

APPENDIX A

A.1 DOCUMENT: 2.1

Date:

Name:

Educational Qualification:

Organization:

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Domain corpus consisting of various keywords:

| | |
|--------------------------------------|--------------------------|
| Engine | Splendor |
| Brakes | Pulsar (135/150/180/200) |
| Tires | Passion |
| Fuel Tank capacity | Victor |
| Price | R15 |
| Seat type (Split/Single/Step/Normal) | FZ |
| Bullet350 | Harley Davidson |
| Bullet500 | CBR |
| Thunderbird | Ninja |
| Karizma (Normal/ZMR) | |
| Royal Enfield | Harley Davidson |
| Hero Honda | Yamaha |
| Bajaj | Kawasaki |
| TVS | Make |

Zigwheels.com/Bikes:

Swish125

Suzuki

Mountain Bikes

Heromotocorp.com/two-wheeler-motorcycles:

| | |
|-------------------------------|------------------------|
| Impulse | Glamour (Normal/PGMFi) |
| CD-Dawn | Achiever |
| CD-Deluxe | CBZ Xtreme |
| Pleasure | Hunk |
| Splendor (Plus/NXG/Super/Pro) | Hero |
| Passion Pro | |

Bajajauto.com:

| | |
|-------------------|--------------|
| Avenger 220 DTS-i | Discover 125 |
| Pulsar 135 LS | Discover 100 |
| Pulsar 150 DTS-I | Platina 100 |
| Pulsar 180 DTS-I | Ninja 250R |
| Pulsar 220 DTS-I | Ninja 650R |
| Discover 150 | Duke |

Autos.maxabout.com/bikes/ktm/duke/990-super-duke:

| | |
|------------|--------------------|
| Weight | 0-60 |
| Wheel type | Fuel Tank capacity |
| Gears | |

Date:/..../.....

Signature:

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A.2 DOCUMENT: 2.2

Date:

Name:

Educational Qualification:

Organization:

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Domain corpus consisting of various keywords:

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<http://www.royalenfield.com/motorcycles/motor-cycles-landing.aspx>:

| | |
|---------------------------|-----------------------|
| Royal Enfield Classic | Bullet 350 Twinspark |
| Royal Enfield Classic 500 | Bullet Electra EFI |
| Royal Enfield Classic 350 | Bullet Electra Deluxe |
| Thunderbird Twinspark | Bullet 500 |
| Bullet Electra Twinspark | |

<http://www.harley-davidson.in/harley-davidson-india-our-motorcycles.html> :

| | |
|----------------------------|---------------------------------|
| Superlow (560000, 883) | Nightster (1202,110000) |
| Iron883 (883, 660000) | XR1200X(1200,121000) |
| Roadster (883, 765000) | StreetBob(1010000,1585) |
| Forty-Eight (1202,8,65000) | SuperglideCustom (1165000,1585) |

Comments (if any):

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A.3 DOCUMENT: 2.3

Date:

Name:

Educational Qualification:

Organization:

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Domain corpus consisting of various keywords:

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<http://www.yamaha-motor-india.com/product/index.html>

+<http://www.priceindia.in/bike/yamaha-bike-price-list/>:

| | |
|----------------------------|-----------------------------|
| VMAX (1679, 2000000, Disk) | SZR (153,55000) |
| YZF R1 (998, 1050000,disk) | SZX (153,52000) |
| FZ1 (998,870000,disk) | YBR(125, 47000,drum) |
| YZF R15 (150, 105000,disk) | YBR110(110, 42000, drum, 4) |
| Fazer (153, 72000, combo) | |

<http://www.tvsmotor.in/index.asp#>

+ **<http://www.tvsapache.in/apache-rtr-160-specifications.html>**:

Apache RTR 160 (161, , combo, 5)

Flame SR 125 (124.8, , Drum, 4)

Apache RTR 180 (177, , Disk, 5)

Star City (110, , Drum, 4)

TVS Flame DS 125(124.8, , , 4)

Scooty Streak (87.8, , Drum, 0)

Comments (if any):

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Date: / /

Signature:
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A.4 DOCUMENT: 2.4

Date:

Name:

Educational Qualification:

Organization:

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Domain corpus consisting of various keywords:

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<http://www.bmwmotorcycles.com/us/en/index.html>:

Category-Enduro:

G 650 GS Sertão (8650 USD, 652cc, disk, 5, Wire spoke wheels)

F 800GS (12355USD, 798, Disc, Wike spoke wheel)

R1200 GS (18350 USD,1170cc, Disc, Cross-spoke wheels)

Category-Roadster:

F 800R (10840USD, 798, Disc, Cast Aluminum Wheels)

R1200 R (13880, 1170., Disc, Cast Aluminum wheels)

COMBINED DOMAIN VOCABULARY & QUESTIONS
(AFTER REDUNDANCY REMOVAL)

1. Combining domain keywords & competency questions as identified by FAST participants:

Engine--cubic centimeter (cc)--Engine capacity→ **Engine Capacity**

Power→**Power**

Make--Make--make→**Make**

Mileage--Mileage--Mileage--Average→**Mileage**

Brakes-Brakes→**Brakes**

Tires→**Tires**

Fuel Tank capacity-- Fuel Tank capacity--Tank Capacity→**Fuel Tank Capacity**

Price--Price→**Price**

Ignition (Kick/Self)→ **Ignition (Kick/Self)**

Seat type (Split/Single/Step/Normal)→ **Seat type (Split/Single/Step/Normal)**

Weight→ **Weight**

Wheel type--Wheel type (Alloy/Wirespoke)→ **Wheel type (Alloy/Wirespoke)**

Gears→**Weight**

0-60→**(0-60)**

Looks→**Looks**

Ground clearance→ **Ground clearance**

Tire size→ **Tire size**

Tire Width→ **Tire Width**

Visor--Head Lamps→ **Visor**

Warranty (upto kms?)→ **Warranty (upto kms?)**

Maintenance→ **Maintenance**

Free Service→ **Free Service**

Suspension→ **Suspension**

Hero Honda--Hero Honda--Hero Honda→ **Hero Honda**

Hero--Hero→ **Hero**

Bajaj--Bajaj→ **Bajaj**

Kawasaki→ **Kawasaki**

Royal Enfield--Royal Enfield→ **Royal Enfield**

Yamaha--Yamaha→ **Yamaha**

TVS→ **TVS**

Harley Davidson→ **Harley Davidson**

Suzuki→ **Suzuki**

Karizma (Normal/ZMR)--ZMR→ **Karizma (Normal/ZMR)**

Splendor-- Splendor (Plus/NXG/Super/Pro)--Splendor→ **Splendor (Plus/NXG/Super/Pro)**

Passion-- Passion Pro--Passion Pro→ **Passion/Paasion Pro**

CD-Dawn→ **CD-Dawn**

CD-Deluxe→ **CD-Deluxe**

Pleasure→ **Pleasure**

Glamour (Normal/PGMFi)→ **Glamour (Normal/PGMFi)**

Achiever→ **Achiever**

CBZ Xtreme→ **CBZ Xtreme**

Hunk→ **Hunk**

Impulse → **Impulse**

CT100→ **CT100**

Pulsar (135/150/180/200)-- Pulsar 135 LS/Pulsar 150 DTS-i/Pulsar 180 DTS-i/Pulsar 220 DTS-i--Pulsar→ **Pulsar 135 LS/Pulsar 150 DTS-i/Pulsar 180 DTS-i/Pulsar 220 DTS-i**

Avenger 220 DTS-i→ **Avenger 220 DTS-i**

Discover 150/Discover 125/Discover 100→ **Discover 150/Discover 125/Discover 100**

Platina 100→ **Platina 100**

Duke→ **Duke**

Ninja--Ninja 250R/Ninja 650R→ **Ninja 250R/Ninja 650R**

Swish125→ **Swish125**

Bullet350/Bullet500--Bullet-- Bullet Electra Twinspark/Bullet 350 Twinspark /Bullet Electra EFI/Bullet Electra Deluxe /Bullet 500→ **Bullet Electra Twinspark/Bullet 350 Twinspark /Bullet Electra EFI/Bullet Electra Deluxe /Bullet 500**

Royal Enfield Classic/Royal Enfield Classic 500/Royal Enfield Classic 350→ **Royal Enfield Classic/Royal Enfield Classic 500/Royal Enfield Classic 350**

Thunderbird-- Thunderbird Twinspark → **Thunderbird Twinspark**

R15→ **R15**

FZ→**FZ**

CBR→ **CBR**

Victor→ **Victor**

Superlow (560000, 883)→ **Superlow (560000, 883)**

Iron883 (883, 660000)→ **Iron883 (883, 660000)**

Roadster (883, 765000)→ **Roadster (883, 765000)**

Forty-Eight (1202,8,65000)→ **Forty-Eight (1202,8,65000)**

Nightster (1202,110000)→ **Nightster (1202,110000)**

XR1200X(1200,121000)→ **XR1200X(1200,121000)**

StreetBob(1010000,1585)→ **StreetBob(1010000,1585)**

SuperglideCustom (1165000,1585)→ **SuperglideCustom (1165000,1585)**

Mountain Bikes→ **Mountain Bikes**

Dipper→**Dipper**

Model→ **Model**

Affordable→ **Affordable**

Light Weight→ **Light Weight**

Looks→ **Looks**

Competency questions:

- Average of bike >50 ?
- Price ≤ 1.25 lakhs?
- Engine capacity ≥ 150 ?
- Price ≤ 1.25 lakhs and engine capacity ≥ 150 ?
- Average of some particular model?
- CC of some particular model?
- CC ≥ 150 and mileage ≥ 60 and make should be either Hero Honda or Yamaha, should have alloy wheels with disk brakes. Price range [Rs. 50000, Rs. 100000]
- More than 200cc, mileage more than atleast 30km/ltr, Hero Honda or Royal Enfield, both disk brakes, top speed more than 130 kmph, cost under 1.2lakh, wide rear tyre, riding comfort.
- Average ≥ 40 & price should be between Rs. 50000 & Rs. 60000, and engine capacity should be ≥ 125
- Price of some particular model like Apache 160?

2. Combined domain vocabulary & competency questions:

Engine Capacity

Power

Make

Mileage

Brakes

Tires

Fuel Tank Capacity

Price

Ignition (Kick/Self)

Seat type (Split/Single/Step/Normal)

Weight

Wheel type (Alloy/Wire)

Weight

(0-60)

Looks

Ground clearance

Tire size

Tire Width

Visor

Warranty (upto kms?)

Maintenance

Free Service

Suspension

Hero Honda

Hero

Bajaj

Kawasaki

Royal Enfield

Yamaha

TVS

Harley Davidson

Suzuki

Karizma (Normal/ZMR)

Splendor (Plus/NXG/Super/Pro)

Passion/Paasion Pro

CD-Dawn

CD-Deluxe

Pleasure

Glamour (Normal/PGMFi)

Achiever

CBZ Xtreme

Hunk

Impulse

CT100

Pulsar 135 LS/Pulsar 150 DTS-i/Pulsar 180 DTS-i/Pulsar 220 DTS-i

Avenger 220 DTS-i

Discover 150/Discover 125/Discover 100

Platina 100

Duke

Ninja 250R/Ninja 650R

Swish125

Bullet Electra Twinspark/Bullet 350 Twinspark /Bullet Electra EFI/Bullet Electra Deluxe /Bullet
500

Royal Enfield Classic/Royal Enfield Classic 500/Royal Enfield Classic 350

Thunderbird Twinspark

R15

FZ

CBR

Victor

Superlow (560000, 883)

Iron883 (883, 660000)
Roadster (883, 765000)
Forty-Eight (1202,8,65000)
Nightster (1202,110000)
XR1200X(1200,121000)
StreetBob(1010000,1585)
SuperglideCustom (1165000,1585)
Mountain Bikes
Dipper
Model
Affordable
Light Weight
Looks

Competency questions:

- Average of bike >50 ?
- Price ≤ 1.25 lakhs?
- Engine capacity ≥ 150 ?
- Price ≤ 1.25 lakhs and engine capacity ≥ 150 ?
- Average of some particular model?
- CC of some particular model?
- CC ≥ 150 and mileage ≥ 60 and make should be either Hero Honda or Yamaha, should have alloy wheels with disk brakes. Price range [Rs. 50000, Rs. 100000]
- More than 200cc, mileage more than atleast 30km/ltr, Hero Honda or Royal Enfield, both disk brakes, top speed more than 130 kmph, cost under 1.2lakh, wide rear tyre, riding comfort.
- Average ≥ 40 & price should be between Rs. 50000 & Rs. 60000, and engine capacity should be ≥ 125
- Price of some particular model like Apache 160?

A.6 DOCUMENT: 4

Date:

FINAL DOMAIN VOCABULARY & QUESTIONS ALONG WITH ISSUES

ENCOUNTERED DURING FAST SESSION

(WITH ADDITIONS/DELETIONS DONE DURING DISCUSSION)

Domain Vocabulary after discussion:

Engine Capacity

Power

Make

Mileage

Brakes (Disk/Drum)

Tires

Fuel Tank Capacity

Price

Ignition (Kick/Self)

Seat type (Split/Single/Step/Normal)

Weight

Wheel type (Alloy/Wirespoke)

Weight

Gears

(0-60)

Looks

Ground clearance

Tire size

Tire Width

Visor

Warranty (upto kms?)

Maintenance

Free Service

Suspension

Hero Honda

Hero
Bajaj
Kawasaki
Royal Enfield
Yamaha
TVS
Harley Davidson
Suzuki
Karizma (Normal/ZMR)
Splendor (Plus/NXG/Super/Pro)
~~Passion~~/Paasion Pro
CD-Dawn
CD-Deluxe
~~Pleasure~~
Glamour (Normal/PGMFi)
Achiever
CBZ Xtreme
Hunk
Impulse
CT100
Pulsar 135 LS/Pulsar 150 DTS-i/Pulsar 180 DTS-i/Pulsar 200 DTS-i/Pulsar 220 DTS-i
Avenger 220 DTS-i
Discover 135/Discover 125/Discover 100
Platina 100
XCD
Duke→**Duke200**
Ninja 250R/Ninja 650R
~~Swish125~~
Bullet Electra Twinspark/Bullet 350 Twinspark /Bullet Electra EFI/Bullet Electra Deluxe
Royal Enfield Classic 500/Royal Enfield Classic 350
Thunderbird Twinspark

R15

FZ

CBR

Victor

Superlow (560000, 883)

Iron883 (883, 660000)

Roadster (883, 765000)

Forty-Eight (1202,8,65000)

Nightster (1202,110000)

XR1200X(1200,121000)

StreetBob(1010000,1585)

SuperglideCustom (1165000,1585)

Mountain Bikes

Dipper

Model

Affordable

Light Weight

Looks

Competency questions:

- Average of bike >50?
- Price <=1.25 lakhs?
- Engine capacity >=150?
- Price <=1.25 lakhs and engine capacity >=150?
- Average of some particular model?
- CC of some particular model?
- CC >=150 and mileage >=60 and make should be either Hero Honda or Yamaha, should have alloy wheels with disk brakes. Price range [Rs. 50000, Rs. 100000]
- More than 200cc, mileage more than atleast 30km/ltr, Hero Honda or Royal Enfield, both disk brakes, top speed more than 130 kmph, cost under 1.2lakh, wide rear tyre, riding comfort.
- Average >=40 & price should be between Rs. 50000 & Rs. 60000, and engine capacity should be >=125
- Price of some particular model like Apache 160?

Issues encountered:

1. The values of properties such as Engine capacity, brakes, Wheel type etc. are not listed above for different types of bikes.
2. Whether to include bikes that are being imported then being sold in India?

A.7 DOCUMENT: 5

Date:

DOMAIN VOCABULARY AFTER REVIEW
(Completeness Testing + Removal of Semantic heterogeneities)
ALONGWITH SOLUTIONS TO ISSUES

Final Domain Vocabulary:

Engine Capacity
Power
Make
Mileage
Brakes (Disk/Drum)
Fuel Tank Capacity
Price
Ignition (Kick/Self)
Seat type (Split/Single/Step/Normal)
Weight
Wheel type (Alloy/Wirespoke)
Weight
Gears
(0-60)
Looks
Ground clearance
Tire size
Tire Width
Visor
Warranty (upto kms?)
Maintenance
Free Service
Suspension

Hero Honda

Hero

Bajaj

Kawasaki

Royal Enfield

Yamaha

TVS

Harley Davidson

Suzuki

Karizma (Normal) → 223cc, 17bhp @7000 rpm, Rs. 74000, 15ltr., 40km/ltr, Combo,
150kg, Alloy, self, 5

Karizma (ZMR) → 223cc, 17.6bhp @ 7000rpm, Rs.120000 ,16 ltr., 40km/ltr, Disk,
159kg, Alloy, Self, 5

Splendor (Plus) → 97.2cc, 7.5bhp @ 8000rpm, Rs. 45000, 10.5ltr., 75km/ltr, Drum,
109kg, WireSpoke, Kick, 4

Splendor (NXG) → 97.2cc, 7.7bhp @ 7500rpm, Rs.48000 , 10.3ltr., 65km/ltr, Drum,
107kg, Alloy, Kick, 4

Splendor (Super) → 125cc, 9bhp @ 7000rpm, Rs.47000 ,12 ltr., 70km/ltr, Drum, 121kg,
Alloy, Self, 4

Splendor (Pro) → 97.2 cc, 7.6bhp @ 7500rpm, Rs.55000 , 11ltr., 80km/ltr, Drum, 109kg,
Alloy, Self, 4

Paasion Pro → 97.2cc, 7.6bhp @ 7500rpm, Rs.53000 , 12.8ltr., 75km/ltr, Combo, 119kg,
Alloy, Self, 4

CD-Dawn → 97.2cc, 7.7bhp @ 7500rpm, Rs.37000 , 10.5ltr., 75km/ltr, Drum, 107kg,
Wire Spoke, Kick, 4

CD-Deluxe → 97.2cc, 7.7bhp @ 7500rpm, Rs.43000 , 10.5ltr., 75km/ltr, Drum, 107kg,
Alloy, Kick, 4

Glamour (Normal) → 125cc, 9bhp @ 7000rpm, Rs.55000 ,13.6 ltr., 60km/ltr, Combo,
125kg, Alloy, Self, 4

Glamour (PGMFi) → 125cc, 9bhp @ 7000rpm, Rs.58500 ,12 ltr., 70km/ltr, Combo,
125kg, Alloy, Self, 4

Achiever → 150cc, 13.4bhp @ 8000rpm, Rs.60000 ,12.5 ltr., 55km/ltr, Combo, 134kg,
Alloy, Self, 5

CBZ Xtreme → 150cc, 14.4bhp @ 8500rpm, Rs. 65000, 12.3ltr., 50km/ltr, Combo,
141kg, Alloy, Self, 5

Hunk → 150cc, 14.2bhp @ 8500rpm, Rs. 63000 , 12.2ltr., 50km/ltr, Disk, 145kg, Alloy,
Self, 5

Impulse → 150cc, 13bhp @ 7500rpm, Rs.79000 , 11ltr., 55km/ltr, Combo, 119kg, Alloy,
Self, 5

CT100 → 100cc, 8.2bhp @ 7500rpm, Rs. 32000, 10.5ltr., 80km/ltr, Drum, 109kg,
Wire Spoke, Kick, 4

Pulsar 135 LS → 135cc, 13.1bhp @ 8500rpm, Rs.55000, 10ltr., 60km/ltr, Combo, 125kg,
Alloy, Self, 4

Pulsar 150 DTS-i → 150cc, 14.09bhp @ 8500rpm, Rs. 63000, 15ltr., 48km/ltr, Combo,
130kg, Alloy, Self, 5

Pulsar 180 DTS-i → 180cc, 16.5bhp @ 8000rpm, Rs. 67000, 15ltr., 55km/ltr, Combo,
140kg, Alloy, Self, 5

Pulsar 200 DTS-i → 200cc, 18bhp @ 8000rpm, Rs. 70000, 15ltr., 40km/ltr, Disk, 145kg,
Alloy, Self, 5

Pulsar 220 DTS-i → 220cc, 20bhp @ 8500rpm, Rs. 90000, 15ltr., 35km/ltr, Disk, 150kg,
Alloy, Self, 5

Avenger 220 DTS-i → 220 cc, 16.5bhp @ 8000rpm, Rs. 75000, 14ltr., 40km/ltr, Combo,
152kg, Alloy, Self, 5

Discover 135 → 135cc, 13.1bhp @ 8500rpm, Rs. 55000, 10ltr., 60km/ltr, Combo, 125kg,
Alloy, Self, 4

Discover 125 → 125cc, 11bhp @ 8000rpm, Rs. 52000, 8ltr., 85km/ltr, Drum, 125kg,
Alloy, Self, 4

Discover 100 → 100cc, 7.5bhp @ 7500rpm, Rs. 44500, 10.3ltr., 91km/ltr, Drum, 115kg,
Alloy, Self, 4

Platina 100 → 99.27cc, 8.2bhp @ 7500rpm, Rs. 35500, 13ltr., 108km/ltr, Drum, 113kg,
Alloy, Kick, 4

XCD → 125cc, 7.01bhp @ 7000rpm, Rs. 46000, 13ltr., 109km/ltr, Drum, 115kg, Alloy,
Self, 4

Duke200 → 200cc, 25bhp @ 10000rpm, Rs. 130000, 10.5ltr., 35km/ltr, Disk, 136kg,
Alloy, Self, 6

Ninja 250R

Ninja 650R

Bullet Electra Twinspark → 350 cc, 19.8bhp @ 5250rpm, Rs. 111000, 13.5ltr., 40km/ltr,
Combo, 183kg, Wire Spoke, Self, 5

Bullet Electra EFI → 500cc, 27.2bhp @ 5250rpm, Rs. 125000, 14.5ltr., 40km/ltr,
Combo, 185kg, Wire Spoke, Self, 5

Bullet Electra Deluxe → 500 cc, 27.2bhp @ 5250rpm, Rs. 140000, 14.5ltr., 45km/ltr,
Combo, 187kg, Wire Spoke, Self, 5

Bullet 350 Twinspark → 350cc, 19.8bhp @ 5250rpm, Rs. 100000, 13.5ltr., 45km/ltr,
Combo, 180kg, Wire Spoke, Self, 5

Royal Enfield Classic 500 → 500cc, 27.2bhp @ 5250rpm, Rs. 155000, 13.5ltr., 35km/ltr,
Combo, 187 kg, Wire Spoke, Self, 5

Royal Enfield Classic 350 → 350cc, 19.8bhp @ 5250rpm, Rs. 117000, 13.5ltr., 45km/ltr,
Combo, 182kg, Wire Spoke, Self, 5

Thunderbird Twinspark → 350cc, 19.8bhp @ 5250rpm, Rs. 116300, 15.5ltr., 45km/ltr,
Combo, 182kg, Wire Spoke, Self, 5

R15 → 150cc, 16.8bhp @ 8500rpm, Rs. 119000, 12ltr., 45km/ltr, Disk, 136kg, Alloy,
Self, 6

FZ → 153cc, 14bhp @ 7500rpm, Rs. 74900, 12ltr., 50km/ltr, Combo, 135kg, Alloy,
Self, 5

Victor → 110cc, 8.1bhp @ 7250rpm, Rs. 50000, 11ltr., 85km/ltr, Drum, 113kg,
Wire Spoke, Kick, 4

CBR → 250cc, 26.4bhp @ 8500rpm, Rs. 160000, 13ltr., 30km/ltr, Disk, 165kg, Alloy,
Self, 6

Shine → 125cc, 10.3bhp @ 7500rpm, Rs. 53500, 11ltr., 60km/ltr, Drum, 122kg, Alloy,
Self, 4

Unicorn → 150cc, 62000bhp @ 8000rpm, Rs. 62000, 13ltr., 60km/ltr, Combo, 165kg,
Alloy, Self, 5

Superlow (560000, 883)

Iron883 (883, 660000)

Roadster (883, 765000)

Forty-Eight (1202,8,65000)

Nightster (1202,110000)

XR1200X(1200,121000)

StreetBob(1010000,1585)

SuperglideCustom (1165000,1585)

Mountain Bikes

Dipper

Model

Affordable

Light Weight

Looks

Competency questions:

- Mileage of bike >50 ?
- Price ≤ 1.25 lakhs?
- Engine capacity ≥ 150 ?
- Price ≤ 1.25 lakhs and engine capacity ≥ 150 ?
- Mileage of some particular model?
- Engine capacity of some particular model?
- Engine capacity ≥ 150 and mileage ≥ 60 and make should be either Hero Honda or Yamaha, should have alloy wheels with disk brakes. Price range [Rs. 50000, Rs. 100000]
- More than 200cc, mileage more than atleast 30km/ltr, Hero Honda or Royal Enfield, both disk brakes, cost under 1.2lakh.
- Average ≥ 40 & price should be between Rs. 50000 & Rs. 60000, and engine capacity should be ≥ 125 .
- Price of some particular model like Duke 200?

