

Project II

MICRO PASSENGER VEHICLE

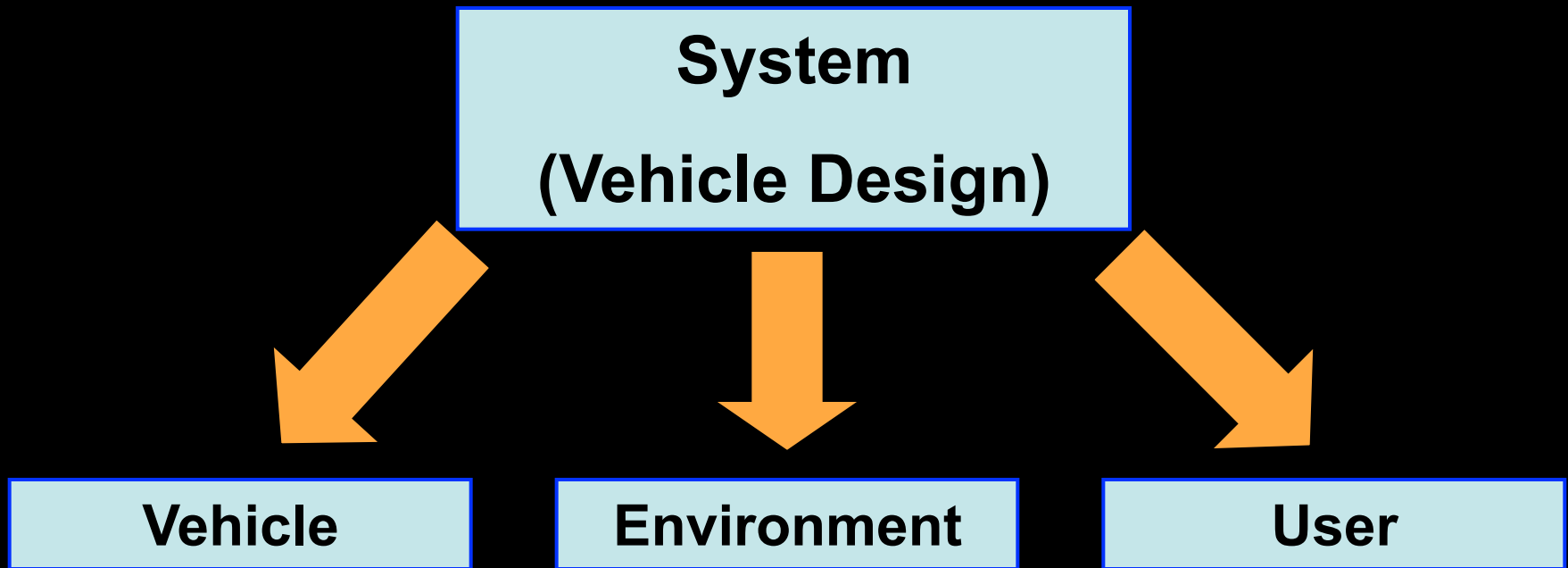
A TRANSPORTATION CONCEPT FOR INDIA

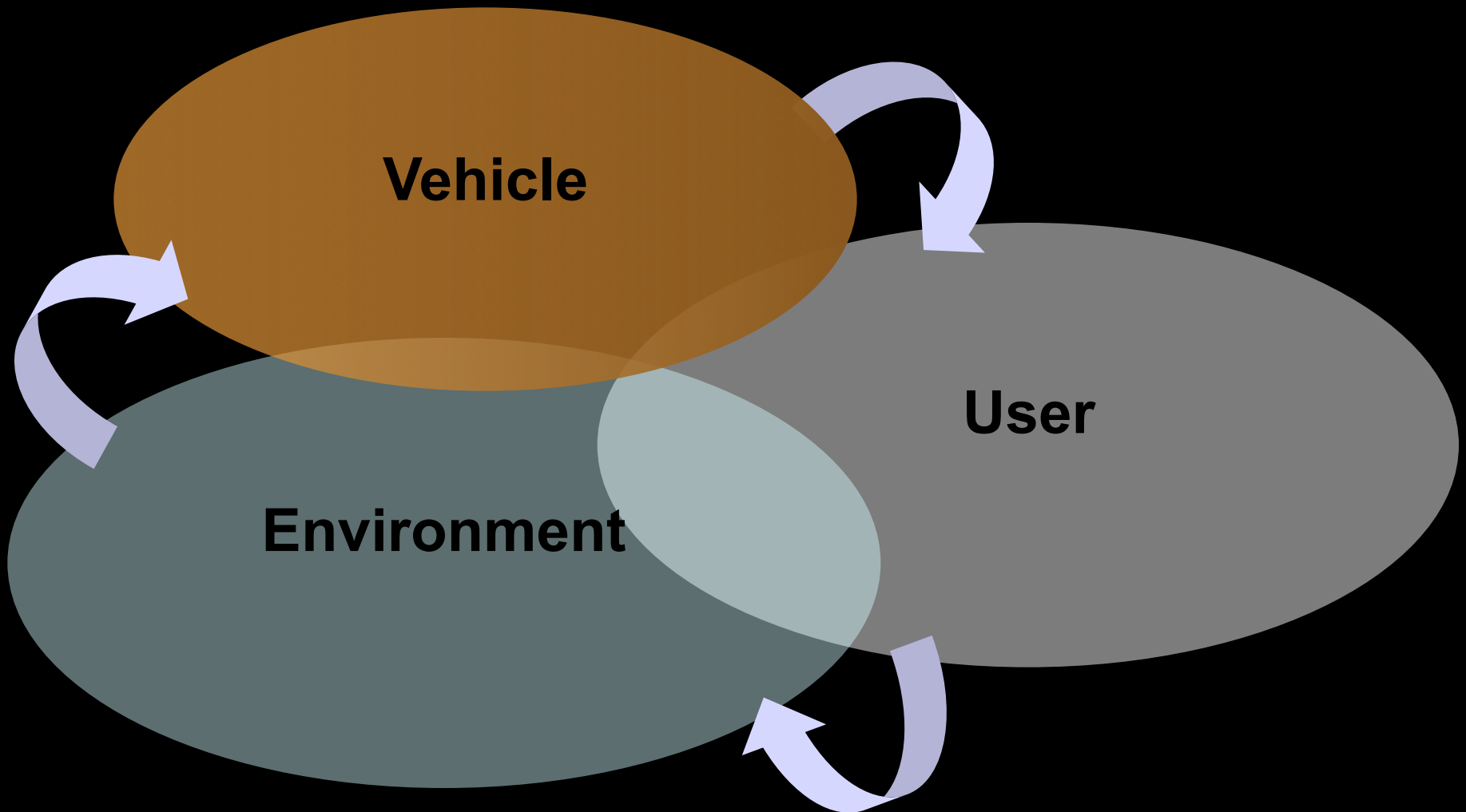
