```
!pip install langchain_community
!pip install replicate
```

```
Requirement already satisfied: pydantic<3.0.0,>=2.7.4 in /usr/local/lib/python3.11/dist-packages (fr
Requirement already satisfied: jsonpatch<2.0,>=1.33 in /usr/local/lib/python3.11/dist-packages (from
Requirement already satisfied: typing-extensions>=4.7 in /usr/local/lib/python3.11/dist-packages (fr
Requirement already satisfied: packaging>=23.2 in /usr/local/lib/python3.11/dist-packages (from lang
Requirement already satisfied: httpx<1,>=0.23.0 in /usr/local/lib/python3.11/dist-packages (from lan
Requirement already satisfied: orjson<4.0.0,>=3.9.14 in /usr/local/lib/python3.11/dist-packages (fro
Requirement already satisfied: requests-toolbelt<2.0.0,>=1.0.0 in /usr/local/lib/python3.11/dist-pac
Requirement already satisfied: zstandard<0.24.0,>=0.23.0 in /usr/local/lib/python3.11/dist-packages
Collecting python-dotenv>=0.21.0 (from pydantic-settings<3.0.0,>=2.4.0->langchain_community)
  Downloading python_dotenv-1.1.1-py3-none-any.whl.metadata (24 kB)
Requirement already satisfied: typing-inspection>=0.4.0 in /usr/local/lib/python3.11/dist-packages (
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-packages (from request
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from r
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.11/dist-packages (from r
Requirement already satisfied: greenlet>=1 in /usr/local/lib/python3.11/dist-packages (from SQLAlche
Requirement already satisfied: anyio in /usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.23
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.11/dist-packages (from httpx<
Requirement already satisfied: h11>=0.16 in /usr/local/lib/python3.11/dist-packages (from httpcore==
Requirement already satisfied: jsonpointer>=1.9 in /usr/local/lib/python3.11/dist-packages (from jso
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.11/dist-packages (fr
Requirement already satisfied: pydantic-core==2.33.2 in /usr/local/lib/python3.11/dist-packages (fro
Collecting mypy-extensions>=0.3.0 (from typing-inspect<1,>=0.4.0->dataclasses-json<0.7,>=0.5.7->lang
  Downloading mypy_extensions-1.1.0-py3-none-any.whl.metadata (1.1 kB)
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.11/dist-packages (from anyio->
Downloading langchain_community-0.3.27-py3-none-any.whl (2.5 MB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 2.5/2.5 MB 26.6 MB/s eta 0:00:00
Downloading dataclasses_json-0.6.7-py3-none-any.whl (28 kB)
Downloading httpx_sse-0.4.1-py3-none-any.whl (8.1 kB)
Downloading pydantic_settings-2.10.1-py3-none-any.whl (45 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 45.2/45.2 kB 4.9 MB/s eta 0:00:00
Downloading marshmallow-3.26.1-py3-none-any.whl (50 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 50.9/50.9 kB 5.7 MB/s eta 0:00:00
Downloading python_dotenv-1.1.1-py3-none-any.whl (20 kB)
Downloading typing_inspect-0.9.0-py3-none-any.whl (8.8 kB)
Downloading mypy_extensions-1.1.0-py3-none-any.whl (5.0 kB)
Installing collected packages: python-dotenv, mypy-extensions, marshmallow, httpx-sse, typing-inspec
Successfully installed dataclasses-json-0.6.7 httpx-sse-0.4.1 langchain_community-0.3.27 marshmallow
Collecting replicate
  Downloading replicate-1.0.7-py3-none-any.whl.metadata (29 kB)
Requirement already satisfied: httpx<1,>=0.21.0 in /usr/local/lib/python3.11/dist-packages (from rep
Requirement already satisfied: packaging in /usr/local/lib/python3.11/dist-packages (from replicate)
Requirement already satisfied: pydantic>1.10.7 in /usr/local/lib/python3.11/dist-packages (from repl
Requirement already satisfied: typing_extensions>=4.5.0 in /usr/local/lib/python3.11/dist-packages (
Requirement already satisfied: anyio in /usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.21
Requirement already satisfied: certifi in /usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.11/dist-packages (from httpx<
Requirement already satisfied: idna in /usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.21.
Requirement already satisfied: h11>=0.16 in /usr/local/lib/python3.11/dist-packages (from httpcore==
Requirement already satisfied: annotated-types>=0.6.0 in /usr/local/lib/python3.11/dist-packages (fr
Requirement already satisfied: pydantic-core==2.33.2 in /usr/local/lib/python3.11/dist-packages (fro
Requirement already satisfied: typing-inspection>=0.4.0 in /usr/local/lib/python3.11/dist-packages (
Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.11/dist-packages (from anyio->
Downloading replicate-1.0.7-py3-none-any.whl (48 kB)
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 48.6/48.6 kB 1.8 MB/s eta 0:00:00
Installing collected packages: replicate
Successfully installed replicate-1.0.7
```

```
Start coding or generate with AI.
```

```
import os
from google.colab import userdata

