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# Spline(bpy\_struct)

base class — `bpy_struct`

**class** `bpy.types.Spline(bpy_struct)`

Element of a curve, either NURBS, Bézier or Polyline or a character with text objects

## **bezier\_points**

Collection of points for Bézier curves only

### **TYPE:**

`SplineBezierPoints` `bpy_prop_collection` of `BezierSplinePoint` , (readonly)

## **character\_index**

Location of this character in the text data (only for text curves)

### **TYPE:**

int in [0, inf], default 0, (readonly)

## **hide**

Hide this curve in Edit mode

### **TYPE:**

boolean, default False

## **material\_index**

Material slot index of this curve

### **TYPE:**

int in [0, 32767], default 0

## **order\_u**

NURBS order in the U direction. Higher values make each point influence a greater area, but have worse performance.

### **TYPE:**

int in [2, 64], default 0

## **order\_v**

NURBS order in the V direction. Higher values make each point influence a greater area, but have worse performance.

### **TYPE:**

int in [2, 64], default 0

## **point\_count\_u**

Total number points for the curve or surface in the U direction

### **TYPE:**

int in [0, inf], default 0, (readonly)

## **point\_count\_v**

Total number points for the surface on the V direction

### **TYPE:**

int in [0, inf], default 0, (readonly)

## **points**

Collection of points that make up this poly or nurbs spline

**TYPE:**

`SplinePoints bpy_prop_collection` of `SplinePoint`, (readonly)

**radius\_interpolation**

The type of radius interpolation for Bézier curves

**TYPE:**

enum in ['LINEAR', 'CARDINAL', 'BSPLINE', 'EASE'], default 'LINEAR'

**resolution\_u**

Curve or Surface subdivisions per segment

**TYPE:**

int in [1, 1024], default 0

**resolution\_v**

Surface subdivisions per segment

**TYPE:**

int in [1, 1024], default 0

**tilt\_interpolation**

The type of tilt interpolation for 3D, Bézier curves

**TYPE:**

enum in ['LINEAR', 'CARDINAL', 'BSPLINE', 'EASE'], default 'LINEAR'

**type**

The interpolation type for this curve element

**TYPE:**

enum in ['POLY', 'BEZIER', 'NURBS'], default 'POLY'

**use\_bezier\_u**

Make this nurbs curve or surface act like a Bézier spline in the U direction

**TYPE:**

boolean, default False

**use\_bezier\_v**

Make this nurbs surface act like a Bézier spline in the V direction

**TYPE:**

boolean, default False

**use\_cyclic\_u**

Make this curve or surface a closed loop in the U direction

**TYPE:**

boolean, default False

**use\_cyclic\_v**

Make this surface a closed loop in the V direction

**TYPE:**

boolean, default False

### **use\_endpoint\_u**

Make this nurbs curve or surface meet the endpoints in the U direction

#### **TYPE:**

boolean, default False

### **use\_endpoint\_v**

Make this nurbs surface meet the endpoints in the V direction

#### **TYPE:**

boolean, default False

### **use\_smooth**

Smooth the normals of the surface or beveled curve

#### **TYPE:**

boolean, default False

### **calc\_length(\*, resolution=0)**

Calculate spline length

#### **PARAMETERS:**

**resolution** (*int in [0, 1024], (optional)*) – Resolution, Spline resolution to be used, 0 defaults to the resolution\_u

#### **RETURNS:**

Length, Length of the polygonally approximated spline

#### **RETURN TYPE:**

float in [0, inf]

### **valid\_message(direction)**

Return the message

#### **PARAMETERS:**

**direction** (*int in [0, 1]*) – Direction, The direction where 0-1 maps to U-V

#### **RETURNS:**

Return value, The message or an empty string when there is no error

#### **RETURN TYPE:**

string

### **classmethod bl\_ma\_get\_subclass(id, default=None)**

#### **PARAMETERS:**

**id** (*str*) – The RNA type identifier.

#### **RETURNS:**

The RNA type or default when not found.

#### **RETURN TYPE:**

`bpy.types.Struct` subclass

### **classmethod bl\_ma\_get\_subclass\_py(id, default=None)**

#### **PARAMETERS:**

**id** (*str*) – The RNA type identifier.

#### **RETURNS:**

The class or default when not found.

#### **RETURN TYPE:**

RETURN TYPE:

`type`

## Inherited Properties

- `bpy_struct.id_data`

## Inherited Functions

- `bpy_struct.as_pointer`
- `bpy_struct.driver_add`
- `bpy_struct.driver_remove`
- `bpy_struct.get`
- `bpy_struct.id_properties_clear`
- `bpy_struct.id_properties_ensure`
- `bpy_struct.id_properties_ui`
- `bpy_struct.is_property_hidden`
- `bpy_struct.is_property_overridable_library`
- `bpy_struct.is_property_readonly`
- `bpy_struct.is_property_set`
- `bpy_struct.items`
- `bpy_struct.keyframe_delete`
- `bpy_struct.keyframe_insert`
- `bpy_struct.keys`
- `bpy_struct.path_from_id`
- `bpy_struct.path_resolve`
- `bpy_struct.pop`
- `bpy_struct.property_overridable_library_set`
- `bpy_struct.property_unset`
- `bpy_struct.type_recast`
- `bpy_struct.values`

## References

- `Curve.splines`
- `CurveSplines.new`
- `CurveSplines.active`
- `CurveSplines.remove`