

In [21]:

```
pagecontent = page.text
soup = BeautifulSoup(pagecontent)
soup.find_all('ul', attrs={'class': "_1xgFaf"})
```

[illegible]

In [22]:

```
soup.find_all('div',attrs={'class': '_1_WHN1'})
```

Out[22]:

```
[<div class="_30jeq3 _1_WHN1">₹7,499</div>,  
<div class="_30jeq3 _1_WHN1">₹7,499</div>,  
<div class="_30jeq3 _1_WHN1">₹5,499</div>,  
<div class="_30jeq3 _1_WHN1">₹7,499</div>,  
<div class="_30jeq3 _1_WHN1">₹7,299</div>,  
<div class="_30jeq3 _1_WHN1">₹7,299</div>,  
<div class="_30jeq3 _1_WHN1">₹7,299</div>,  
<div class="_30jeq3 _1_WHN1">₹7,299</div>,  
<div class="_30jeq3 _1_WHN1">₹5,499</div>,  
<div class="_30jeq3 _1_WHN1">₹9,999</div>,  
<div class="_30jeq3 _1_WHN1">₹11,999</div>,  
<div class="_30jeq3 _1_WHN1">₹7,999</div>,  
<div class="_30jeq3 _1_WHN1">₹6,199</div>,  
<div class="_30jeq3 _1_WHN1">₹8,999</div>,  
<div class="_30jeq3 _1_WHN1">₹8,999</div>,  
<div class="_30jeq3 _1_WHN1">₹8,999</div>,  
<div class="_30jeq3 _1_WHN1">₹8,999</div>,  
<div class="_30jeq3 _1_WHN1">₹7,999</div>,  
<div class="_30jeq3 _1_WHN1">₹7,999</div>,  
<div class="_30jeq3 _1_WHN1">₹7,999</div>,  
<div class="_30jeq3 _1_WHN1">₹7,999</div>,  
<div class="_30jeq3 _1_WHN1">₹10,999</div>,  
<div class="_30jeq3 _1_WHN1">₹9,999</div>,  
<div class="_30jeq3 _1_WHN1">₹8,499</div>]
```

In [23]:

```
soup.find('div',attrs={'class': '_1_WHN1'})
```

Out[23]:

```
<div class="_30jeq3 _1_WHN1">₹7,499</div>
```

In [24]:

```
soup.find_all('div',attrs={'class': '_4rR01T'})
```

Out[24]:

```
[<div class="_4rR01T">POCO C55 (Cool Blue, 64 GB)</div>,  
<div class="_4rR01T">POCO C55 (Forest Green, 64 GB)</div>,  
<div class="_4rR01T">POCO C50 (Royal Blue, 32 GB)</div>,  
<div class="_4rR01T">POCO C55 (Power Black, 64 GB)</div>,  
<div class="_4rR01T">Infinix SMART 7 (Azure Blue, 64 GB)</div>,  
<div class="_4rR01T">Infinix SMART 7 (Emerald Green, 64 GB)</div>,  
<div class="_4rR01T">Infinix SMART 7 (Night Black, 64 GB)</div>,  
<div class="_4rR01T">MOTOROLA e13 (Cosmic Black, 64 GB)</div>,  
<div class="_4rR01T">POCO C50 (Country Green, 32 GB)</div>,  
<div class="_4rR01T">MOTOROLA g13 (Lavender Blue, 128 GB)</div>,  
<div class="_4rR01T">MOTOROLA G32 (Mineral Gray, 128 GB)</div>,  
<div class="_4rR01T">MOTOROLA e32 (Arctic Blue, 64 GB)</div>,  
<div class="_4rR01T">POCO C50 (Royal Blue, 32 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Diamond White, 128 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Marigold, 128 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Glacier Blue, 128 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Mirror Black, 128 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Diamond White, 64 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Mirror Black, 64 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Marigold, 64 GB)</div>,  
<div class="_4rR01T">Infinix HOT 30i (Glacier Blue, 64 GB)</div>,  
<div class="_4rR01T">REDMI 11 Prime (Peppy Purple, 128 GB)</div>,  
<div class="_4rR01T">MOTOROLA g42 (Atlantic Green, 64 GB)</div>,  
<div class="_4rR01T">POCO C51 (Royal Blue, 64 GB)</div>]
```

In [25]:

```
for x in soup.find_all('div',attrs={'class':'_3LWZ1K'}):
    print(x.text)
```

4.2
4.2
4.2
4.2
4.3
4.3
4.3
4
4.2
3.9
4.1
3.9
4
4.3
4.3
4.3
4.3
4.3
4.3
4.3
4.3
4.4
4.2
4.2
4.2
4
4
4
5
5
4.2
5
1
4.3
5
2
4.1
5
5

In [26]:

```
soup.find_all('li',attrs={'class':'rgWa7D'})
```

Out[26]:

```
[<li class="rgWa7D">4 GB RAM | 64 GB ROM | Expandable Upto 1 TB</li>,
<li class="rgWa7D">17.04 cm (6.71 inch) HD+ Display</li>,
<li class="rgWa7D">50MP Dual Rear Camera | 5MP Front Camera</li>,
<li class="rgWa7D">5000 mAh Battery</li>,
<li class="rgWa7D">Mediatek Helio G85 Processor</li>,
<li class="rgWa7D">1 Year Manufacturer Warranty for Phone and 6 Months Warranty for In the Box Accessories</li>,
<li class="rgWa7D">4 GB RAM | 64 GB ROM | Expandable Upto 1 TB</li>,
<li class="rgWa7D">17.04 cm (6.71 inch) HD+ Display</li>,
<li class="rgWa7D">50MP Dual Rear Camera | 5MP Front Camera</li>,
<li class="rgWa7D">5000 mAh Battery</li>,
<li class="rgWa7D">Mediatek Helio G85 Processor</li>,
<li class="rgWa7D">1 Year Manufacturer Warranty for Phone and 6 Months Warranty for In the Box Accessories</li>,
<li class="rgWa7D">2 GB RAM | 32 GB ROM | Expandable Upto 512 GB</li>,
<li class="rgWa7D">16.56 cm (6.52 inch) HD+ Display</li>,
<li class="rgWa7D">8MP Dual Camera | 5MP Front Camera</li>,
<li class="rgWa7D">5000 mAh Lithium Polymer Battery</li>,
<li class="rgWa7D">Mediatek Helio A22 Processor, Upto 2.0 GHz Processor</li>,
<li class="rgWa7D">1 Year Manufacturer Warranty for Phone and 6 Months Warranty for In the Box Accessories</li>.]
```

In [27]:

```
soup.find_all('div',attrs={'class': '_3I9_wc _27UcVY'})
```

Out[27]:

```
[<div class="_3I9_wc _27UcVY">ꣳ!-- -->11,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->11,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->8,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->11,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->10,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->8,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->13,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->18,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->11,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->11,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->11,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->11,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->16,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->16,999</div>,<br><div class="_3I9_wc _27UcVY">ꣳ!-- -->9,999</div>]
```

In [28]:

```

productname = []
price = []
rating = []
pagenum= []
features=[]
MRP_PRICE=[]

for i in range(1,14):
    start_time = time.time()
    URL = 'https://www.flipkart.com/search?q=mobiles&sid=tyy%2C4io&as=on&as-show=on&otracker=AS_QueryStore_OrganicAutoSuggest_1_5_na_na_na'
    page = requests.get(URL)
    pagecontent = page.text
    soup = BeautifulSoup(pagecontent)

    for x in soup.find_all('div',attrs={'class':'_3ply-c row'}):
        pname = x.find('div',attrs={'class':'_4rR01T'})
        cost = x.find('div',attrs={'class':'_1_WHN1'})
        rat = x.find('div',attrs={'class':'_3LWZ1K'})
        feat=x.find('ul',attrs={'class':'_1xgFaf'})
        MRP=x.find('div',attrs={'class':'_3I9_wc _27UcVY'})

        if pname is None:
            productname.append(np.NaN)
        else:
            productname.append(pname.text)

        if cost is None:
            price.append(np.NaN)
        else:
            price.append(cost.text)

        if rat is None:
            rating.append(np.NaN)
        else:
            rating.append(rat.text)

        if feat is None:
            features.append(np.NaN)
        else:
            features.append(feat.text)

        if MRP is None:
            MRP_PRICE.append(np.NaN)
        else:
            MRP_PRICE.append(MRP.text)

    pagenum.append(i)

    print('Page {} completed in {} seconds'.format(i, time.time() - start_time))