Issues encountered:

1. The values of properties such as Engine capacity, brakes, Wheel type etc. are not listed above for different types of bikes.

Ans.: The values for following parameters were included in domain vocabulary:

- Make
- Engine capacity
- Power
- Price
- Fuel tank capacity
- Mileage
- Brake type
- Weight
- Wheel type
- Ignition
- Number of gears

2. Whether to include bikes that are being imported then being sold in India?

Ans.: No

VALIDATED VERSION OF DOCUMENT 6

1. Domain Vocabulary:

Engine Capacity

Power

Make

Mileage

Brakes (Disk/Drum)

Fuel Tank Capacity

Price

Ignition (KickStart/SelfStart)

Seat type (Split/Single/Step/Normal)

Weight

Wheel type (Alloy/Wirespoke)

Weight

Gears

Hero Honda

Hero

Bajaj

Royal Enfield

Yamaha

TVS

Suzuki

Karizma (Normal) → 223cc, 17bhp @7000 rpm, Rs. 74000, 15ltr., 40km/ltr, Combo, 150kg,
Alloy, self, 5

Karizma (ZMR) → 223cc, 17.6bhp @ 7000rpm, Rs.120000 ,16 ltr., 40km/ltr, Disk, 159kg,
Alloy, Self, 5

Splendor (Plus) → 97.2cc, 7.5bhp @ 8000rpm, Rs. 45000, 10.5ltr., 75km/ltr, Drum, 109kg,

WireSpoke, Kick, 4

Splendor (NXG) → 97.2cc, 7.7bhp @ 7500rpm, Rs.48000 , 10.3ltr., 65km/ltr, Drum, 107kg,

Alloy, Kick, 4

Splendor (Super) → 125cc, 9bhp @ 7000rpm, Rs.47000 ,12 ltr., 70km/ltr, Drum, 121kg,

Alloy, Self, 4

Splendor (Pro)→97.2 cc, 7.6bhp @ 7500rpm, Rs.55000 , 11ltr., 80km/ltr, Drum, 109kg, Alloy,

Self, 4

Paasion Pro → 97.2cc, 7.6bhp @ 7500rpm, Rs.53000 , 12.8ltr., 75km/ltr, Combo, 119kg,

Alloy, Self, 4

CD-Dawn → 97.2cc, 7.7bhp @ 7500rpm, Rs.37000 , 10.5ltr., 75km/ltr, Drum, 107kg,

Wire Spoke, Kick, 4

CD-Deluxe → 97.2cc, 7.7bhp @ 7500rpm, Rs.43000 , 10.5ltr., 75km/ltr, Drum, 107kg,

Alloy, Kick, 4

Glamour (Normal) → 125cc, 9bhp @ 7000rpm, Rs.55000 ,13.6 ltr., 60km/ltr, Combo, 125kg,

Alloy, Self, 4

Glamour (PGMFi) → 125cc, 9bhp @ 7000rpm, Rs.58500 ,12 ltr., 70km/ltr, Combo, 125kg,

Alloy, Self, 4

Achiever → 150cc, 13.4bhp @ 8000rpm, Rs.60000 ,12.5 ltr., 55km/ltr, Combo, 134kg, Alloy,

Self, 5

CBZ Xtreme → 150cc, 14.4bhp @ 8500rpm, Rs. 65000, 12.3ltr., 50km/ltr, Combo, 141kg,

Alloy, Self, 5

Hunk→ 150cc, 14.2bhp @ 8500rpm, Rs. 63000 , 12.2ltr., 50km/ltr, Disk, 145kg, Alloy,

Self, 5

Impulse→ 150cc, 13bhp @ 7500rpm, Rs.79000 , 11ltr., 55km/ltr, Combo, 119kg, Alloy,

Self, 5

CT100 → 100cc, 8.2bhp @ 7500rpm, Rs. 32000, 10.5ltr., 80km/ltr, Drum, 109kg, Wire Spoke,

Kick, 4

Pulsar 135 LS → 135cc, 13.3bhp @ 9000rpm, Rs. 57000, 8ltr., 68km/ltr, Combo, 122kg,

Alloy, Self, 5

- Pulsar 150 DTS-i → 150cc, 14.09bhp @ 8500rpm, Rs. 63000, 15ltr., 48km/ltr, Combo, 130kg,
Alloy, Self, 5
- Pulsar 180 DTS-i → 180cc, 16.5bhp @ 8000rpm, Rs. 67000, 15ltr., 55km/ltr, Combo, 140kg,
Alloy, Self, 5
- Pulsar 200 DTS-i → 200cc, 18bhp @ 8000rpm, Rs. 70000, 15ltr., 40km/ltr, Disk, 145kg, Alloy,
Self, 5
- Pulsar 220 DTS-i → 220cc, 20bhp @ 8500rpm, Rs. 90000, 15ltr., 35km/ltr, Disk, 150kg,
Alloy, Self, 5
- Avenger 220 DTS-i → 220 cc, 16.5bhp @ 8000rpm, Rs. 75000, 14ltr., 40km/ltr, Combo, 152kg,
Alloy, Self, 5
- Discover 135 → 135cc, 13.1bhp @ 8500rpm, Rs. 55000, 10ltr., 60km/ltr, Combo, 125kg, Alloy,
Self, 4
- Discover 125 → 125cc, 11bhp @ 8000rpm, Rs. 52000, 8ltr., 85km/ltr, Drum, 125kg, Alloy,
Self, 4
- Discover 100 → 100cc, 7.5bhp @ 7500rpm, Rs. 44500, 10.3ltr., 91km/ltr, Drum, 115kg,
Alloy, Self, 4
- Platina 100 → 99.27cc, 8.2bhp @ 7500rpm, Rs. 35500, 13ltr., 108km/ltr, Drum, 113kg, Alloy,
Kick, 4
- XCD → 125cc, 7.01bhp @ 7000rpm, Rs. 46000, 13ltr., 109km/ltr, Drum, 115kg, Alloy, Self, 4
- Duke200 → 200cc, 25bhp @ 10000rpm, Rs. 130000, 10.5ltr., 35km/ltr, Disk, 136kg, Alloy,
Self, 6
- Bullet Electra Twinspark → 350 cc, 19.8bhp @ 5250rpm, Rs. 111000, 13.5ltr., 40km/ltr,
Combo, 183kg, Wire Spoke, Self, 5
- Bullet Electra EFI → 500cc, 27.2bhp @ 5250rpm, Rs. 125000, 14.5ltr., 40km/ltr, Combo,
185kg, Wire Spoke, Self, 5
- Bullet Electra Deluxe → 500 cc, 27.2bhp @ 5250rpm, Rs. 140000, 14.5ltr., 45km/ltr, Combo,
187kg, Wire Spoke, Self, 5
- Bullet 350 Twinspark → 350cc, 19.8bhp @ 5250rpm, Rs. 100000, 13.5ltr., 45km/ltr, Combo,
180kg, Wire Spoke, Self, 5