```

```
api_token = userdata.get("api_token")
os.environ["REPLICATE_API_TOKEN"] = api_token
```

```
from langchain_community.llms import Replicate

llm = Replicate(
    model="ibm-granite/granite-3.3-8b-instruct",
    model_kwargs={
        "temperature": 0.7,
        "top_k": 5,
        "top_p": 1.0,
        "max_tokens": 512
    }
)
```

```
import pandas as pd

# Load file CSV (ganti path jika perlu)
df = pd.read_csv("/content/riset_lulusan_smasmk - Form Responses 1.csv")

# Ambil kolom narasi
text_data = df["6. Ceritakan secara jujur apa yang Anda rasakan setelah lulus sekolah.  "].dropna().as

```

```
# Prompt dasar untuk klasifikasi
def klasifikasi_sentimen(teks):
    prompt = f"""
Tolong analisis sentimen dari teks berikut dan balas hanya dengan salah satu label ini: positif, negat

Teks:
\"{teks}\"

Jawaban:
"""
    try:
        response = llm.invoke(prompt).strip().lower()
    except Exception as e:
        response = "error"
    return response

# Normalisasi jawaban model
def normalisasi_label(label):
    label = label.strip().lower()
    if "positif" in label:
        return "positif"
    elif "negatif" in label:
        return "negatif"
    elif "netral" in label:
        return "netral"
    else:
        return "netral"

```

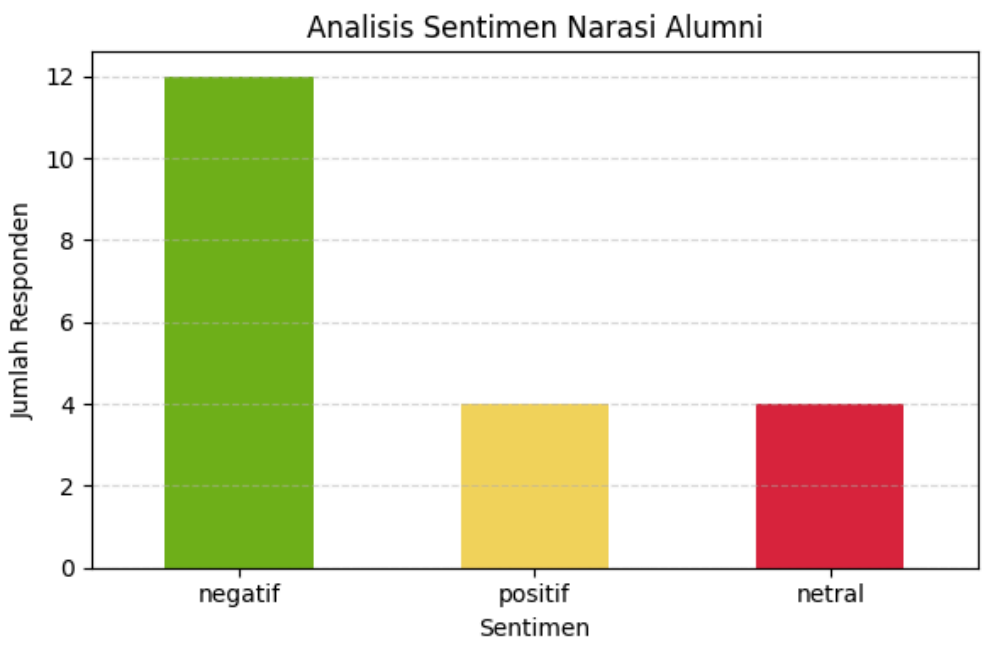
```
# Proses seluruh teks
results = [normalisasi_label(klasifikasi_sentimen(teks)) for teks in text_data]

# Gabungkan hasil ke DataFrame
df_hasil = pd.DataFrame({
    "Teks": text_data.values,
    "Label": results
})

```

```
# Lihat hasil pertama
df_hasil.head(10)

```

	Teks	Label
0	nganggur banyak pressure	negatif
1	Very happy	positif
2	takut tidak bisa jadi orang yang berguna, sela...	negatif
3	Saya merasa gabut dan hampa hingga tanggal 11 ...	netral
4	Ga ada uang sama sekali	negatif
5	bingung ga ada tujuan karna sudah tidak ada ya...	negatif
6	Bosan	netral
7	semakin merasa bahwa beranjak ke jenjang yg le...	netral
8	Senang	positif
9	takut bingitss	negatif

Next steps: Generate code with df_hasil | View recommended plots | New interactive sheet

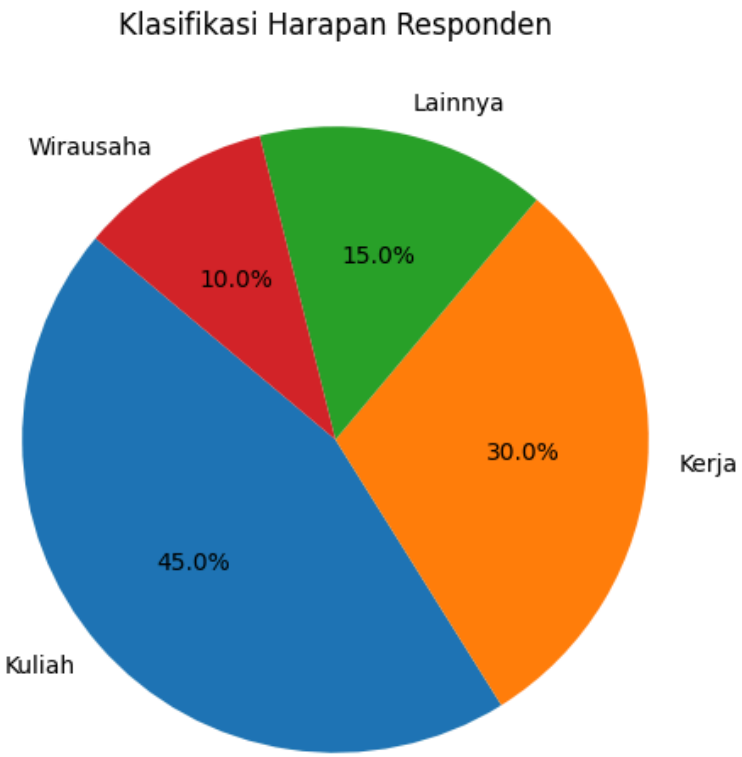
```
import matplotlib.pyplot as plt

# Hitung jumlah per label (positif, netral, negatif)
label_counts = df_hasil["Label"].value_counts()

# Bar chart
plt.figure(figsize=(6, 4))
label_counts.plot(kind='bar', color=['#72B01D', '#F4D35E', '#D7263D'])
plt.title("Analisis Sentimen Narasi Alumni")
plt.xlabel("Sentimen")
plt.ylabel("Jumlah Responden")
plt.xticks(rotation=0)
plt.grid(axis='y', linestyle='--', alpha=0.5)
plt.tight_layout()
plt.show()

```



```python
# 1. Import Library
import pandas as pd
import time
import matplotlib.pyplot as plt
from langchain_community.llms import Replicate

# 2. Load Data CSV
file_path = "/content/riset_lulusan_smasmk - Form Responses 1.csv"
df = pd.read_csv(file_path)

# 3. Ambil kolom 7
kolom7 = df["7. Apa yang anda harapkan untuk diri anda di masa depan?  "].dropna()

# 4. Setup AI Granite 3.3 dari Langchain Replicate
llm = Replicate(
    model="ibm-granite/granite-3.3-8b-instruct",
    model_kwargs={
        "top_k": 5,
        "top_p": 1.0,
        "max_tokens": 200,
        "temperature": 0.5
    }
)

# 5. Fungsi klasifikasi AI
def klasifikasi_ai(teks):
    prompt = f"""
    Kategorikan harapan berikut menjadi salah satu dari kategori berikut:
    - Kuliah
    - Kerja
    - Wirausaha
    - Menganggur/Bingung
    - Lainnya

    Harapan: "{teks}"
    Jawaban hanya salah satu dari nama kategori di atas. Jangan beri penjelasan tambahan.
    """
    try:
        return llm.invoke(prompt).strip()
    except Exception as e:
        return "Lainnya"

# 6. Proses Semua Baris
hasil_klasifikasi = []
for teks in kolom7:
    hasil = klasifikasi_ai(teks)
    hasil_klasifikasi.append(hasil)
    time.sleep(1.5)  # jeda untuk hindari limit API

# 7. Simpan ke DataFrame
df_klasifikasi = pd.DataFrame({
    "Jawaban Responden": kolom7.values,
    "Kategori": hasil_klasifikasi
})

# 8. Normalisasi Kategori (antisipasi variasi label)
def normalisasi_kategori(label):
    label = label.lower().strip()
    if "kuliah" in label:
        return "Kuliah"
    elif "kerja" in label:
        return "Kerja"
    elif "usaha" in label or "wira" in label:
        return "Wirausaha"
```

```
    elif "bingung" in label or "nganggur" in label:
        return "Menganggur/Bingung"
    else:
        return "Lainnya"

df_klasifikasi["Kategori Normal"] = df_klasifikasi["Kategori"].apply(normalisasi_kategori)

# 9. Tampilkan hasil klasifikasi
print("Jumlah responden per kategori:")
print(df_klasifikasi["Kategori Normal"].value_counts())

# 10. Visualisasi Pie Chart
df_klasifikasi["Kategori Normal"].value_counts().plot.pie(
    autopct='%1.1f%%',
    figsize=(8, 6),
    startangle=140,
    ylabel="",
    title="Klasifikasi Harapan Responden"
)
plt.show()

```

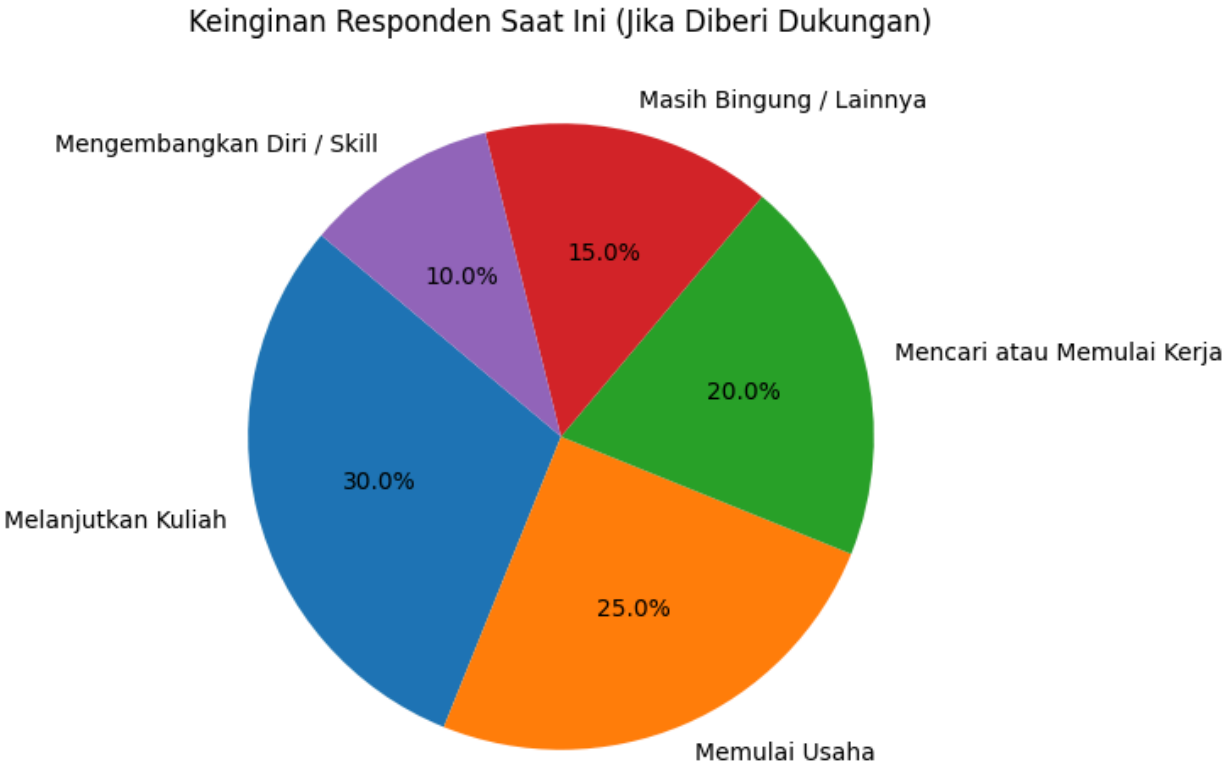
```
Jumlah responden per kategori:
Kategori Normal
Kuliah       9
Kerja        6
Lainnya      3
Wirausaha    2
Name: count, dtype: int64
```




```
# 1. Ambil kolom 8
kolom8 = df["8. Jika diberi kesempatan dan dukungan, apa yang paling ingin Anda lakukan saat ini?  "].

# 2. Fungsi klasifikasi AI untuk kolom 8
def klasifikasi_ai_kolom8(teks):
    prompt = f"""
    Kategorikan jawaban berikut ke dalam salah satu dari kategori ini:
    - Melanjutkan Kuliah
```

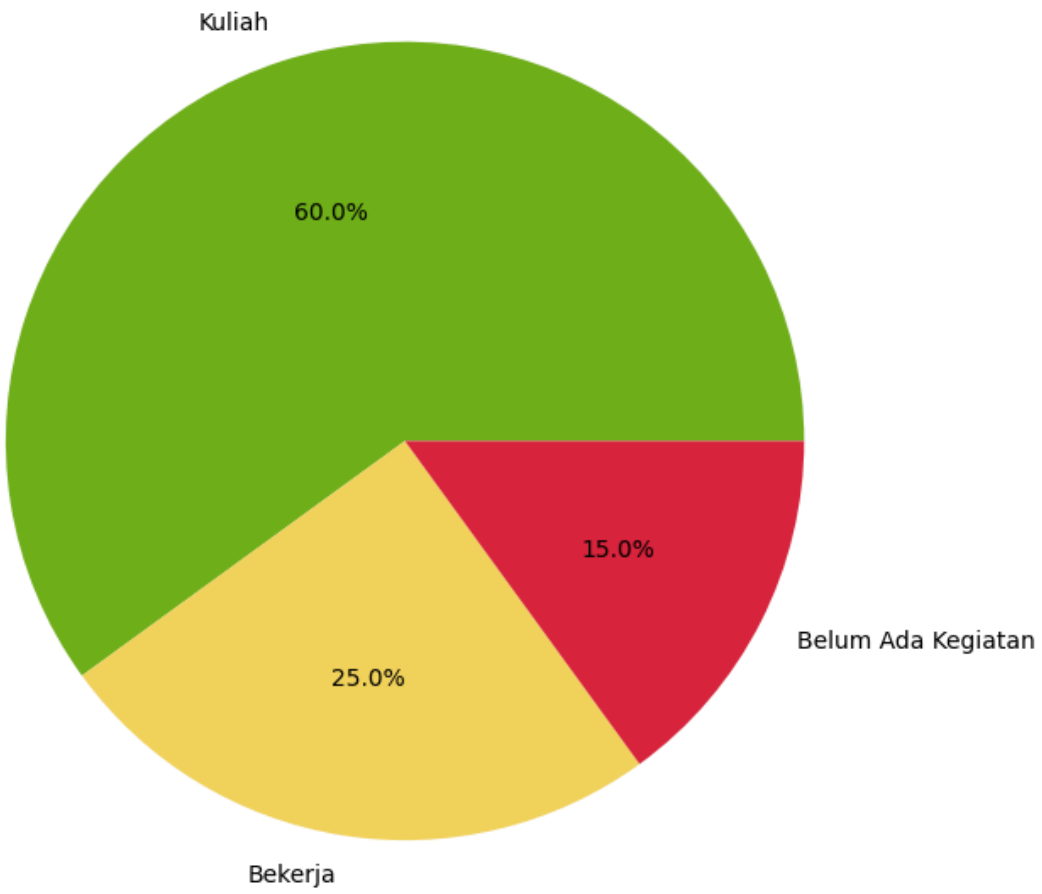
```
    - Mencari atau Memulai Kerja
    - Memulai Usaha
    - Mengembangkan Diri / Skill
    - Masih Bingung / Lainnya

    Jawaban: "{teks}"
    Berikan hanya salah satu dari nama kategori tersebut, tanpa penjelasan tambahan.
    """
    try:
        return llm.invoke(prompt).strip()
    except:
        return "Masih Bingung / Lainnya"

# 3. Proses AI klasifikasi kolom 8
hasil_klasifikasi8 = []
for teks in kolom8:
    hasil = klasifikasi_ai_kolom8(teks)
    hasil_klasifikasi8.append(hasil)
    time.sleep(1.5)

# 4. Buat DataFrame klasifikasi kolom 8
df_klasifikasi8 = pd.DataFrame({
    "Jawaban Responden": kolom8.values,
    "Kategori": hasil_klasifikasi8
})

# 5. Normalisasi label hasil klasifikasi
def normalisasi_kategori8(label):
    label = label.lower()
    if "kuliah" in label:
        return "Melanjutkan Kuliah"
    elif "kerja" in label:
        return "Mencari atau Memulai Kerja"
    elif "usaha" in label or "jualan" in label or "bisnis" in label:
        return "Memulai Usaha"
    elif "belajar" in label or "skill" in label or "kursus" in label:
        return "Mengembangkan Diri / Skill"
    else:
        return "Masih Bingung / Lainnya"

df_klasifikasi8["Kategori Normal"] = df_klasifikasi8["Kategori"].apply(normalisasi_kategori8)

# 6. Tampilkan hasil dan Pie Chart
print("Jumlah responden per kategori (kolom 8):")
print(df_klasifikasi8["Kategori Normal"].value_counts())

df_klasifikasi8["Kategori Normal"].value_counts().plot.pie(
    autopct='%1.1f%%',
    figsize=(8, 6),
    startangle=140,
    ylabel="",
    title="Keinginan Responden Saat Ini (Jika Diberi Dukungan)"
)
plt.show()

