

Opgave 3.0.1 - Gridfinity Baseplate parametric modeling

VarSet

Til at opbevaring af vores parametric data vil jeg haer bruge [Std VarSet](#).

- [Klik her for at se mere om FreeCAD Std VarSet](#)
 - Vigtig læsning er afsnittene:
 - Description
 - Usage

VarSet Grid parameter

| Name | Group | Type | Value |
|-----------------|-------|---------------------|---------|
| GridSize | Grid | App::PropertyLength | 42,00mm |
| GridOuterRadius | Grid | App::PropertyLength | 4,00mm |

VarSet Baseplate parameter

| Name | Group | Type | Value |
|------------------------|-----------|----------------------|------------------------|
| BaseplateWidth | Baseplate | App::PropertyLength | VarSet.GridSize |
| BaseplateRadius | Baseplate | App::PropertyLength | VarSet.GridOuterRadius |
| BaseplatePadLength | Baseplate | App::PropertyLength | 3,00mm |
| BaseplatePad2nd_Length | Baseplate | App::PropertyLength | 0,40mm |
| BasePlateProfileLower | Baseplate | App::PropertyLength | 0,70mm |
| BasePlateProfileMiddle | Baseplate | App::PropertyLength | 1,80mm |
| BasePlateProfileTop | Baseplate | App::PropertyLength | 2,15mm |
| BasePlateProfileHeight | Baseplate | App::PropertyLength | 2,85mm |
| BasePlateProfileAngle | Baseplate | App::PropertyAngle | 45,00 deg |
| BasePlateGridX | Baseplate | App::PropertyInteger | 2 |
| BasePlateGridY | Baseplate | App::PropertyInteger | 3 |

VarSet Bins/Blocks parameter

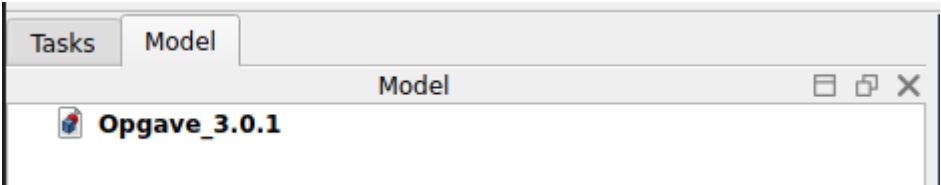
| Group | Name | Type | Value |
|-------|------|------|-------|
|-------|------|------|-------|


| Group | Name | Type | Value |
|------------|--------------------------|----------------------|--|
| GridOffset | Grid | App::PropertyLength | 0,25mm |
| BinBlocks | BinBlocks_Pad_X | App::PropertyLength | (VarSet.Grid_Size * BinBlocks_Grid_X) - VarSet.Grid_Bin_Offset |
| BinBlocks | BinBlocks_Pad_Y | App::PropertyLength | (VarSet.Grid_Size * BinBlocks_Grid_Y) - VarSet.Grid_Bin_Offset |
| BinBlocks | BinBlocks_Pad_Z | App::PropertyLength | VarSet.Grid_Size - VarSet.Grid_Bin_Offset |
| BinBlocks | BinBlocks_Pad_Top_Height | App::PropertyLength | 21,00mm |
| BinBlocks | BinBlocks_Profile_Lower | App::PropertyLength | Varset.BasePlate_Profile_Lower + 0,1mm |
| BinBlocks | BinBlocks_Profile_Middle | App::PropertyLength | 1,80mm |
| BinBlocks | BinBlocks_Profile_Top | App::PropertyLength | 2,15mm |
| BinBlocks | BinBlocks_Profile_Height | App::PropertyLength | 2,95mm |
| BinBlocks | BinBlocks_Profile_Angle | App::PropertyAngle | 45,00 deg |
| BinBlocks | BinBlocks_Grid_X | App::PropertyInteger | 1 |
| BinBlocks | BinBlocks_Grid_Y | App::PropertyInteger | 1 |

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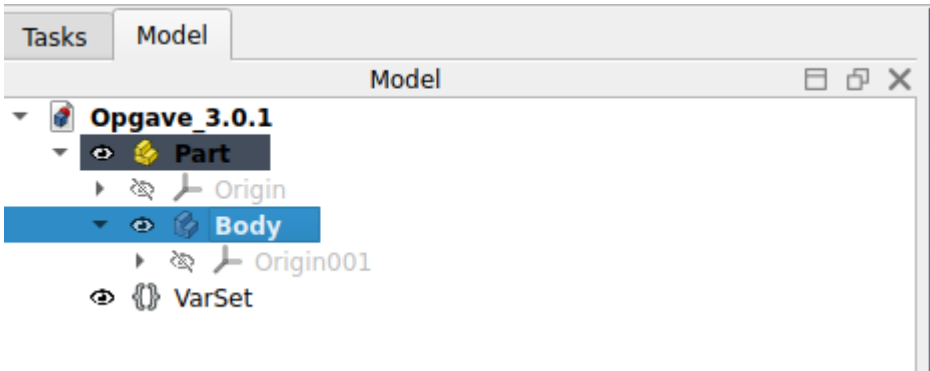
Step 1 - Opret dokument

- Start FreeCAD i Part Design
 - Gem opgaven med filnavnet i dit opgave directory
 - Vælg Model i Combo View



-  vær nu sikker på at det **Create Part** du klikker på det er det **gule icon**, se en beskrivelsen af [Std Part](#)
- Klik nu på **Creates a variable set** 
 - Klick [Cancel] for at komme tilbage.
- Klik nu på **Create Body**, den blå icon 

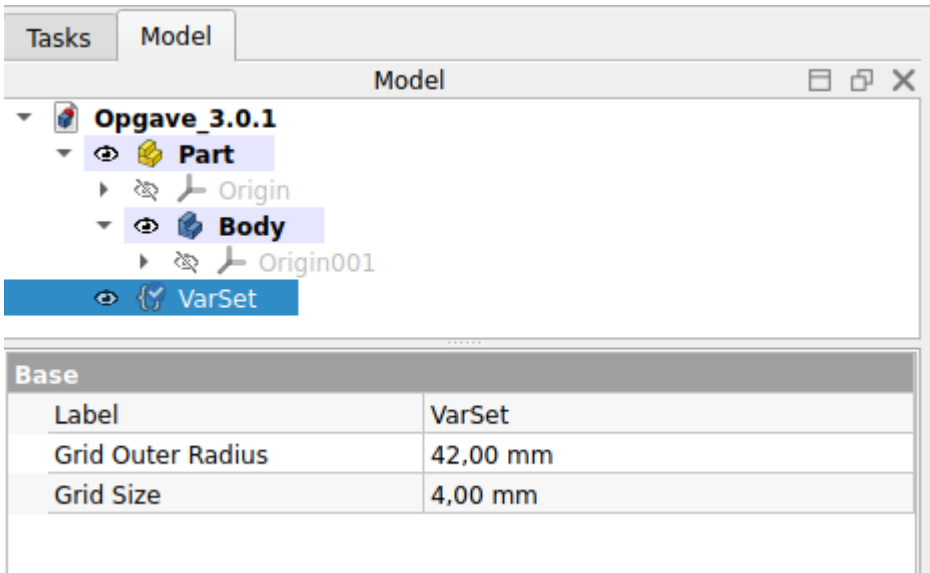
- Dit Model View skulle nu gerne se ud som herunder



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Step 2 - Indset i VarSet

- Double klik nu på **{}** **VarSet** i Model View
 - Tilføj nu værdierne som listet herunder, sikre dig at Navn, Group & Type er korrekte
 - klik igen på VarSet og tilføj Value
 - Dit Model View skulle nu gerne se ud som herunder



◦

| Name | Group | Type | Value |
|------------------------|-----------|----------------------|-----------|
| GridSize | Grid | App::PropertyLength | 42,00mm |
| GridOuterRadius | Grid | App::PropertyLength | 4,00mm |
| BaseplatePadLength | Baseplate | App::PropertyLength | 3,00mm |
| BaseplatePad2nd_Length | Baseplate | App::PropertyLength | 0,40mm |
| BasePlateProfileLower | Baseplate | App::PropertyLength | 0,70mm |
| BasePlateProfileMiddle | Baseplate | App::PropertyLength | 1,80mm |
| BasePlateProfileTop | Baseplate | App::PropertyLength | 2,15mm |
| BasePlateProfileAngle | Baseplate | App::PropertyAngle | 45,00 deg |
| BasePlateGridX | Baseplate | App::PropertyInteger | 2 |

| Name | Group | Type | Value |
|----------------|-----------|----------------------|-------|
| BasePlateGridY | Baseplate | App::PropertyInteger | 3 |

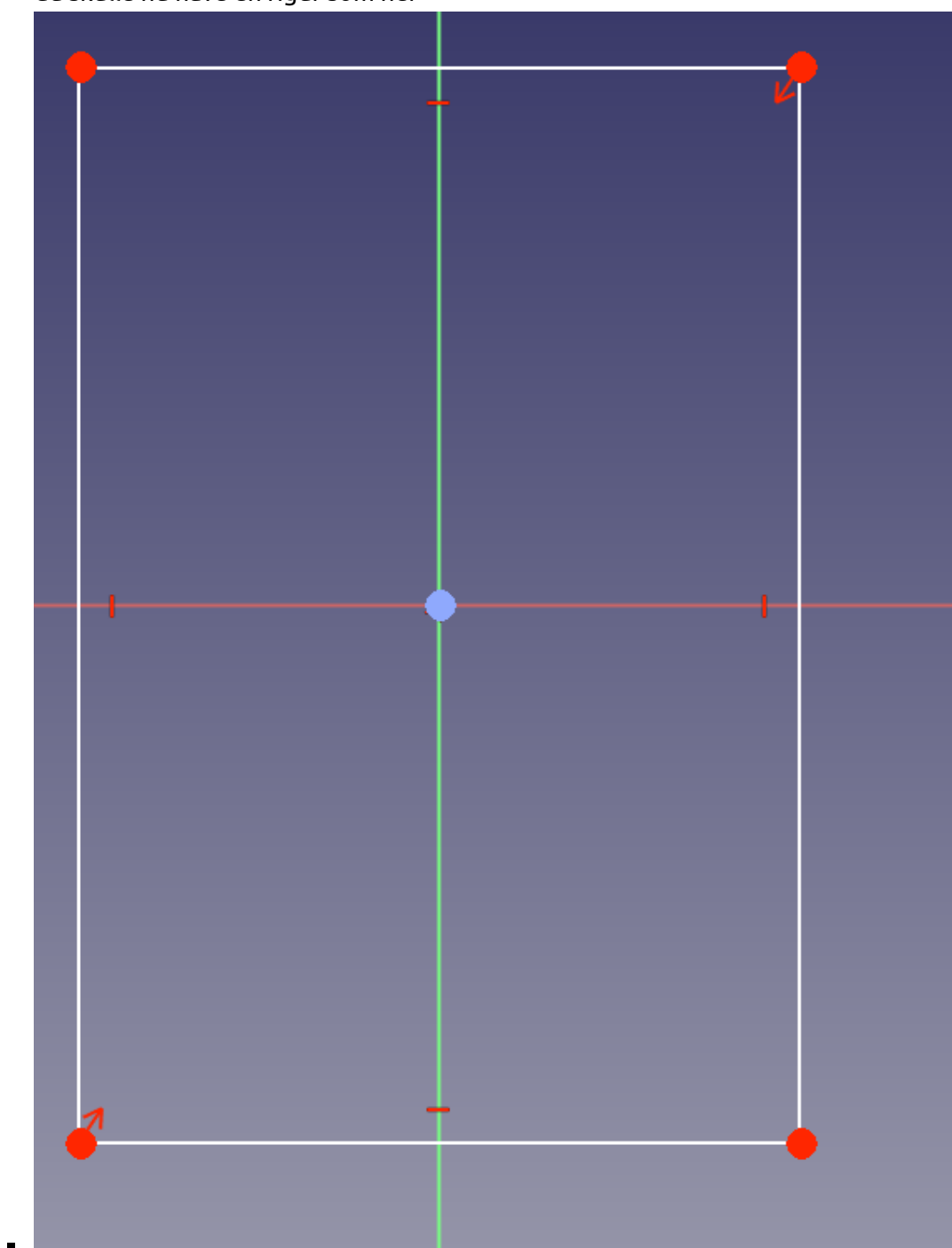
Step 3 - Tegn Baseplate 1. trin

- Klik nu på **Create Sketch**
 - Vælg XY-plane001 (Base plane)
 - Klik [OK]

- Vælg nu tegne værktøjet **Centered rectangle**



- Start tegningen i nulpunktet.
 - Tegn nu en firkant, klik og ryk lidt tilbage så der kommer runde hjørner.
 - du skulle nu have en figur som her



Step 3 - Tegn Baseplate 2. trin

```
* Select **Rounded corners**  
* ![Rounded corners](./Images/Opgave_3/Skærbillede%20fra%202024-10-22%2020-42-02.png)  
  * ![Step3a](./Images/Opgave_3/Skærbillede%20fra%202024-10-22%2020-52-00.png)
```