

1(a) Program :

```
import re
text = """Hello team, our new product launch is planned for 25/01/2026 at 10:30 AM.
Please contact marketingteam@startupAI.com or support@startupAI.com for more
details.
Follow us on social media using #StartupAI #ProductLaunch.
Visit our website at https://www.startupAI.com for more info.
The early bird price is 2999$ (limited offer!!) and valid for 100 users only."""
hashtags = re.findall(r"#\w+", text)
mentions = re.findall(r"@[\w]+", text)
emails = re.findall(r"[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}", text)
urls = re.findall(r"https?://[^\s]+", text)
dates = re.findall(r"\b\d{1,2}/\d{1,2}/\d{4}\b", text)
tokens = re.findall(r"\b\w+\b", text)
print("Hashtags:", hashtags)
print("Mentions:", mentions)
print("Emails:", emails)
print("URLs:", urls)
print("Dates:", dates)
print("Tokens:", tokens)
```

Output :

```
Hashtags: ['#StartupAI', '#ProductLaunch']
Mentions: ['@startupAI', '@startupAI']
Emails: ['marketingteam@startupAI.com', 'support@startupAI.com']
URLs: ['https://www.startupAI.com']
Dates: ['25/01/2026']
Tokens: ['Hello', 'team', 'our', 'new', 'product', 'launch', 'is', 'planned', 'for', '25', '01',
'2026', 'at', '10', '30', 'AM', 'Please', 'contact', 'marketingteam', 'startupAI', 'com', 'or',
'support', 'startupAI', 'com', 'for', 'more', 'details', 'Follow', 'us', 'on', 'social', 'media',
'using', 'StartupAI', 'ProductLaunch', 'Visit', 'our', 'website', 'at', 'https', 'www', 'startupAI',
'com', 'for', 'more', 'info', 'The', 'early', 'bird', 'price', 'is', '2999', 'limited', 'offer', 'and',
'valid', 'for', '100', 'users', 'only']
```

1(b) Program :

```
import re
patterns=[("[0-9]", "The student strength is 31 but the perfection percentage is 100."),
          ("[A-Z][a-z]+", "Athi and Meenakshmi handle the NLP."),
          ("[aeiou]+", "Natural Language Processing Essentials."),
          ("[a-z]+@[a-z]+\.\com", "Gmail id is person@gmail.com")
          ]
for pattern, text in patterns:
    print("Pattern:", pattern)
    print("Text:", text)
    matches=re.findall(pattern, text)
    if matches:
        print("Matches found:", matches)
    else:
        print("No matches found")
```

Output :

Pattern: [0-9]

Text: The student strength is 31 but the perfection percentage is 100.

Matches found: ['3', '1', '1', '0', '0']

Pattern: [A-Z][a-z]+

Text: Athi and Meenakshmi handle the NLP.

Matches found: ['Athi', 'Meenakshmi handle']

Pattern: [aeiou]+

Text: Natural Language Processing Essentials.

Matches found: ['a', 'u', 'a', 'a', 'ua', 'e', 'o', 'e', 'i', 'e', 'ia']

Pattern: [a-z]+@[a-z]+\.\com

Text: Gmail id is person@gmail.com

Matches found: ['person@gmail.com']