```

```
Jumlah responden per kategori (kolom 8):
Kategori Normal
Melanjutkan Kuliah            6
Memulai Usaha                 5
Mencari atau Memulai Kerja    4
Masih Bingung / Lainnya       3
Mengembangkan Diri / Skill    2
Name: count, dtype: int64
```



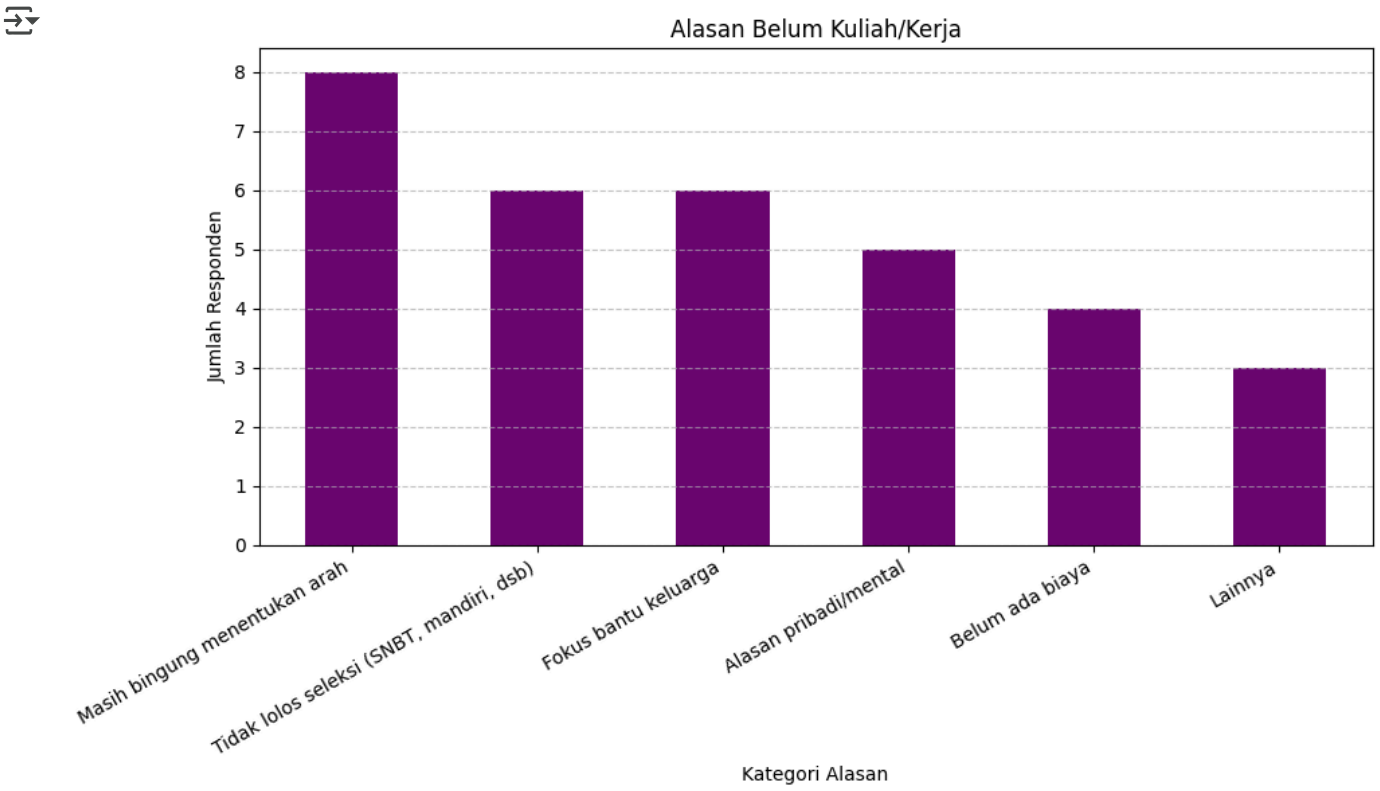

```python
import pandas as pd
import matplotlib.pyplot as plt

# 1. Load ulang file (jika belum)
file_path = "/content/riset_lulusan_smasmk - Form Responses 1.csv"
df = pd.read_csv(file_path)

# 2. Ambil kolom 1 (ubah sesuai nama persis kolomnya)
kolom1 = df["1. Setelah lulus, saat ini Anda sedang:  "].dropna()

# 3. Normalisasi jawaban (jika perlu, bisa kamu sesuaikan lebih detail nanti)
def normalisasi_status(status):
    status = status.lower().strip()
    if "kuliah" in status:
        return "Kuliah"
    elif "kerja" in status or "bekerja" in status:
        return "Bekerja"
    elif "usaha" in status or "wira" in status:
        return "Wirausaha"
    elif "belum" in status or "nganggur" in status:
        return "Belum Ada Kegiatan"
    else:
        return "Lainnya"

kolom1_normal = kolom1.apply(normalisasi_status)

# 4. Hitung jumlah per kategori
status_counts = kolom1_normal.value_counts()