```

```

Page 1 completed in 3.5559756755828857 seconds
Page 2 completed in 2.7963764667510986 seconds
Page 3 completed in 2.422818422317505 seconds
Page 4 completed in 4.7395875453948975 seconds
Page 5 completed in 2.9343998432159424 seconds
Page 6 completed in 2.2669076919555664 seconds
Page 7 completed in 2.4491796493530273 seconds
Page 8 completed in 3.929309368133545 seconds
Page 9 completed in 3.1427090167999268 seconds
Page 10 completed in 2.5389842987060547 seconds
Page 11 completed in 1.966869592666626 seconds
Page 12 completed in 2.1413369178771973 seconds
Page 13 completed in 4.154505968093872 seconds

```

In [29]:

```
len(productname)
```

Out[29]:

312

In [30]:

```
a={'ProductName':productname, 'Price' :price, 'Rating':rating, 'Features':features, 'MRP_PRICE':MRP_PRICE}
mobile_df=pd.DataFrame.from_dict(a, orient='index')
mobile=mobile_df.transpose()
mobile.head()
```

Out[30]:

| | ProductName | Price | Rating | Features | MRP_PRICE |
|---|--------------------------------------|--------|--------|---|-----------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 |

In [31]:

```
regex = '[0-9\s]+ mAh'
mobile['Battery'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))

mobile.head()
```

Out[31]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery |
|---|--------------------------------------|--------|--------|---|-----------|------------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] |

In [32]:

```
mobile['Features'][0]

regex = '[0-9.\s]+(?:cm|inch)'
mobile['Display'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))

mobile.head()
```

Out[32]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display |
|---|--------------------------------------|--------|--------|---|-----------|------------|-----------------------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] |

In [33]:

```
regex = '(\d GB)'
mobile['RAM(GB)'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))
mobile.head()
```

Out[33]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) |
|---|--------------------------------------|--------|--------|---|-----------|------------|-----------------------|---------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] |

In [34]:

```
regex = '(\d{2,} GB )'
mobile['R0M(GB)'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))

mobile.head()
```

Out[34]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | R0M(GB) |
|---|--------------------------------------|--------|--------|---|-----------|------------|-----------------------|---------|----------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] | [32 GB] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] | [64 GB] |

In [35]:

```
regex = '( \D\d\d\s+Processor| \d\d\d\s+Processor)'

mobile['Processor'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))

mobile.head()
```

Out[35]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | R0M(GB) | Processor |
|---|--------------------------------------|--------|--------|---|-----------|------------|-----------------------|---------|----------|------------------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] | [32 GB] | [A22 Processor] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] | [64 GB] | [] |

In [36]:

```
mobile['Features'][0]

regex = '(\d\s(?:Year))'
mobile['Mobile Waranty'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))

mobile.head()
```

Out[36]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | R0M(GB) | Processor | Mobile Waranty |
|---|--------------------------------------|--------|--------|---|-----------|------------|-----------------------|---------|----------|------------------|----------------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] | [32 GB] | [A22 Processor] | [1 Year] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] | [64 GB] | [] | [1 Year] |

In [37]:

```
regex = '(\\d\\s(?:Months))'
mobile['Accessories'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))

mobile['Features'][3]

regex = 'Upto\\s(\\d\\d\\d\\s)'
mobile['Expandable'] = mobile['Features'].apply(lambda x: re.compile(regex).findall(x))
[38]
mobile.head()
```

Out[37]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | R0M(GB) | Processor | Mobile Waranty | Accessories | Expandable |
|---|--------------------------------------|--------|--------|---|-----------|------------|-----------------------|---------|----------|------------------|----------------|-------------|------------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] | [32 GB] | [A22 Processor] | [1 Year] | [6 Months] | [512] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] | [64 GB] | [] | [1 Year] | [6 Months] | [] |

In [38]:

```
mobile['ProductName'][1]

regex = '^\\w+'
mobile['Name'] = mobile['ProductName'].apply(lambda x: re.compile(regex).findall(x))

mobile.head()
```

Out[38]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | R0M(GB) | Processor | Mobile Waranty | Accessories | Expandable | Name |
|---|--------------------------------------|--------|--------|---|-----------|------------|-----------------------|---------|----------|------------------|----------------|-------------|------------|-----------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] | [32 GB] | [A22 Processor] | [1 Year] | [6 Months] | [512] | [POCO] |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] | [64 GB] | [] | [1 Year] | [6 Months] | [] | [Infinix] |

