# Part 1

# InvenTree

* Open-source Inventory Management system with intuitive parts management and stock control.
* Python and Django application, stores data in relational database.
* Can be developed into web application as well as custom application via an API.

## Parts

* Part object is the basis of any stock item in inventory.
* Part categories are defined to further organize and filter part according to categories and sub-categories.
* Options: Each Part defined in the database provides a number of different options which determine how that part can be used and configuring these options will impact available functionalities that can be performed on that part.
* The options are:
  + Virtual (which doesn’t physically exist but still has to tracked, e.g., software license, machine time)
  + Template (this can have variants underneath it that can based on a template part)
  + Component (an Assembly can be created using these sub-components)
  + Assembly (as an example, a circuit board assembly is made using many components, which are tracked in the system. It has a Bill of Materials (BOM) which lists all the required sub components)
  + Other Part options include, Trackable (can be assigned serial no. to uniquely identify a particular stock item, Purchasable (from external sellers), Salable (sell-able to external customers), Active/Inactive.

## Suppliers

* Suppliers can be added, edited, and deleted.
* Supplier parts can be created and tracked using availability information manually or via a supplier API.
* Supplier parts are linked to a supplier and defined as “Purchasable” items.

## Stock Information

* A stock item is an instance of Part item.
* Represents physical quantity in a specific location.
* Details include: Part, Location, quantity, Supplier/Supplier-part if appropriate, Stocktake (count), Status and last updated.

## Bill of Materials (BOM) Item

* A Bill of Materials (BOM) defines the list of component parts required to make an assembly.
* An item in BOM has the details: Part, quantity, inherited (whether this BOM Line Item will be "inherited" by BOMs for parts), optional or not.
* BOM file can be uploaded as well in csv, xlsx, etc.

## Build Parts

* A Build Order is used to create new stock by assembling component parts, according to a Bill of Materials (BOM).
* A Build Order uses the BOM to allocate stock items to the assembly process. As the Build Order is completed, the required stock quantities are subtracted from allocated stock items.
* Has Status flags (pending, production, cancelled, completed, etc.)

# Part 2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Features\Users | Reader | Engineer | AllAccess | Admin |
| View Access to Parts, Stocks, Build Orders | Checkmark | Checkmark | Checkmark | Checkmark |
| View Access to Purchase order, Sales Orders, Manufacturers, Customers and Suppliers | Checkmark | Close | Checkmark | Checkmark |
| Create\Update Access to Parts, Stocks | Close | Checkmark | Checkmark | Checkmark |
| Create\Update Access to Build Orders | Close | Close | Checkmark | Checkmark |
| Create\Update Access to Purchase order, Sales Orders, Manufacturers, Customers and Suppliers | Close | Close | Checkmark | Checkmark |
| Access to configure InvenTree Server Settings | Close | Close | Close | Checkmark |
| Access to backend configuration of Parts, Stocks, Build Order, Purchase orders, Sales Orders and their default settings | Close | Close | Close | Checkmark |

# Part 3

The Dataset has 40 unique models.

{'part.partparameter', 'order.purchaseorderextraline', 'part.partparametertemplate', 'auth.group', 'part.part', 'part.partrelated', 'part.partattachment', 'order.purchaseorderlineitem', 'order.salesorderextraline', 'company.manufacturerpart', 'order.salesorderallocation', 'order.salesorderlineitem', 'stock.stockitem', 'part.bomitem', 'auth.user', 'users.ruleset', 'order.salesordershipment', 'report.buildreport', 'stock.stockitemtracking', 'part.partstar', 'part.parttesttemplate', 'stock.stockitemtestresult', 'report.testreport', 'common.inventreesetting', 'build.builditem', 'order.purchaseorder', 'part.partcategory', 'plugin.notificationusersetting', 'stock.stocklocation', 'company.supplierpart', 'label.stocklocationlabel', 'sites.site', 'label.stockitemlabel', 'company.company', 'order.salesorder', 'plugin.pluginconfig', 'part.bomitemsubstitute', 'label.partlabel', 'common.inventreeusersetting', 'build.build'}

Every model has attributes “model”, “pk” (Primary Key), “fields”

For every model, “fields” attribute is unique and is related to the different parameters it needs.

All the 40 unique model are:

[

{

"model": "auth.group",

"pk": 1,

"fields": {

"name": "readers",

"permissions": []

}

},

{

"model": "auth.user",

"pk": 1,

"fields": {

"password": "pbkdf2\_sha256$260000$NNqALp0c36DPuISI5Q6iM3$+ILiuXGdDbEo4PXR5myUO/zHaNXhzHMPdtN2lZaKrg8=",

"last\_login": "2022-06-03T06:55:42.969Z",

"is\_superuser": true,

"username": "admin",

"first\_name": "",

"last\_name": "",

"email": "",

"is\_staff": true,

"is\_active": true,

"date\_joined": "2021-06-20T05:52:40.528Z",

"groups": [],

"user\_permissions": []

}

},

{

"model": "sites.site",

"pk": 1,

"fields": {

"domain": "https://demo.inventreedb.com",

"name": "InvenTree Demo"

}

},

{

"model": "build.build",

"pk": 1,

"fields": {

"reference\_int": 1,

"reference": "0001",

"title": "Building some colorful widgets",

"parent": null,

"part": 77,

"sales\_order": null,

"take\_from": null,

"destination": 1,

"quantity": 15,

"completed": 1,

"status": 20,

"batch": null,

"creation\_date": "2021-11-10",

"target\_date": null,

"completion\_date": null,

"completed\_by": null,

"issued\_by": 1,

"responsible": null,

"link": "",

"notes": "",

"lft": 1,

"rght": 2,

"tree\_id": 1,

"level": 0

}

},

{

"model": "build.builditem",

"pk": 11,

"fields": {

"build": 3,

"bom\_item": 243,

"stock\_item": 7,

"quantity": "150.00000",

"install\_into": null

}

},

{

"model": "common.inventreesetting",

"pk": 1,

"fields": {

"value": "USD",

"key": "INVENTREE\_DEFAULT\_CURRENCY"

}

},

{

"model": "common.inventreeusersetting",

"pk": 1,

"fields": {

"value": "10",

"key": "SEARCH\_PREVIEW\_RESULTS",

"user": 1

}

},

{

"model": "company.company",

"pk": 1,

"fields": {

"name": "DigiKey",

"description": "DigiKey Electronics",

"website": "https://www.digikey.com/",

"address": "",

"phone": "",

"email": null,

"contact": "",

"link": "",

"image": "company\_images/company\_1\_img.jpg",

"notes": "",

"is\_customer": false,

"is\_supplier": true,

"is\_manufacturer": false,

"currency": "USD"

}

},

{

"model": "company.manufacturerpart",

"pk": 1,

"fields": {

"part": 43,

"manufacturer": 4,

"MPN": "RR0510P-104-D",

"link": null,

"description": null

}

},

{

"model": "company.supplierpart",

"pk": 11,

"fields": {

"part": 43,

"supplier": 1,

"SKU": "RR05P100KDTR-ND",

"manufacturer\_part": 1,

"link": "https://www.digikey.com/product-detail/en/susumu/RR0510P-104-D/RR05P100KDTR-ND/432443",

"description": "RES SMD 100K OHM 0.5% 1/16W 0402",

"note": null,

"base\_cost": "0.000",

"packaging": null,

"multiple": 1

}

},

{

"model": "label.stockitemlabel",

"pk": 1,

"fields": {

"name": "QR Code",

"description": "Simple QR code label",

"label": "label/inventree/stockitem/qr.html",

"enabled": true,

"width": 24,

"height": 24,

"filename\_pattern": "label.pdf",

"filters": ""

}

},

{

"model": "label.stocklocationlabel",

"pk": 1,

"fields": {

"name": "QR Code",

"description": "Simple QR code label",

"label": "label/inventree/stocklocation/qr.html",

"enabled": true,

"width": 24,

"height": 24,

"filename\_pattern": "label.pdf",

"filters": ""

}

},

{

"model": "label.partlabel",

"pk": 1,

"fields": {

"name": "Part Label",

"description": "Simple part label",

"label": "label/inventree/part/part\_label.html",

"enabled": true,

"width": 70,

"height": 24,

"filename\_pattern": "label.pdf",

"filters": ""

}

},

{

"model": "order.purchaseorder",

"pk": 1,

"fields": {

"reference\_int": 1,

"metadata": null,

"description": "Ordering some parts",

"link": "",

"creation\_date": "2021-11-26",

"created\_by": 1,

"responsible": 2,

"notes": "",

"reference": "0001",

"status": 20,

"supplier": 1,

"supplier\_reference": "",

"received\_by": null,

"issue\_date": "2021-11-26",

"target\_date": "2021-12-10",

"complete\_date": null

}

},

{

"model": "order.salesorder",

"pk": 1,

"fields": {

"reference\_int": 1,

"metadata": null,

"description": "Selling some stuff",

"link": "",

"creation\_date": "2021-11-17",

"created\_by": 1,

"responsible": 6,

"notes": "",

"reference": "0001",

"customer": 30,

"status": 10,

"customer\_reference": "",

"target\_date": null,

"shipment\_date": null,

"shipped\_by": null

}

},

{

"model": "order.purchaseorderlineitem",

"pk": 1,

"fields": {

"quantity": "1000.00000",

"reference": "",

"notes": "",

"target\_date": null,

"order": 1,

"part": 12,

"received": "0.00000",

"purchase\_price\_currency": "USD",

"purchase\_price": "0.0500",

"destination": null

}

},

{

"model": "order.purchaseorderextraline",

"pk": 1,

"fields": {

"quantity": "1.00000",

"reference": "Shipping",

"notes": "Shipping",

"target\_date": null,

"context": null,

"price\_currency": "USD",

"price": "25.0000",

"order": 4

}

},

{

"model": "order.salesorderlineitem",

"pk": 1,

"fields": {

"quantity": "3.00000",

"reference": "",

"notes": "Blue chairs",

"target\_date": null,

"order": 1,

"part": 108,

"sale\_price\_currency": "USD",

"sale\_price": "50.0000",

"shipped": "0.00000"

}

},

{

"model": "order.salesordershipment",

"pk": 1,

"fields": {

"order": 1,

"shipment\_date": null,

"checked\_by": null,

"reference": "001",

"notes": "",

"tracking\_number": "",

"invoice\_number": "",

"link": ""

}

},

{

"model": "order.salesorderextraline",

"pk": 1,

"fields": {

"quantity": "1.00000",

"reference": "Interior design consulting",

"notes": "",

"target\_date": null,

"context": null,

"price\_currency": "USD",

"price": "1000.0000",

"order": 2

}

},

{

"model": "order.salesorderallocation",

"pk": 1,

"fields": {

"line": 1,

"shipment": 1,

"item": 231,

"quantity": "3.00000"

}

},

{

"model": "part.partcategory",

"pk": 1,

"fields": {

"name": "Electronics",

"description": "Electronic components and systems",

"parent": null,

"metadata": null,

"default\_location": null,

"default\_keywords": null,

"lft": 1,

"rght": 22,

"tree\_id": 1,

"level": 0

}

},

{

"model": "part.part",

"pk": 1,

"fields": {

"metadata": null,

"name": "R\_10R\_0402\_1%",

"is\_template": false,

"variant\_of": null,

"description": "10R resistor in 0402 SMD package",

"keywords": "resistor smd 0402",

"category": 5,

"IPN": null,

"revision": null,

"link": null,

"image": "part\_images/0402.jpg",

"default\_location": null,

"default\_supplier": null,

"default\_expiry": 0,

"minimum\_stock": 0,

"units": "",

"assembly": false,

"component": true,

"trackable": false,

"purchaseable": true,

"salable": false,

"active": true,

"virtual": false,

"notes": null,

"bom\_checksum": "",

"bom\_checked\_by": null,

"bom\_checked\_date": null,

"creation\_date": "2021-06-20",

"creation\_user": 1,

"responsible": null,

"base\_cost": "0.000",

"multiple": 1,

"lft": 1,

"rght": 2,

"tree\_id": 1,

"level": 0

}

},

{

"model": "part.partattachment",

"pk": 1,

"fields": {

"attachment": "part\_files/85/1591BTBU.pdf",

"link": null,

"comment": "Datasheet",

"user": null,

"upload\_date": "2021-11-15",

"part": 85

}

},

{

"model": "part.partstar",

"pk": 1,

"fields": {

"part": 70,

"user": 1

}

},

{

"model": "part.parttesttemplate",

"pk": 1,

"fields": {

"part": 77,

"test\_name": "Paint",

"description": "Paint has been applied",

"required": true,

"requires\_value": true,

"requires\_attachment": false

}

},

{

"model": "part.partparametertemplate",

"pk": 1,

"fields": {

"name": "Package",

"units": ""

}

},

{

"model": "part.partparameter",

"pk": 1,

"fields": {

"part": 1,

"template": 1,

"data": "0402"

}

},

{

"model": "part.bomitem",

"pk": 1,

"fields": {

"part": 77,

"sub\_part": 72,

"quantity": "3.00000",

"optional": false,

"overage": "",

"reference": "R",

"note": "",

"checksum": "b'\\x17\\xe7\\x16Q\\x92zC%\\xf5\\x98\\xec\\x1a9\\xc7C\\x7f'",

"inherited": true,

"allow\_variants": true

}

},

{

"model": "part.bomitemsubstitute",

"pk": 1,

"fields": {

"bom\_item": 15,

"part": 84

}

},

{

"model": "part.partrelated",

"pk": 1,

"fields": {

"part\_1": 89,

"part\_2": 92

}

},

{

"model": "report.testreport",

"pk": 1,

"fields": {

"name": "InvenTree Test Report",

"template": "report/inventree/test/inventree\_test\_report.html",

"description": "Stock item test report",

"revision": 2,

"filename\_pattern": "report.pdf",

"enabled": true,

"filters": "",

"include\_installed": false

}

},

{

"model": "report.buildreport",

"pk": 1,

"fields": {

"name": "InvenTree Build Order",

"template": "report/inventree/build/inventree\_build\_order.html",

"description": "Build Order job sheet",

"revision": 2,

"filename\_pattern": "report.pdf",

"enabled": true,

"filters": ""

}

},

{

"model": "stock.stocklocation",

"pk": 1,

"fields": {

"name": "Factory",

"description": "",

"parent": null,

"metadata": null,

"owner": null,

"lft": 1,

"rght": 14,

"tree\_id": 2,

"level": 0

}

},

{

"model": "stock.stockitem",

"pk": 2,

"fields": {

"metadata": null,

"uid": "",

"parent": null,

"part": 28,

"supplier\_part": 31,

"location": 8,

"packaging": "reel",

"belongs\_to": null,

"customer": null,

"serial": null,

"serial\_int": 0,

"link": "",

"batch": null,

"quantity": "440.00000",

"updated": "2022-05-25",

"build": null,

"is\_building": false,

"purchase\_order": null,

"sales\_order": null,

"expiry\_date": null,

"stocktake\_date": null,

"stocktake\_user": null,

"review\_needed": false,

"delete\_on\_deplete": true,

"status": 10,

"notes": null,

"purchase\_price\_currency": "USD",

"purchase\_price": null,

"owner": null,

"infinite": false,

"lft": 1,

"rght": 2,

"tree\_id": 1,

"level": 0

}

},

{

"model": "stock.stockitemtracking",

"pk": 2,

"fields": {

"tracking\_type": 1,

"item": 2,

"date": "2021-07-28T14:37:51.084Z",

"notes": "",

"user": null,

"deltas": {

"status": 10,

"location": 8,

"quantity": 1000

}

}

},

{

"model": "stock.stockitemtestresult",

"pk": 1,

"fields": {

"stock\_item": 205,

"test": "Sticker",

"result": true,

"value": "",

"attachment": "",

"notes": "",

"user": 1,

"date": "2022-04-27T02:11:02.172Z"

}

},

{

"model": "users.ruleset",

"pk": 1,

"fields": {

"name": "admin",

"group": 1,

"can\_view": true,

"can\_add": false,

"can\_change": false,

"can\_delete": false

}

},

{

"model": "plugin.pluginconfig",

"pk": 1,

"fields": {

"key": "simpleactionplugin",

"name": "SimpleActionPlugin",

"active": false

}

},

{

"model": "plugin.notificationusersetting",

"pk": 1,

"fields": {

"key": "NOTIFICATION\_METHOD\_MAIL",

"value": "True",

"method": "mail",

"user": 1

}

}

]