This unit converter is a straightforward and effective tool for converting between common units of measurement in length, weight, and temperature, making it useful for various applications in everyday life.

```
def convert_length(value, from_unit, to_unit):
  units_in_meters = {
     "meters": 1,
     "kilometers": 1000,
     "centimeters": 0.01,
     "millimeters": 0.001,
     "miles": 1609.34,
     "yards": 0.9144,
     "feet": 0.3048,
     "inches": 0.0254,
  }
  # Convert value to meters
  value_in_meters = value * units_in_meters[from_unit]
  # Convert meters to target unit
  return value_in_meters / units_in_meters[to_unit]
```

```
def convert_weight(value, from_unit, to_unit):
  units_in_kg = {
      "kilograms": 1,
      "grams": 0.001,
      "milligrams": 0.000001,
      "pounds": 0.453592,
      "ounces": 0.0283495,
  }
  value_in_kg = value * units_in_kg[from_unit]
  return value_in_kg / units_in_kg[to_unit]


def convert_temperature(value, from_unit, to_unit):
  # Convert from source to celsius
  celsius = None
  if from_unit == "celsius":
      celsius = value
  elif from_unit == "fahrenheit":
```

```
        celsius = (value - 32) * 5 / 9
    elif from_unit == "kelvin":
        celsius = value - 273.15
    else:
        raise ValueError("Invalid temperature unit.")
    # Convert celsius to target
    if to_unit == "celsius":
        return celsius
    elif to_unit == "fahrenheit":
        return (celsius * 9 / 5) + 32
    elif to_unit == "kelvin":
        return celsius + 273.15
    else:
        raise ValueError("Invalid temperature unit.")


def main():
    print("Unit Converter")
```

```
print("Select conversion category:")

print("1. Length")

print("2. Weight")

print("3. Temperature")



category = input("Enter choice (1-3): ").strip()

if category == "1":

    units = ["meters", "kilometers", "centimeters", "millimeters", "miles", "yards", "feet", "inches"]

    convert_func = convert_length

elif category == "2":

    units = ["kilograms", "grams", "milligrams", "pounds", "ounces"]

    convert_func = convert_weight

elif category == "3":

    units = ["celsius", "fahrenheit", "kelvin"]

    convert_func = convert_temperature

else:

    print("Invalid choice. Exiting.")

    return
```

```
print(f"Available units: {', '.join(units)}")



from_unit = input("Convert from: ").strip().lower()

if from_unit not in units:

    print("Invalid from unit. Exiting.")

    return



to_unit = input("Convert to: ").strip().lower()

if to_unit not in units:

    print("Invalid to unit. Exiting.")

    return



try:

    value = float(input("Enter value to convert: ").strip())

except ValueError:

    print("Invalid number. Exiting.")
```

```
        return



    try:
        result = convert_func(value, from_unit, to_unit)
        print(f"{value} {from_unit} = {result} {to_unit}")
    except Exception as e:
        print(f"Conversion error: {e}")



if __name__ == "__main__":
    main()
```