

Decimal Degrees to DMS Converter for CNC Machinists

Overview

The Decimal Degrees to DMS Converter is a Python utility designed for CNC machinists to convert angles from

Features

- **Simple Input**: Accepts a single decimal degree value.
- **Precision**: Seconds rounded to 2 decimal places for machining accuracy.
- **Validation**: Ensures non-negative angles (typically < 360° for machining).
- **Output Format**: Displays DMS in standard notation (e.g., °, ', ").
- **Error Handling**: Handles invalid or non-numeric inputs.

Requirements

- Python 3.x (no external libraries required).
- A terminal or command-line interface (e.g., on a shop floor laptop or tablet).

Installation

1. Save the script as `decimal\_to\_dms.py`.
2. Ensure Python 3 is installed on the target device (e.g., `python3 --version`).
3. No additional dependencies are needed.

Usage

1. Run the script:

```
```bash
python3 decimal_to_dms.py
```
```
2. Enter the angle in decimal degrees when prompted.
3. View the converted DMS result.

Example

```
```plaintext
Decimal Degrees to DMS Converter for CNC Machinist
Enter an angle in decimal degrees (e.g., 45.6789)
Angle (decimal degrees): 45.6789

DMS Result: 45° 40' 44.04"
```
```

Additional Example

```
```plaintext
Decimal Degrees to DMS Converter for CNC Machinist
Enter an angle in decimal degrees (e.g., 45.6789)
Angle (decimal degrees): 123.4567

DMS Result: 123° 27' 24.12"
```
```

Notes

- The script assumes angles are typically < 360° for machining contexts but can handle larger angles.
- Output is formatted for easy reading by machinists.
- For reverse conversion (DMS to decimal) or a GUI, contact the developer.

Limitations

- Does not support negative angles (not typical in machining).
- Seconds are rounded to 2 decimal places, which is sufficient for most CNC applications.

License

MIT License. Free to use and modify for shop floor applications.

Contact

For support or feature requests, contact your shop's IT or engineering team.