In [39]:

```
mobile['ProductName'][:0]

mobile.head(2)
```

Out[39]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | R0M(GB) | Processor | Mobile Waranty | Accessories | Expandable | Name |
|---|--------------------------------|--------|--------|---|-----------|------------|-----------------------|---------|----------|------------------|----------------|-------------|------------|--------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |

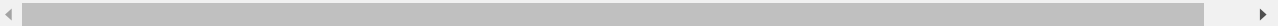
In [40]:

```
df=mobile.head(312)
df
```

Out[40]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | ROM(GB) | Processor | Mobile Waranty | Accessories | Expandable | I |
|-----|---|---------|--------|---|-----------|------------|-----------------------|---------|----------|------------------|----------------|-------------|------------|-------|
| 0 | POCO C55 (Forest Green, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [P |
| 1 | POCO C55 (Cool Blue, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [P |
| 2 | POCO C50 (Royal Blue, 32 GB) | ₹5,499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | ₹8,999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] | [32 GB] | [A22 Processor] | [1 Year] | [6 Months] | [512] | [P |
| 3 | POCO C55 (Power Black, 64 GB) | ₹7,499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | ₹11,999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [P |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | ₹7,299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | ₹9,999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] | [64 GB] | [] | [1 Year] | [6 Months] | [] | [li |
| ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| 307 | SAMSUNG Galaxy F23 5G (Aqua Blue, 128 GB) | ₹16,999 | 4.3 | 6 GB RAM 128 GB ROM Expandable Upto 1 TB16... | ₹23,999 | [5000 mAh] | [16.76 cm, 6.6 inch] | [6 GB] | [128 GB] | [] | [1 Year] | [] | [] | [SAMS |
| 308 | Kechaoda A26 | ₹1,091 | 4.1 | 32 MB RAM 32 MB ROM Expandable Upto 16 GB1... | ₹1,499 | [800 mAh] | [1.68 cm, 0.66 inch] | [] | [] | [] | [1 Year] | [] | [] | [Kech |
| 309 | SAMSUNG Galaxy A14 5G (Black, 128 GB) | ₹17,999 | 4 | 6 GB RAM 128 GB ROM Expandable Upto 1 TB16... | ₹20,999 | [5000 mAh] | [16.76 cm, 6.6 inch] | [6 GB] | [128 GB] | [] | [1 Year] | [6 Months] | [] | [SAMS |
| 310 | I Kall K3310 | ₹744 | 3.6 | 32 MB RAM 32 MB ROM4.5 cm (1.77 inch) Displa... | ₹999 | [1000 mAh] | [4.5 cm, 1.77 inch] | [] | [] | [] | [1 Year] | [6 Months] | [] | |
| 311 | Nokia 105 PLUS | ₹1,549 | 4.1 | 4 MB RAM 4 MB ROM4.5 cm (1.77 inch) Display0... | ₹1,899 | [1000 mAh] | [4.5 cm, 1.77 inch] | [] | [] | [] | [1 Year] | [6 Months] | [] | [P |

312 rows × 14 columns



In [41]:

```
df['Price'] = df['Price'].str.lstrip('₹')
df['Price']=df['Price'].replace({' ',''},regex=True)
df['MRP_PRICE'] = df['MRP_PRICE'].str.lstrip('₹')
df['MRP_PRICE']=df['MRP_PRICE'].replace({' ',''},regex=True)
df.head()
```

Out[41]:

| | ProductName | Price | Rating | Features | MRP_PRICE | Battery | Display | RAM(GB) | R0M(GB) | Processor | Mobile Waranty | Accessories | Expandable | Name |
|---|--------------------------------------|-------|--------|---|-----------|------------|-----------------------|---------|----------|------------------|----------------|-------------|------------|-----------|
| 0 | POCO C55 (Forest Green, 64 GB) | 7499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | 11999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |
| 1 | POCO C55 (Cool Blue, 64 GB) | 7499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | 11999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |
| 2 | POCO C50 (Royal Blue, 32 GB) | 5499 | 4.2 | 2 GB RAM 32 GB ROM Expandable Upto 512 GB1... | 8999 | [5000 mAh] | [16.56 cm, 6.52 inch] | [2 GB] | [32 GB] | [A22 Processor] | [1 Year] | [6 Months] | [512] | [POCO] |
| 3 | POCO C55 (Power Black, 64 GB) | 7499 | 4.2 | 4 GB RAM 64 GB ROM Expandable Upto 1 TB17.... | 11999 | [5000 mAh] | [17.04 cm, 6.71 inch] | [4 GB] | [64 GB] | [G85 Processor] | [1 Year] | [6 Months] | [] | [POCO] |
| 4 | Infinix SMART 7 (Night Black, 64 GB) | 7299 | 4.3 | 4 GB RAM 64 GB ROM Expandable Upto 2 TB16.... | 9999 | [6000 mAh] | [16.76 cm, 6.6 inch] | [4 GB] | [64 GB] | [] | [1 Year] | [6 Months] | [] | [Infinix] |