```

```
# 5. Pie chart visualisasi
plt.figure(figsize=(7, 7))
colors = ["#72B01D", "#F4D35E", "#D7263D", "#7C7C7C", "#8AAAE5"]
plt.pie(status_counts, labels=status_counts.index, autopct='%1.1f%%', colors=colors)
plt.title("Status Saat Ini Setelah Lulus SMA/SMK")
plt.tight_layout()
plt.show()

```




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

# 1. Baca data
file_path = "/content/riset_lulusan_smasmk - Form Responses 1.csv"
df = pd.read_csv(file_path)

# 2. Ambil jawaban no 2 & hapus NaN
kolom2 = df["2. Jika Anda belum kuliah/kerja, apa alasannya?"].dropna()

# 3. Pecah jawaban multi-alasan
alasan_list = []
for jawaban in kolom2:
    alasan_terpisah = [a.strip().lower() for a in jawaban.split(',')]
    alasan_list.extend(alasan_terpisah)

# 4. Mapping ke 5 kategori resmi
def kategorikan(a):
    a = a.lower()
    if "biaya" in a:
        return "Belum ada biaya"
    elif "tidak lolos" in a or "tidak lulus" in a or "gagal" in a or "snbt" in a or "mandiri" in a:
```

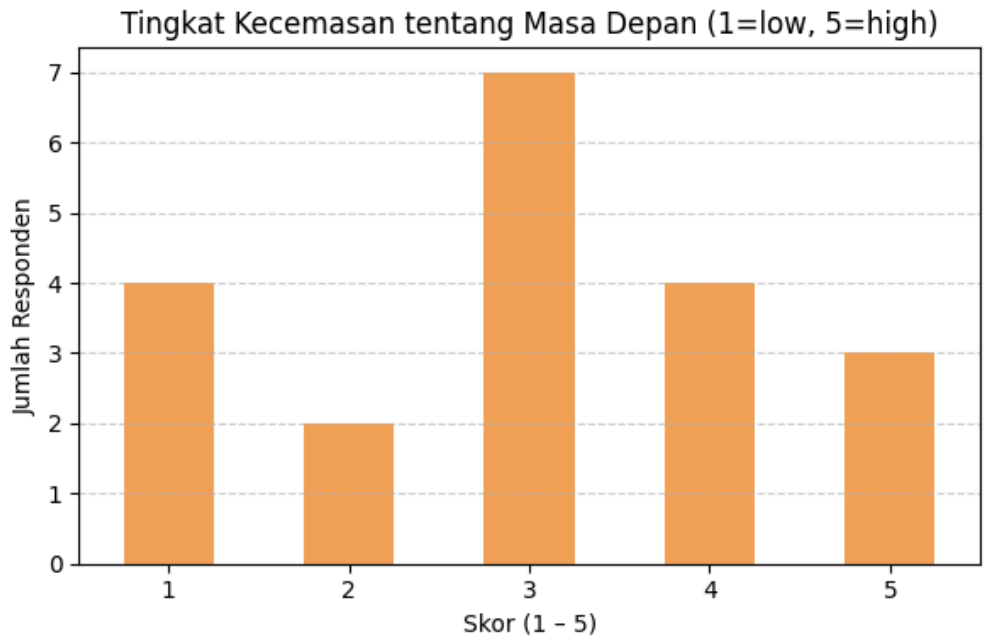
```
    elif "tidak lolos" in a or "tidak lulus" in a or "gagal" in a or "snbt" in a or "mandiri" in a:
        return "Tidak lolos seleksi (SNBT, mandiri, dsb)"
    elif "bingung" in a or "belum tahu" in a or "belum tau" in a or "arah" in a:
        return "Masih bingung menentukan arah"
    elif "keluarga" in a or "bantu" in a:
        return "Fokus bantu keluarga"
    elif "mental" in a or "minder" in a or "pribadi" in a:
        return "Alasan pribadi/mental"
    else:
        return "Lainnya"

alasan_kategori = [kategorikan(a) for a in alasan_list]

# 5. Hitung jumlah kategori
df_alasan = pd.DataFrame(alasan_kategori, columns=["Kategori"])
alasan_counts = df_alasan["Kategori"].value_counts()

# 6. Visualisasi Bar Chart
plt.figure(figsize=(10, 6))
alasan_counts.plot(kind='bar', color="#6A0572")
plt.title("Alasan Belum Kuliah/Kerja")
plt.xlabel("Kategori Alasan")
plt.ylabel("Jumlah Responden")
plt.xticks(rotation=30, ha='right')
plt.grid(axis='y', linestyle='--', alpha=0.7)
plt.tight_layout()
plt.show()
```




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

# 1. Baca data
file_path = "/content/riset_lulusan_smasmk - Form Responses 1.csv"
df        = pd.read_csv(file_path)

# 2. Ambil kolom skala 1-5 (gunakan filter agar tak masalah spasi/new-line)
```

```
col3 = df.filter(like="Apakah Anda merasa tertekan").iloc[:,0].dropna()

# 3. Konversi ke integer (jaga-jaga jika tersimpan sebagai string)
col3 = col3.astype(int)

# 4. Hitung frekuensi tiap skala
freq = col3.value_counts().sort_index()   # urut 1→5

print("Distribusi Skor Kecemasan:\n", freq)

# 5. Bar Chart
plt.figure(figsize=(6,4))
freq.plot(kind="bar", color="#F4A259")
plt.title("Tingkat Kecemasan tentang Masa Depan (1=low, 5=high)")
plt.xlabel("Skor (1 – 5)")
plt.ylabel("Jumlah Responden")
plt.xticks(rotation=0)
plt.grid(axis='y', linestyle='--', alpha=0.6)
plt.tight_layout()
plt.show()
```

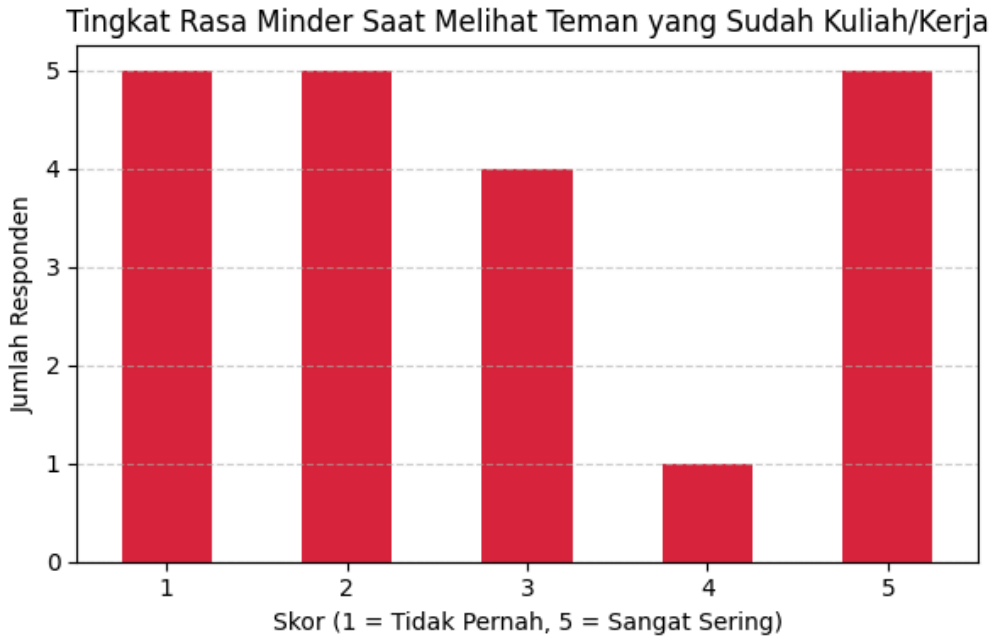
```
Distribusi Skor Kecemasan:
 3. Apakah Anda merasa tertekan atau cemas tentang masa depan Anda?\n1 = Tidak sama sekali\n5 = Sangat
1    4
2    2
3    7
4    4
5    3
Name: count, dtype: int64
```




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

# 1. Baca data
file_path = "/content/riset_lulusan_smasmk - Form Responses 1.csv"
df = pd.read_csv(file_path)

# 2. Ambil kolom no.4 (pakai filter agar aman dari variasi teks)
col4 = df.filter(like="Seberapa sering Anda merasa minder").iloc[:,0].dropna()

# 3. Konversi ke integer
col4 = col4.astype(int)

# 4. Hitung distribusi frekuensi
```

```
freq = col4.value_counts().sort_index()

print("Distribusi Skor Rasa Minder:\n", freq)

# 5. Bar Chart Visualisasi
plt.figure(figsize=(6, 4))
freq.plot(kind="bar", color="#D7263D")
plt.title("Tingkat Rasa Minder Saat Melihat Teman yang Sudah Kuliah/Kerja")
plt.xlabel("Skor (1 = Tidak Pernah, 5 = Sangat Sering)")
plt.ylabel("Jumlah Responden")
plt.xticks(rotation=0)
plt.grid(axis='y', linestyle='--', alpha=0.6)
plt.tight_layout()
plt.show()

print("Rata-rata rasa minder:", col4.mean())


```

```
Distribusi Skor Rasa Minder:
  4. Seberapa sering Anda merasa minder saat melihat teman yang sudah kuliah atau kerja?\n1 = Tidak pe
1    5
2    5
3    4
4    1
5    5
Name: count, dtype: int64
```

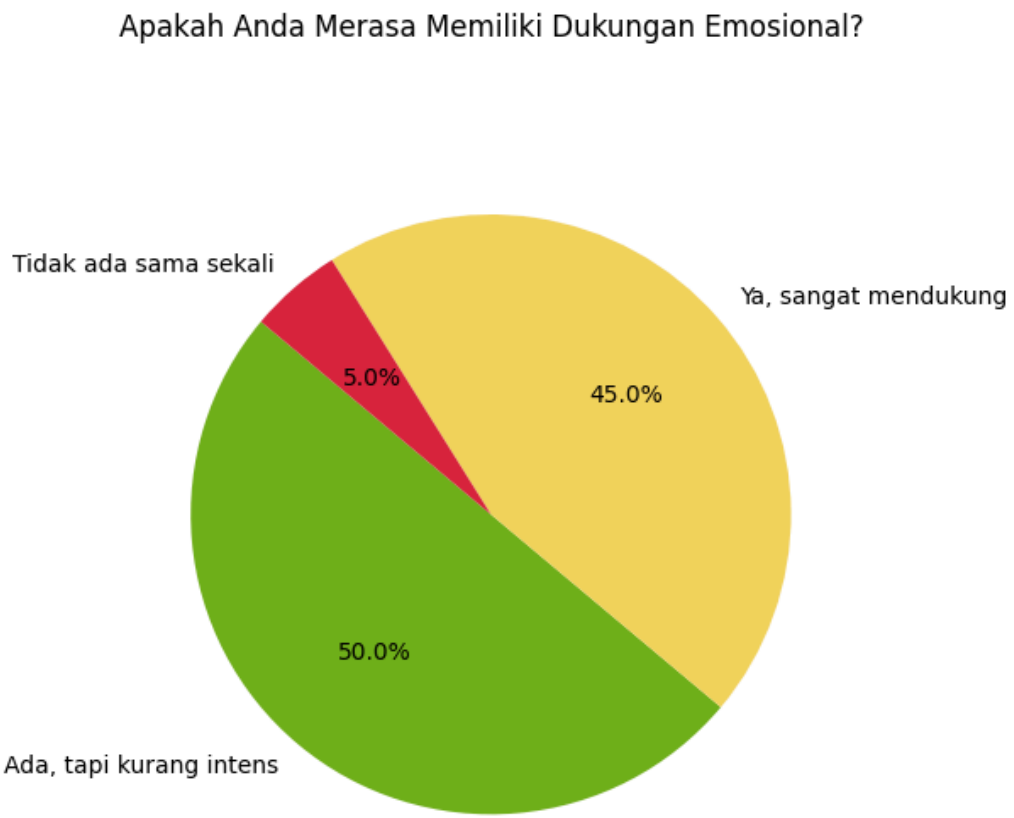



```
Rata-rata rasa minder: 2.8
```

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

# 1. Load data
file_path = "/content/riset_lulusan_smasmk - Form Responses 1.csv"
df = pd.read_csv(file_path)

# 2. Ambil kolom no.5 (pakai filter agar lebih aman dari perubahan format)
col5 = df.filter(like="dukungan emosional").iloc[:, 0].dropna()

# 3. Hitung frekuensi tiap jawaban
freq = col5.value_counts()

print("Distribusi Dukungan Emosional:\n", freq)
```

```
15
16 # 4. Visualisasi - Pie Chart
17 colors = ["#72B01D", "#F4D35E", "#D7263D"]  # Hijau = positif, Kuning = netral, Merah = negatif
18 plt.figure(figsize=(6, 6))
19 plt.pie(freq, labels=freq.index, autopct='%1.1f%%', colors=colors, startangle=140)
20 plt.title("Apakah Anda Merasa Memiliki Dukungan Emosional?")
21 plt.axis("equal")
22 plt.tight_layout()
23 plt.show()
24
```

```
Distribusi Dukungan Emosional:
 5. Apakah Anda merasa memiliki dukungan emosional dari keluarga atau teman?
Ada, tapi kurang intens    10
Ya, sangat mendukung        9
Tidak ada sama sekali       1
Name: count, dtype: int64
```




```
1 from google.colab import drive
2 drive.mount('/content/drive')
3
```

```
Mounted at /content/drive
```

```
1 output_path = "/content/drive/MyDrive/hasil_klasifikasi.csv"
2 df_klasifikasi.to_csv(output_path, index=False)
3
```

```
1 plt.savefig("/content/drive/MyDrive/chart_klasifikasi.png")
2
```

```
<Figure size 640x480 with 0 Axes>
```

```
from google.colab import files
df_klasifikasi.to_csv("hasil_klasifikasi.csv", index=False)
files.download("hasil_klasifikasi.csv")

plt.savefig("chart_klasifikasi.png")
files.download("chart_klasifikasi.png")

```

```
<Figure size 640x480 with 0 Axes>
```

```
Start coding or generate with AI.
```