Royal Enfield Classic 500 → 500cc, 27.2bhp @ 5250rpm, Rs. 155000, 13.5ltr., 35km/ltr,
Combo, 187 kg, Wire Spoke, Self, 5

Royal Enfield Classic 350 → 350cc, 19.8bhp @ 5250rpm, Rs. 117000, 13.5ltr., 45km/ltr,
Combo, 182kg, Wire Spoke, Self, 5

Thunderbird Twinspark → 350cc, 19.8bhp @ 5250rpm, Rs. 116300, 15.5ltr., 45km/ltr, Combo,
182kg, Wire Spoke, Self, 5

R15 → 150cc, 16.8bhp @ 8500rpm, Rs. 119000, 12ltr., 45km/ltr, Disk, 136kg, Alloy,
Self, 6

FZ → 153cc, 14bhp @ 7500rpm, Rs. 74900, 12ltr., 50km/ltr, Combo, 135kg, Alloy, Self, 5

Victor → 110cc, 8.1bhp @ 7250rpm, Rs. 50000, 11ltr., 85km/ltr, Drum, 113kg, Wire Spoke,
Kick, 4

CBR → 250cc, 26.4bhp @ 8500rpm, Rs. 160000, 13ltr., 30km/ltr, Disk, 165kg, Alloy,
Self, 6

Shine → 125cc, 10.3bhp @ 7500rpm, Rs. 53500, 11ltr., 60km/ltr, Drum, 122kg, Alloy,
Self, 4

Unicorn → 150cc, 62000bhp @ 8000rpm, Rs. 62000, 13ltr., 60km/ltr, Combo, 165kg, Alloy,
Self, 5

Step 2: Identified Classes, sub-classes & individuals:

Root class → *Thing*

Sub-class of *Thing* → *Bikes*

Subclasses of *Bikes* →

| | |
|-------------------------|------------------|
| <i>Make</i> | <i>Brakes</i> |
| <i>EngineCapacity</i> | <i>Weight</i> |
| <i>Power</i> | <i>WheelType</i> |
| <i>Price</i> | <i>Ignition</i> |
| <i>FuelTankCapacity</i> | <i>Gears</i> |
| <i>Mileage</i> | |

NamedBikes (It is supposed to be merely a container class.)

Subclasses of *Make* → *Hero Honda, Hero, Bajaj, Royal Enfield, Yamaha, TVS* and *Honda*

Subclasses of *Brakes* → *Combo, DiskBrakes, DrumBrakes*

Subclasses of *WheelType* → *Alloy, Wirespoke*

Subclasses of *Ignition* → *KickStart, SelfStart*

Subclasses of *Gears* → *4, 5, 6*

Subclasses of *NamedBikes* →

| | |
|--------------------------|--------------------|
| <i>HeroHondaBikes</i> | <i>YamahaBikes</i> |
| <i>HeroBikes</i> | <i>TVSBikes</i> |
| <i>BajajBikes</i> | <i>HondaBikes</i> |
| <i>RoyalEnfieldBikes</i> | |

Subclasses of *HeroHondaBikes* →

Karizma (Normal) Model:

◇ Karizma (Normal)

Karizma (ZMR) Model:

◇ Karizma (ZMR)

Splendor (Plus) Model:

◇ Splendor (Plus)

Splendor (NXG) Model:

◇ Splendor (NXG)

Splendor (Super) Model:

◇ Splendor (Super)

Splendor (Pro) Model:

◇ Splendor (Pro)

Passion Pro Model:

◇ Passion Pro

CD-Dawn Model:

◇ CD-Dawn

CD-Deluxe Model:

◇ CD-Deluxe

Glamour (Normal) Model:

◇ Glamour (Normal)

Glamour (PGMFi) Model:

◇ Glamour (PGMFi)

Achiever Model:

◇ Achiever

CBZ Xtreme Model:

◇ CBZ Xtreme

Hunk Model:

◇ Hunk

Subclasses of *HeroBikes* → *Impulse Model:* ◇ Impulse

Subclasses of *BajajBikes* →

CT100 Model: ◇ CT100

Pulsar 135 LS Model:

◇ Pulsar 135 LS

Pulsar 150 DTS-i Model:

◇ Pulsar 150 DTS-i

Pulsar 180 DTS-i Model:

◇ Pulsar 180 DTS-i

Pulsar 220 DTS-i Model:

◇ Pulsar 220 DTS-i

Avenger 220 DTS-i Model:

◇ Avenger 220 DTS-i

Discover 135 Model:

◇ Discover 135

Discover 125 Model:

◇ Discover 125

Discover 100 Model:

◇ Discover 100

Platina 100 Model:

◇ Platina 100

Duke200 Model:

◇ Duke200

Subclasses of *RoyalEnfieldBikes* →

Bullet Electra Twinspark Model:

◇ Bullet Electra Twinspark

Bullet 350 Twinspark Model:

◇ Bullet 350 Twinspark

Bullet Electra EFI Model:

◇ Bullet Electra EFI

Bullet Electra Deluxe Model:

◇ Bullet Electra Deluxe

Royal Enfield Classic 500 Model:

◇ Royal Enfield Classic 500

Royal Enfield Classic 350 Model:

◇ Royal Enfield Classic 350

Thunderbird Twinspark Model:

◇ Thunderbird Twinspark

Subclasses of *YamahaBikes* →

R15 Model: ◇ R15

FZ Model: ◇ FZ

Subclasses of *TVSBikes* →

Victor Model: ◇ Victor

Subclasses of *HondaBikes* →

CBR Model: ◇ CBR

Shine Model: ◇ Shine

Unicorn Model: ◇ Unicorn

Step 3.1: Identified Properties:

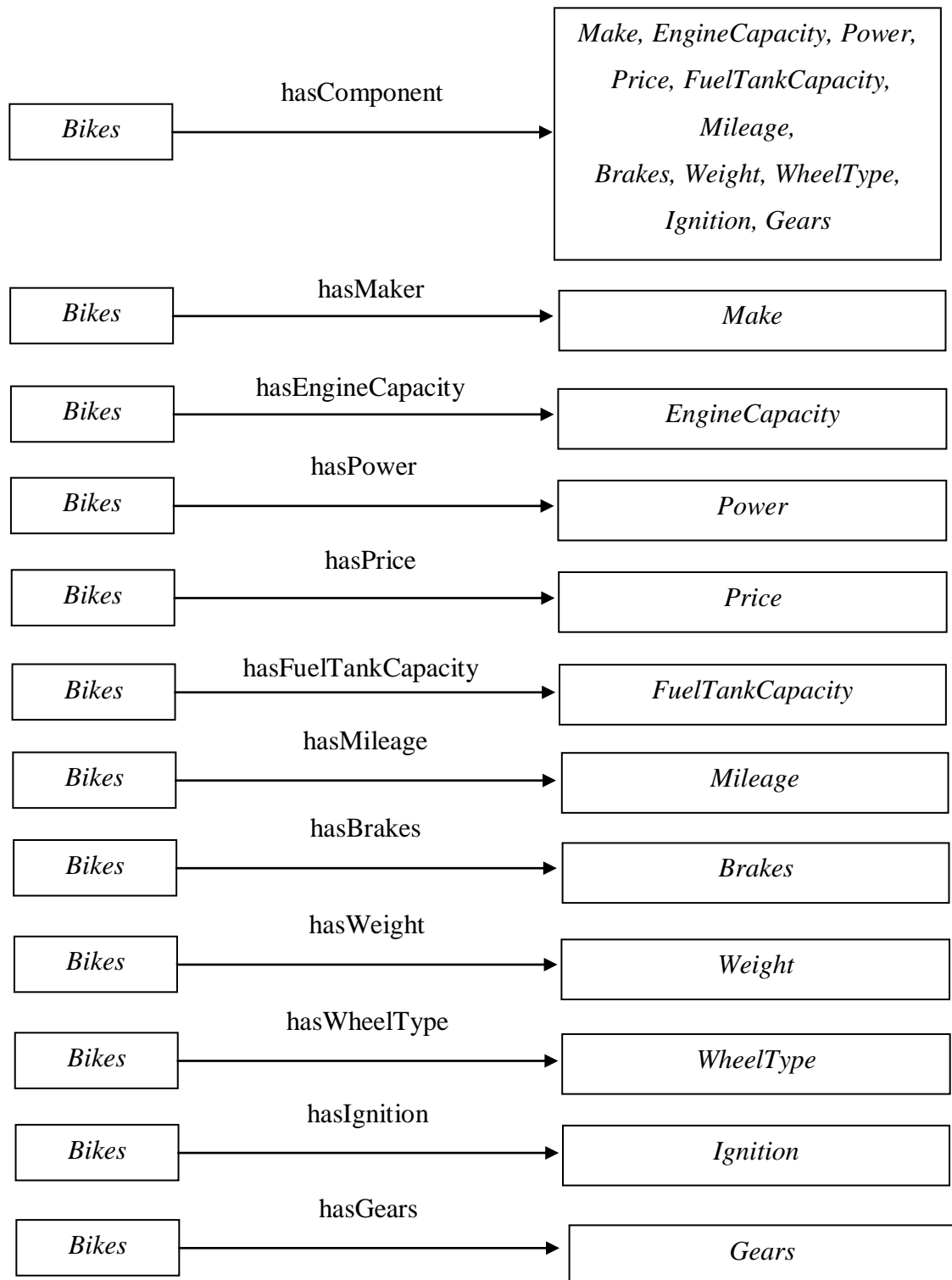
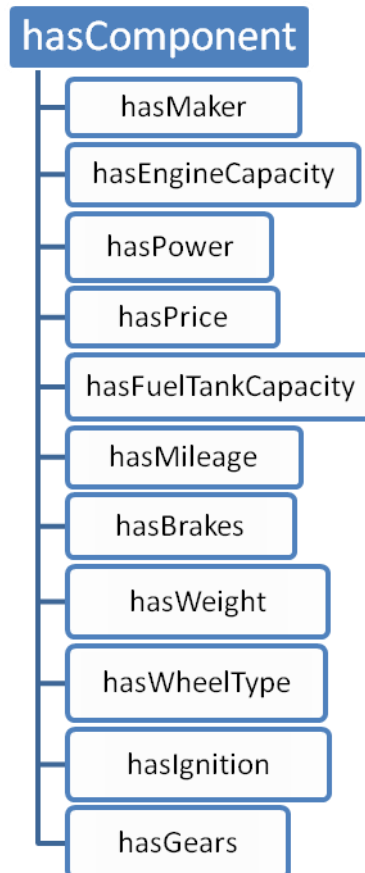


Fig. 36: Identified-properties

Thus property hierarchy is:

Fig. 37: Identified-property hierarchy



Step 3.2: Domains and Ranges of properties:

