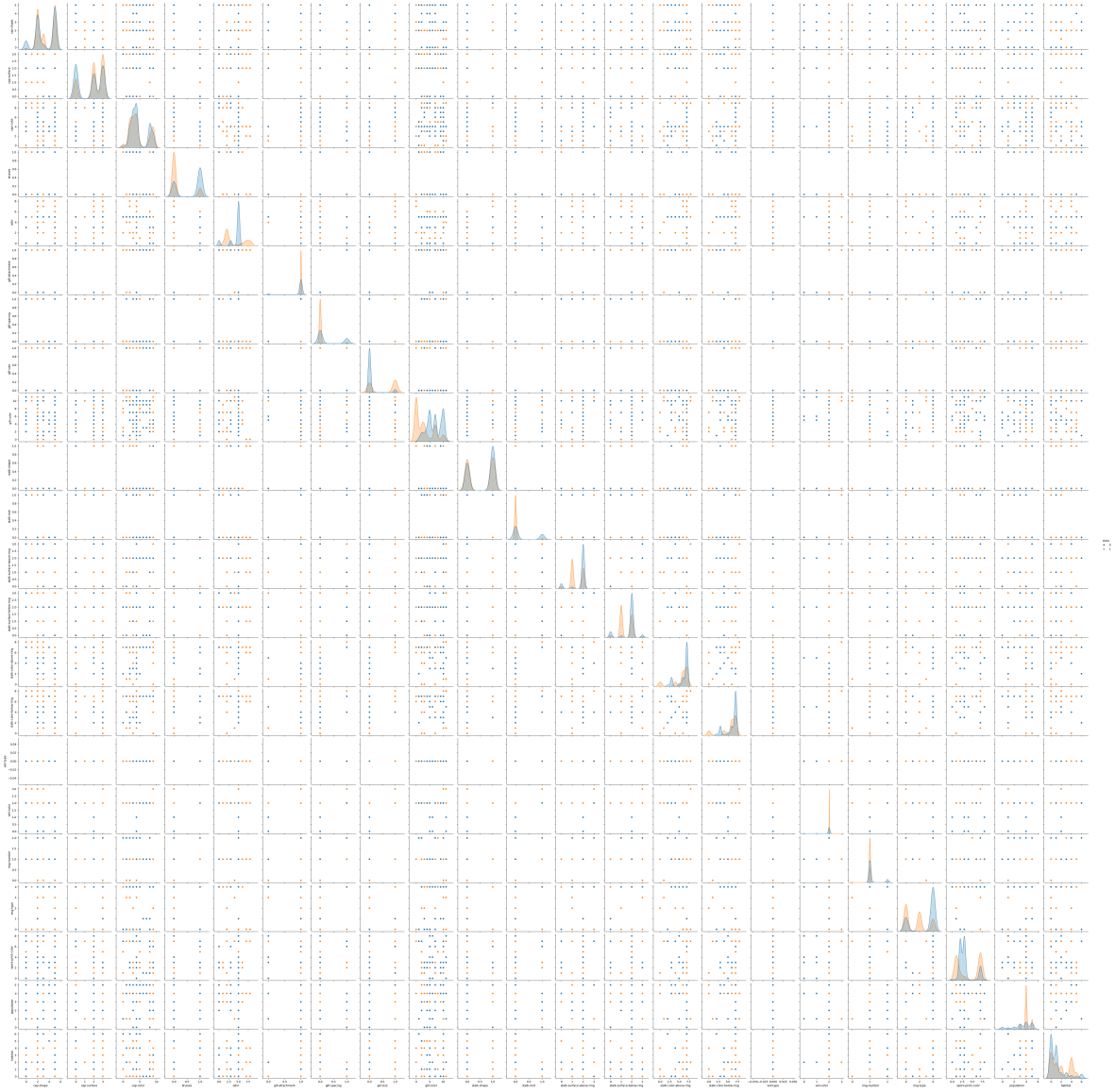
23 rows × 23 columns

In [112…

```
import seaborn as sns
sns.pairplot(df1, hue='class')
```

Out[112…

```
<seaborn.axisgrid.PairGrid at 0x228bce02650>
```



In [36]:

```
# Mapping of user input to actual values for each categorical variable
input_mapping = {
    'cap-shape': {'1': 'x (convex)', '2': 'b (bell)', '3': 's (sunken)', '4': 'f
    'cap-surface': {'1': 's (smooth)', '2': 'y (scaly)', '3': 'f (fibrous)', '4'
    'cap-color': {'1': 'n (brown)', '2': 'y (yellow)', '3': 'w (white)', '4': 'g
    'bruises': {'1': 't (bruises present)', '2': 'f (no bruises)'},
    'odor': {'1': 'p (pungent)', '2': 'a (almond)', '3': 'l (anise)', '4': 'n (n
    'gill-attachment': {'1': 'f (free)', '2': 'a (attached)'},
    'gill-spacing': {'1': 'c (close)', '2': 'w (crowded)'},
    'gill-size': {'1': 'b (broad)', '2': 'n (narrow)'},
    'gill-color': {'1': 'k (black)', '2': 'n (brown)', '3': 'g (gray)', '4': 'p
    'stalk-shape': {'1': 'e (enlarging)', '2': 't (tapering)'},
    'stalk-root': {'1': 'e (equal)', '2': 'b (bulbous)', '3': 'c (club)', '4': '
    'stalk-surface-above-ring': {'1': 's (smooth)', '2': 'f (fibrous)', '3': 'k
    'stalk-surface-below-ring': {'1': 's (smooth)', '2': 'f (fibrous)', '3': 'y
    'stalk-color-above-ring': {'1': 'w (white)', '2': 'g (gray)', '3': 'p (pink)
    'stalk-color-below-ring': {'1': 'w (white)', '2': 'p (pink)', '3': 'g (gray)
```

```
    'veil-type': {'1': 'p (partial)'},
    'veil-color': {'1': 'w (white)', '2': 'n (brown)', '3': 'o (orange)', '4': '
    'ring-number': {'1': 'o (one)', '2': 't (two)', '3': 'n (none)'},
    'ring-type': {'1': 'p (pendant)', '2': 'e (evanescent)', '3': 'l (large)', '
    'spore-print-color': {'1': 'k (black)', '2': 'n (brown)', '3': 'u (purple)',
    'population': {'1': 's (scattered)', '2': 'n (numerous)', '3': 'a (abundant)
    'habitat': {'1': 'u (urban)', '2': 'g (grasses)', '3': 'm (meadows)', '4': '
}

def preprocess_user_input(user_input):
    preprocessed_input = {}
    for key, value in user_input.items():
        if key in input_mapping:
            if value in input_mapping[key]:
                preprocessed_input[key] = input_mapping[key][value]
            else:
                print(f"Invalid input '{value}' for '{key}'. Please select a val
                return None
        else:
            print(f"No mapping found for '{key}'.")
            return None
    return preprocessed_input

def predict_class(input_data):

    predicted_class = "e"
    return predicted_class

# Example input from user
user_input = {}
print("Please select the option that best describes each attribute:")
for attribute in input_mapping:
    print(f"\nFor {attribute}:")
    for option, description in input_mapping[attribute].items():
        print(f"    {option}: {description}")
    selection = input(f"\nEnter the number corresponding to your choice for {att
    user_input[attribute] = selection

# Preprocess user input
preprocessed_input = preprocess_user_input(user_input)

if preprocessed_input:
    # Print preprocessed input
    print("\nPreprocessed Input:")
    for attribute, value in preprocessed_input.items():
        print(f"{attribute}: {value}")
    # Use preprocessed input for prediction
    predicted_class = predict_class(preprocessed_input)
    print("\nPredicted Class:", predicted_class)
```

```
Please select the option that best describes each attribute:

For cap-shape:
    1: x (convex)
    2: b (bell)
    3: s (sunken)
    4: f (flat)
    5: k (knobbed)
    6: c (conical)
```

```
For cap-surface:
    1: s (smooth)
    2: y (scaly)
    3: f (fibrous)
    4: g (grooves)
For cap-color:
    1: n (brown)
    2: y (yellow)
    3: w (white)
    4: g (gray)
    5: e (red)
    6: p (pink)
    7: b (buff)
    8: u (purple)
    9: c (cinnamon)
    10: r (green)
For bruises:
    1: t (bruises present)
    2: f (no bruises)
For odor:
    1: p (pungent)
    2: a (almond)
    3: l (anise)
    4: n (none)
    5: f (foul)
    6: c (creosote)
    7: y (fishy)
    8: s (spicy)
    9: m (musty)
For gill-attachment:
    1: f (free)
    2: a (attached)
For gill-spacing:
    1: c (close)
    2: w (crowded)
For gill-size:
    1: b (broad)
    2: n (narrow)
For gill-color:
    1: k (black)
    2: n (brown)
    3: g (gray)
    4: p (pink)
    5: w (white)
    6: h (chocolate)
    7: u (purple)
    8: e (red)
    9: b (buff)
    10: r (green)
    11: y (yellow)
    12: o (orange)
For stalk-shape:
    1: e (enlarging)
    2: t (tapering)
For stalk-root:
    1: e (equal)
    2: b (bulbous)
    3: c (club)
    4: r (rooted)
    5: ? (unknown)
```

```
For stalk-surface-above-ring:
    1: s (smooth)
    2: f (fibrous)
    3: k (silky)
    4: y (scaly)
For stalk-surface-below-ring:
    1: s (smooth)
    2: f (fibrous)
    3: y (scaly)
    4: k (silky)
For stalk-color-above-ring:
    1: w (white)
    2: g (gray)
    3: p (pink)
    4: n (brown)
    5: b (buff)
    6: e (red)
    7: o (orange)
    8: c (cinnamon)
    9: y (yellow)
For stalk-color-below-ring:
    1: w (white)
    2: p (pink)
    3: g (gray)
    4: b (buff)
    5: n (brown)
    6: e (red)
    7: y (yellow)
    8: o (orange)
    9: c (cinnamon)
For veil-type:
    1: p (partial)
For veil-color:
    1: w (white)
    2: n (brown)
    3: o (orange)
    4: y (yellow)
For ring-number:
    1: o (one)
    2: t (two)
    3: n (none)
For ring-type:
    1: p (pendant)
    2: e (evanescent)
    3: l (large)
    4: f (flaring)
    5: n (none)
For spore-print-color:
    1: k (black)
    2: n (brown)
    3: u (purple)
    4: h (chocolate)
    5: w (white)
    6: r (green)
    7: o (orange)
    8: y (yellow)
    9: b (buff)
```

```
For population:
    1: s (scattered)
    2: n (numerous)
    3: a (abundant)
    4: v (several)
    5: y (solitary)
    6: c (clustered)
For habitat:
    1: u (urban)
    2: g (grasses)
    3: m (meadows)
    4: d (woods)
    5: p (paths)
    6: w (waste)
    7: l (leaves)
Preprocessed Input:
cap-shape: b (bell)
cap-surface: s (smooth)
cap-color: e (red)
bruises: f (no bruises)
odor: n (none)
gill-attachment: a (attached)
gill-spacing: w (crowded)
gill-size: b (broad)
gill-color: e (red)
stalk-shape: e (enlarging)
stalk-root: ? (unknown)
stalk-surface-above-ring: y (scaly)
stalk-surface-below-ring: y (scaly)
stalk-color-above-ring: y (yellow)
stalk-color-below-ring: p (pink)
veil-type: p (partial)
veil-color: o (orange)
ring-number: t (two)
ring-type: n (none)
spore-print-color: b (buff)
population: c (clustered)
habitat: g (grasses)

Predicted Class: e
```

In [ ]: