'

   if re.match(pattern, pan):

      return True

   return False

Test the function

pan_number = input("Enter PAN card number: ")

if validate_pan(pan_number):

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```
print("Valid PAN card number.")

else:

    print("Invalid PAN card number.")
```

Validating an Email ID

```
1    import re
2
3    def validate_pan(pan):
4        pattern = r'^[A-Z]{5}[0-9]{4}[A-Z]{1}$'
5        if re.match(pattern, pan):
6            return True
7        return False
8
9    # Test the function
10   pan_number = input("Enter PAN card number: ")
11   if validate_pan(pan_number):
12       print("Valid PAN card number.")
13   else:
14       print("Invalid PAN card number.")
15
```

Output:

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```
In [22]: %runfile C:/Users/devah/Documents/PWP/untitled5.py --wdir
Enter PAN card number: ABCDE1234A
Valid PAN card number.

In [23]: %runfile C:/Users/devah/Documents/PWP/untitled5.py --wdir
Enter PAN card number: abcde1234a
Invalid PAN card number.

In [24]: %runfile C:/Users/devah/Documents/PWP/untitled5.py --wdir
Enter PAN card number: ABCDE1234a
Invalid PAN card number.

In [25]: %runfile C:/Users/devah/Documents/PWP/untitled5.py --wdir
Enter PAN card number: 1234567890
Invalid PAN card number.

In [26]: %runfile C:/Users/devah/Documents/PWP/untitled5.py --wdir
Enter PAN card number: ABCDE12345
Invalid PAN card number.
```

Email Format:

- An email consists of local and domain parts, separated by an @ symbol.

- The local part can include letters, digits, dots, underscores, and hyphens.

- The domain part should consist of a domain name and a top-level domain (TLD), such as .com, .org, etc.

Regular Expression:

^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$

def validate_email(email):

    pattern = r'^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$'

    if re.match(pattern, email):

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return True

return False

Test the function

email_id = input("Enter email ID: ")

if validate_email(email_id):

   print("Valid email ID.")

else:

   print("Invalid email ID.")

```
16    def validate_email(email):
17        pattern = r'^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$'
18        if re.match(pattern, email):
19            return True
20        return False
21
22    # Test the function
23    email_id = input("Enter email ID: ")
24    if validate_email(email_id):
25        print("Valid email ID.")
26    else:
27        print("Invalid email ID.")
28
```

Output:

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Post Lab:

Write a code combine both validations into a single program

Code:

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```python
import re

def validate_pan(pan):
    pattern = r'^[A-Z]{5}[0-9]{4}[A-Z]{1}$'
    return bool(re.match(pattern, pan))

def validate_email(email):
    pattern = r'^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$'
    return bool(re.match(pattern, email))

pan = input("Enter PAN card number: ")
email = input("Enter Email ID: ")

print("\n--- Validation Results ---")

if validate_pan(pan):
    print("PAN Card: Valid")
else:
    print("PAN Card: Invalid")

if validate_email(email):
    print("Email ID: Valid")
else:
    print("Email ID: Invalid")
```

Output:

	Marwadi University
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```
In [39]: %runfile 'C:/Users/devah/Documents/PWP/Validating PAN and Email in a single program
PWP Lab 23.py' --wdir
Enter PAN card number: ABCDE1234A
Enter Email ID: devaharsha@gmail.com

--- Validation Results ---
PAN Card: Valid
Email ID: Valid

In [40]: %runfile 'C:/Users/devah/Documents/PWP/Validating PAN and Email in a single program
PWP Lab 23.py' --wdir
Enter PAN card number: ABCDE1234A
Enter Email ID: devaharsha@gmailcom

--- Validation Results ---
PAN Card: Valid
Email ID: Invalid

In [41]: %runfile 'C:/Users/devah/Documents/PWP/Validating PAN and Email in a single program
PWP Lab 23.py' --wdir
Enter PAN card number: abcde1234a
Enter Email ID: devaharsha@gmail.com

--- Validation Results ---
PAN Card: Invalid
Email ID: Valid
```

GitHub:

https://github.com/mallaadisrinivasu132035-code/python.git