Table 6: Domain & Ranges of identified properties

| Name | Domain | Range |
|---------------------|---------------|--------------|
| hasMaker | Bikes | Make |
| hasEngineCapacity | Bikes | Float |
| hasPower | Bikes | String |
| hasPrice | Bikes | Integer |
| hasFuelTankCapacity | Bikes | Float |
| hasMileage | Bikes | Float |
| hasBrakes | Bikes | Brakes |
| hasWeight | Bikes | Float |
| hasWheelType | Bikes | WheelType |
| hasIgnition | Bikes | Ignition |
| hasBrakes | Bikes | Brakes |

Step 3.3: Identified Inverse Properties:

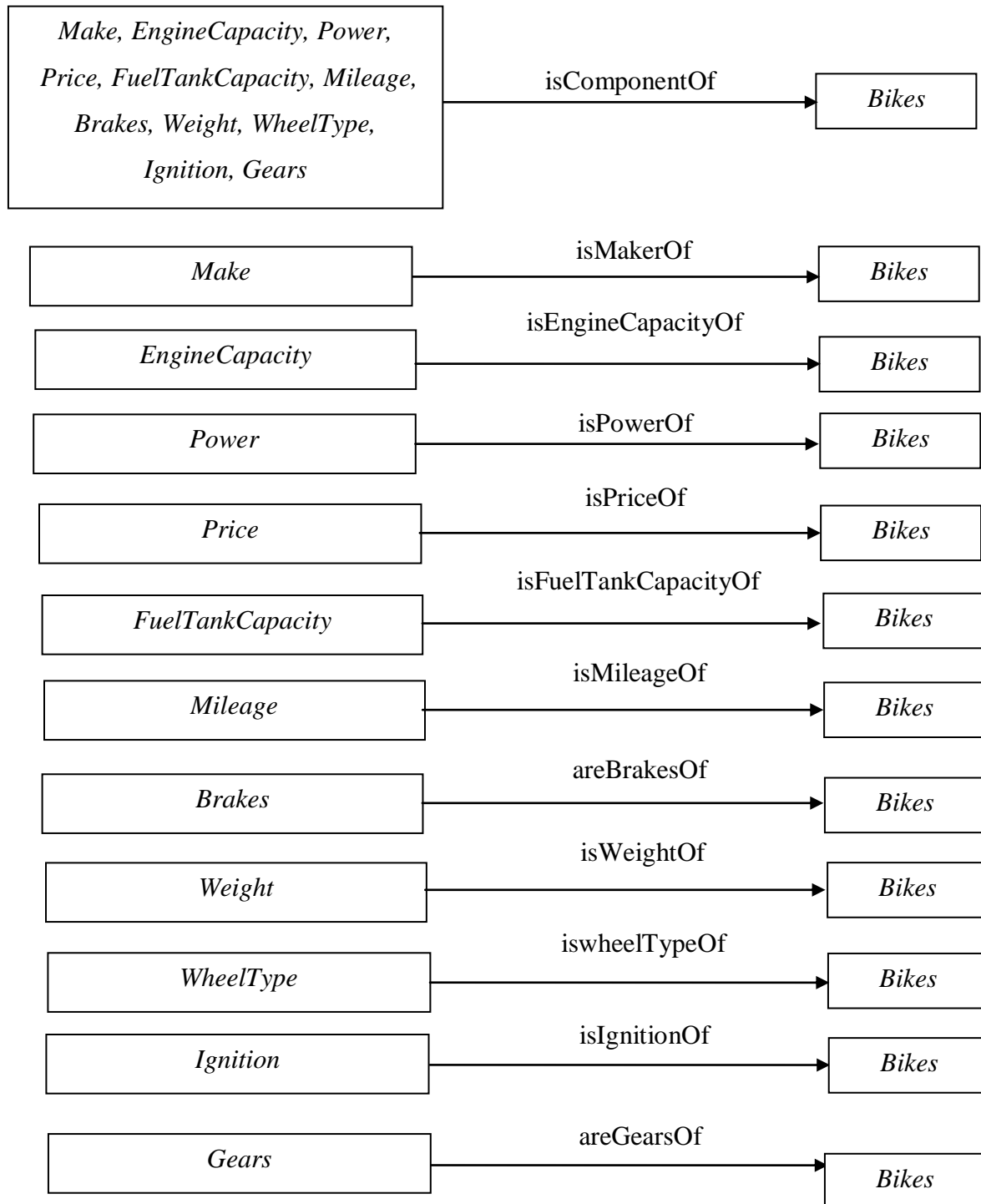
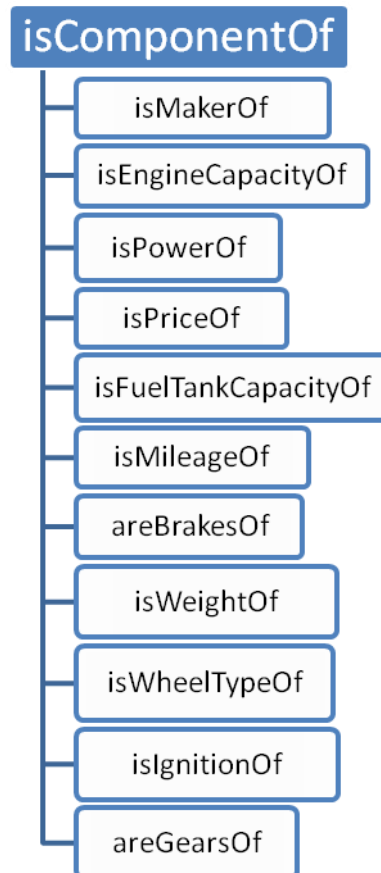


Fig. 38: Identified inverse-properties

Thus the inverse-property hierarchy is:

Fig. 39: Inverse-property hierarchy



Step 3.4: Domains and Ranges of inverse properties:

Table 7: Domain & Ranges of inverse-property hierarchy

| Name | Domain | Range |
|----------------------|---------------|--------------|
| isMakerOf | Make | Bikes |
| isEngineCapacityOf | Float | Bikes |
| isPowerOf | String | Bikes |
| isPriceOf | Integer | Bikes |
| isFuelTankCapacityOf | Float | Bikes |
| isMileageOf | Float | Bikes |
| areBrakesOf | Brakes | Bikes |
| isWeightOf | Float | Bikes |
| isWheelTypeOf | WheelType | Bikes |
| isIgnitionOf | Ignition | Bikes |
| areBrakesOf | Brakes | Bikes |