

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt

np.random.seed(42)
probabilities = [0.0361] * 21 + [0.057] * 44 + [0.0069] * 36
probabilities[-1] += 1 - sum(probabilities) # Adjust the last probability to sum to 1

import numpy as np

np.random.seed(42)
probabilities = [0.0361] * 21 + [0.057] * 44 + [0.0069] * 36
probabilities[-1] += 1 - sum(probabilities) # Adjust the last probability to sum to 1

# Ensure all probabilities are non-negative and sum to 1
probabilities = np.clip(probabilities, 0, 1)
probabilities /= np.sum(probabilities)

ages = np.random.choice(
    range(0, 101),
    size=100000,
    p=probabilities
)
```

```
data = pd.DataFrame({'Age': ages})
```

```
age_groups = [(0, 20, 'yellow', '0 to 20 Years\n512 Mn\n36.1%'),
              (21, 64, 'blue', '21 to 64 Years\n807 Mn\n57.0%'),
              (65, 100, 'magenta', '65+ Years\n98 Mn\n6.9%')]
```

```
plt.figure(figsize=(10, 8))
```

↗ <Figure size 1000x800 with 0 Axes>

```
for start, end, color, label in age_groups:
    age_group_data = data[(data['Age'] >= start) & (data['Age'] <= end)]
    plt.hist(age_group_data['Age'], bins=end-start, color=color, edgecolor='black', label=label)
```

↗