In [42]:

```
df.columns
```

Out[42]:

```
Index(['ProductName', 'Price', 'Rating', 'Features', 'MRP_PRICE', 'Battery', 'Display', 'RAM(GB)', 'R0M(GB)', 'Processor', 'Mobile Waranty', 'Accessories', 'Expandable', 'Name'], dtype='object')
```

In [43]:

```
#RAM
r=re.compile(r"(\d+)\sGB\sRAM")
r.findall(df['Features'])[0]
```

Out[43]:

```
['4']
```

In [44]:

```
df['RAM(GB)']=df['Features'].apply(lambda x:r.findall(x))
r=re.compile(r"(\d+)\sGB\sR0M")
r.findall(df['Features'])[1]
```

Out[44]:

```
['64']
```

In [45]:

```
df['R0M(GB)']=df['Features'].apply(lambda x:r.findall(x))
r=re.compile(r" Upto (\d+)\sGB")
r.findall(df['Features'])[0]
```

Out[45]:

```
[]
```

In [46]:

```
df['Expandable']=df['Features'].apply(lambda x:r.findall(x))

r=re.compile(r"(\d+\.\d+)\scm")
r.findall(df['Features'][0])
```

Out[46]:

```
['17.04']
```

In [47]:

```
df['Display']=df['Features'].apply(lambda x:r.findall(x))

r=re.compile(r"(\d+)\smAh")
r.findall(df['Features'][0])
```

Out[47]:

```
['5000']
```

In [48]:

```
df['Battery']=df['Features'].apply(lambda x:r.findall(x))

r=re.compile(r"(\d+) Months")
r.findall(df['Features'][0])
```

Out[48]:

```
['6']
```

In [49]:

```
df['Accessories']=df['Features'].apply(lambda x:r.findall(x))

df['Features'][0]
```

Out[49]:

```
'4 GB RAM | 64 GB ROM | Expandable Upto 1 TB17.04 cm (6.71 inch) HD+ Display50MP Dual Rear Camera | 5MP Front Camera5000 mA
h BatteryMediatek Helio G85 Processor1 Year Manufacturer Warranty for Phone and 6 Months Warranty for In the Box Accessorie
s'
```

In [50]:

```
r=re.compile(r"Processor(\D+|\d+) Year")
r.findall(df['Features'][1])
```

Out[50]:

```
['1']
```

In [51]:

```
df['Mobile Waranty']=df['Features'].apply(lambda x:r.findall(x))
```

In [52]:

```
df['ProductName'] = df['ProductName'].apply(lambda x : ''.join(x))
#df['Rating'] = df['Rating'].apply(lambda x : ''.join(x))
df['Features'] = df['Features'].apply(lambda x : ''.join(x))
df['Name'] = df['Name'].apply(lambda x : ''.join(x))
df['Battery'] = df['Battery'].apply(lambda x : ''.join(x))
df['Display'] = df['Display'].apply(lambda x : ''.join(x))
df['RAM(GB)'] = df['RAM(GB)'].apply(lambda x : ''.join(x))
df['R0M(GB)']=df['R0M(GB)'].apply(lambda x: ''.join(x))
df['Processor'] = df['Processor'].apply(lambda x : ''.join(x))
df['Mobile Waranty'] = df['Mobile Waranty'].apply(lambda x : ''.join(x))
df['Accessories'] = df['Accessories'].apply(lambda x : ''.join(x))
df['Expandable'] = df['Expandable'].apply(lambda x : ''.join(x))
```

In [53]:

```
df.to_csv("C:\\Users\\Prathiksha\\OneDrive\\Desktop\\mobiles.csv")
```

In []: