Conditional-Based Problem Set with Solutions

Master conditional logic using real-world inspired problems! 💡🧠

▶ 🔢 1. Age Group Categorization

Problem:

Classify a person based on their age:

- 👶 Child: Less than 13
- 🧒 Teenager: 13–19
- 🧑 Adult: 20–59
- 👴 Senior: 60 and above

Solution (Python):

```
age = int(input("Enter your age: "))

if age < 13:
    print("👶 Child")
elif age <= 19:
    print("🧒 Teenager")
elif age <= 59:
    print("🧑 Adult")
else:
    print("👴 Senior")
```

▶ 🎟️ 2. Movie Ticket Pricing

Problem:

Ticket price depends on age:

- 🧒 <18 → $8
- 🧑 ≥18 → $12
- 📅 Wednesday? Everyone gets $2 off!

Solution (Python):

```
age = int(input("Enter your age: "))
day = input("Enter the day: ").strip().lower()

price = 12 if age >= 18 else 8
if day == "wednesday":
    price -= 2
```

```
print(f"🎟️ Your ticket price is: ${price}")
```

▶ 📊 3. Grade Calculator

🩹 Problem:

Assign letter grade based on score:

- A (90–100), B (80–89), C (70–79), D (60–69), F (<60)

☑️ Solution (Python):

```
score = int(input("Enter your score: "))

if score >= 90:
    print("🅰️ Grade A")
elif score >= 80:
    print("🅱️ Grade B")
elif score >= 70:
    print("🇨 Grade C")
elif score >= 60:
    print("🇩 Grade D")
else:
    print("❌ Grade F")
```

▶ 🍌 4. Fruit Ripeness Checker

🩹 Problem:

Check banana ripeness by color:

- Green → Unripe
- Yellow → Ripe
- Brown → Overripe

☑️ Solution (Python):

```
color = input("Enter banana color: ").strip().lower()

if color == "green":
    print("🟢 Unripe")
elif color == "yellow":
    print("🟡 Ripe")
elif color == "brown":
    print("🟤 Overripe")
else:
    print("❓ Unknown color")
```

▶ 🌤️ 5. Weather Activity Suggestion

🩹 Problem:

Suggest an activity:

- Sunny → Walk
- Rainy → Read
- Snowy → Snowman

☑️ Solution (Python):

```
weather = input("Enter the weather: ").strip().lower()

if weather == "sunny":
    print("🚶 Go for a walk")
elif weather == "rainy":
    print("📖 Read a book")
elif weather == "snowy":
    print("☃️ Build a snowman")
else:
    print("📦 Relax indoors")
```

▶ 🚙 6. Transportation Mode Selection

🩹 Problem:

Choose transport:

- ❤️ km → Walk
- 3–15 km → Bike
- > 15 km → Car

☑️ Solution (Python):

```
distance = float(input("Enter distance in km: "))

if distance < 3:
    print("🚶 Walk")
elif distance <= 15:
    print("🚴 Bike")
else:
    print("🚙 Car")
```

▶ ☕ 7. Coffee Customization

🩹 Problem:

Customize coffee order with size and extra shot option.

☑️ Solution (Python):

```
size = input("Choose size (Small/Medium/Large): ").capitalize()
extra_shot = input("Add extra shot? (yes/no): ").strip().lower()

print(f"☕ You ordered a {size} coffee", end="")
if extra_shot == "yes":
    print(" with an ☕ extra shot! ⚡")
else:
    print(". Enjoy your brew!")
```

▶ 🔐 8. Password Strength Checker

🩹 Problem:

Check password strength:

- <6 → Weak
- 6–10 → Medium
- > 10 → Strong

☑️ Solution (Python):

```
password = input("Enter password: ")
length = len(password)

if length < 6:
    print("❗ Weak Password")
elif length <= 10:
    print("⚠️ Medium Password")
else:
    print("☑️ Strong Password")
```

▶ 🧮 9. Leap Year Checker

🩹 Problem:

Determine leap year using rules:

- Divisible by 4 ☑️
- Not by 100 ❌ unless also by 400 ✔️

☑ Solution (Python):

```
year = int(input("Enter a year: "))

if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print("☑ It's a Leap Year!")
else:
    print("❌ Not a Leap Year")
```

▶ 🐾 10. Pet Food Recommendation

🩹 Problem:

Suggest food based on pet type & age:

- Dog <2 → Puppy food
- Cat >5 → Senior food

☑ Solution (Python):

```
species = input("Enter pet species (Dog/Cat): ").strip().lower()
age = float(input("Enter age in years: "))

if species == "dog" and age < 2:
    print("🐶 Recommend: Puppy food")
elif species == "cat" and age > 5:
    print("🐱 Recommend: Senior cat food")
else:
    print("🍽 Recommend: Standard adult food")
```
