B-TREE

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Estrutura

```java
class Registro<V>{
    private V obj;

    public Registro(V obj) {
        this.obj = obj;
    }

    public V getObjeto() {
        return obj;
    }
}
```

```java
class Item<K extends Comparable<K>, V> {
    private Registro<V> reg;
    private String key;
    private Endereco esq, dir;

    public Item(Registro<V> reg, String key) {
        this.reg = reg;
        this.key = key;
    }

    public int compara(String chave) {
        return this.key.compareTo(chave);
    }
}
```

Objeto

```java
    public Engine(String name, String hp, String
torque, String manufacturer, int numberOfCylinders,
int valvesPerCylinder, String productionYears) {
        this.name = name;
        this.hp = hp;
        this.torque = torque;
        this.manufacturer = manufacturer;
        this.numberOfCylinders = numberOfCylinders;
        this.valvesPerCylinder = valvesPerCylinder;
        this.productionYears = productionYears;
    }
```

```
1ZZ, 120-140, 122-126, Toyota, 4, 4, 1998-2007
2AR, 169-180, 167-173, Toyota, 4, 4, 2008-present
2AZ, 160, 162, Toyota, 4, 4, 2000-present
2JZ,215-325, 209-333, Toyota, 6, 4, 1991-2007
M40B16, 102, 105, BMW, 4, 2, 1987-1994
M40B18, 113, 120, BMW, 4, 2, 1987-1994
```
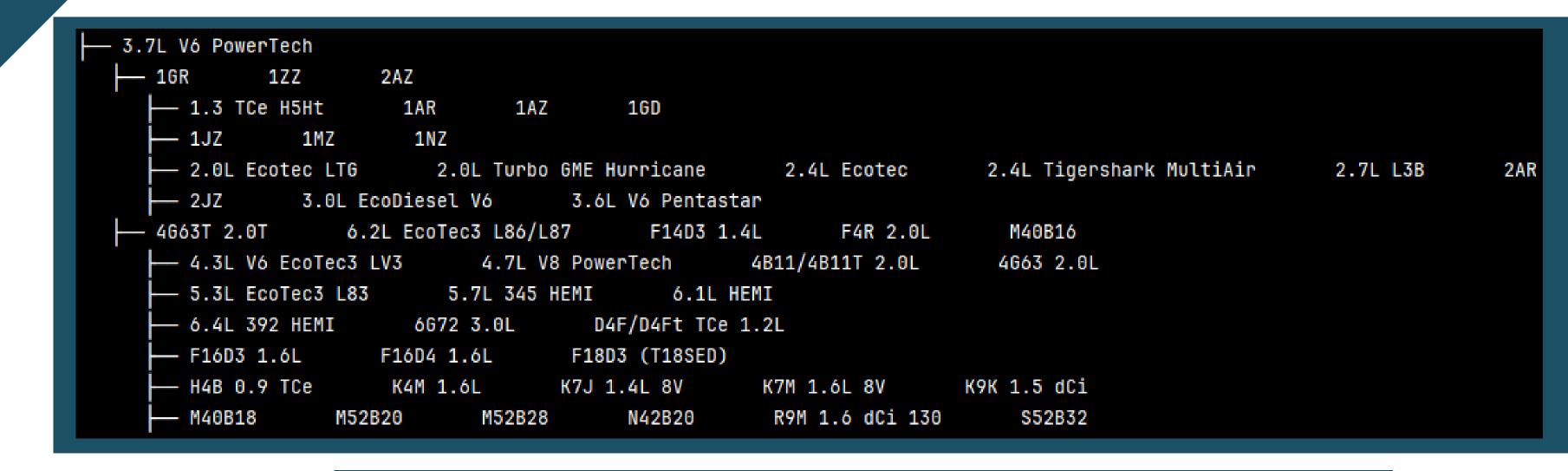
```
├── 3.7L V6 PowerTech
│   ├── 1GR        1ZZ        2AZ
│   │   ├── 1.3 TCe H5Ht         1AR        1AZ        1GD
│   │   ├── 1JZ        1MZ        1NZ
│   │   ├── 2.0L Ecotec LTG       2.0L Turbo GME Hurricane       2.4L Ecotec       2.4L Tigershark MultiAir       2.7L L3B       2AR
│   │   ├── 2JZ        3.0L EcoDiesel V6        3.6L V6 Pentastar
│   ├── 4G63T 2.0T       6.2L EcoTec3 L86/L87       F14D3 1.4L       F4R 2.0L       M40B16
│   │   ├── 4.3L V6 EcoTec3 LV3        4.7L V8 PowerTech       4B11/4B11T 2.0L       4G63 2.0L
│   │   ├── 5.3L EcoTec3 L83        5.7L 345 HEMI       6.1L HEMI
│   │   ├── 6.4L 392 HEMI        6G72 3.0L        D4F/D4Ft TCe 1.2L
│   │   ├── F16D3 1.6L        F16D4 1.6L        F18D3 (T18SED)
│   │   ├── H4B 0.9 TCe        K4M 1.6L        K7J 1.4L 8V        K7M 1.6L 8V        K9K 1.5 dCi
│   │   ├── M40B18        M52B20        M52B28        N42B20        R9M 1.6 dCi 130        S52B32
```

após deletar 1ZZ:

```
├── 3.7L V6 PowerTech
│   ├── 1GR        2.0L Turbo GME Hurricane        2AZ
│   │   ├── 1.3 TCe H5Ht        1AR        1AZ        1GD
│   │   ├── 1JZ        1MZ        1NZ        2.0L Ecotec LTG
│   │   ├── 2.4L Ecotec        2.4L Tigershark MultiAir        2.7L L3B        2AR
│   │   ├── 2JZ        3.0L EcoDiesel V6        3.6L V6 Pentastar
│   ├── 4G63T 2.0T        6.2L EcoTec3 L86/L87        F14D3 1.4L        F4R 2.0L        M40B16
│   │   ├── 4.3L V6 EcoTec3 LV3        4.7L V8 PowerTech        4B11/4B11T 2.0L        4G63 2.0L
│   │   ├── 5.3L EcoTec3 L83        5.7L 345 HEMI        6.1L HEMI
│   │   ├── 6.4L 392 HEMI        6G72 3.0L        D4F/D4Ft TCe 1.2L
│   │   ├── F16D3 1.6L        F16D4 1.6L        F18D3 (T18SED)
│   │   ├── H4B 0.9 TCe        K4M 1.6L        K7J 1.4L 8V        K7M 1.6L 8V        K9K 1.5 dCi
│   │   ├── M40B18        M52B20        M52B28        N42B20        R9M 1.6 dCi 130        S52B32
```

REFERÊNCIA

MOTORREVIEWER. Engine Specifications and Overviews
. Disponível em: <https://www.motorreviewer.com/\>. Acesso em: 14 dez. 2024.