Guide

Prof .V.P.Bapat

Pankaj Dhamane

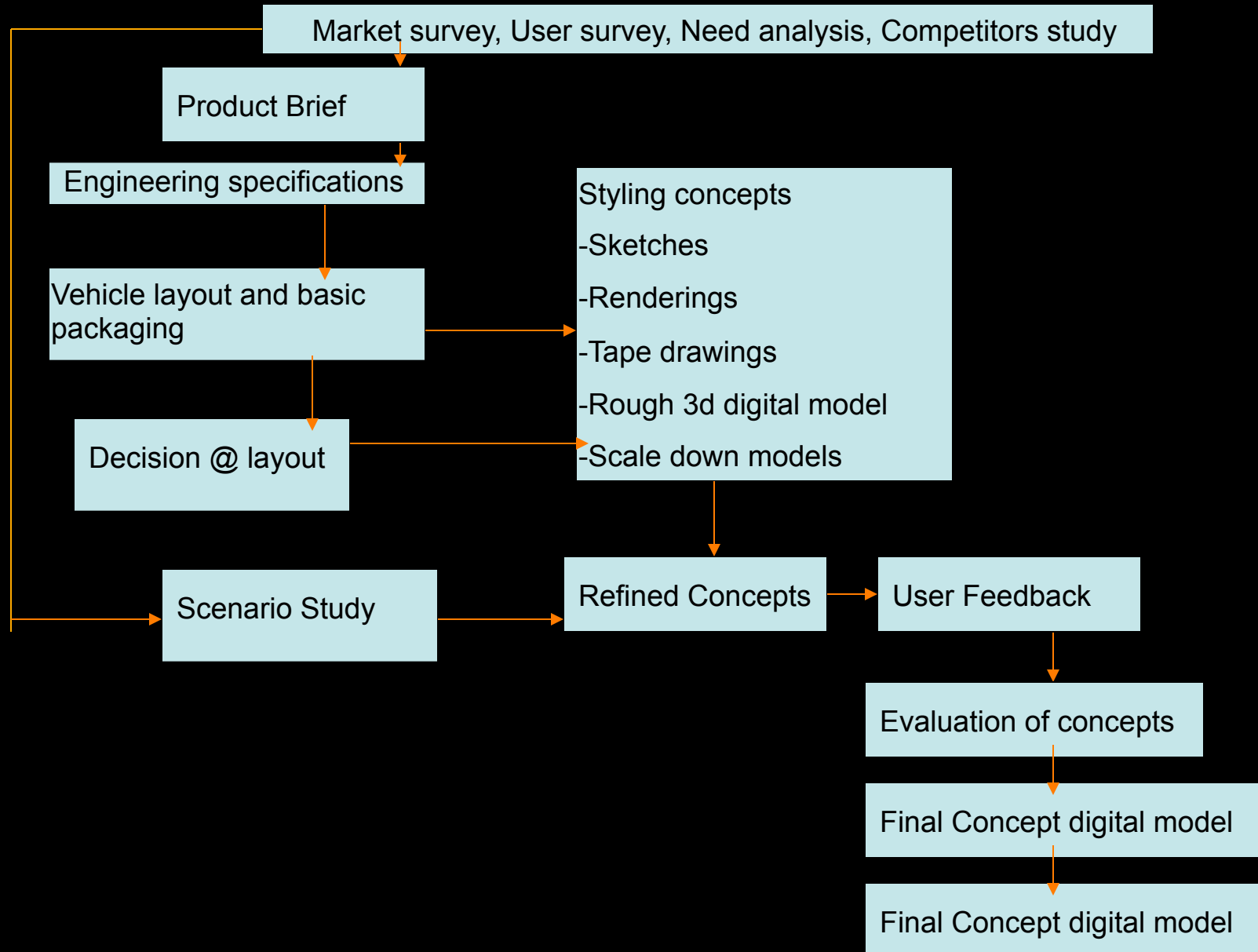
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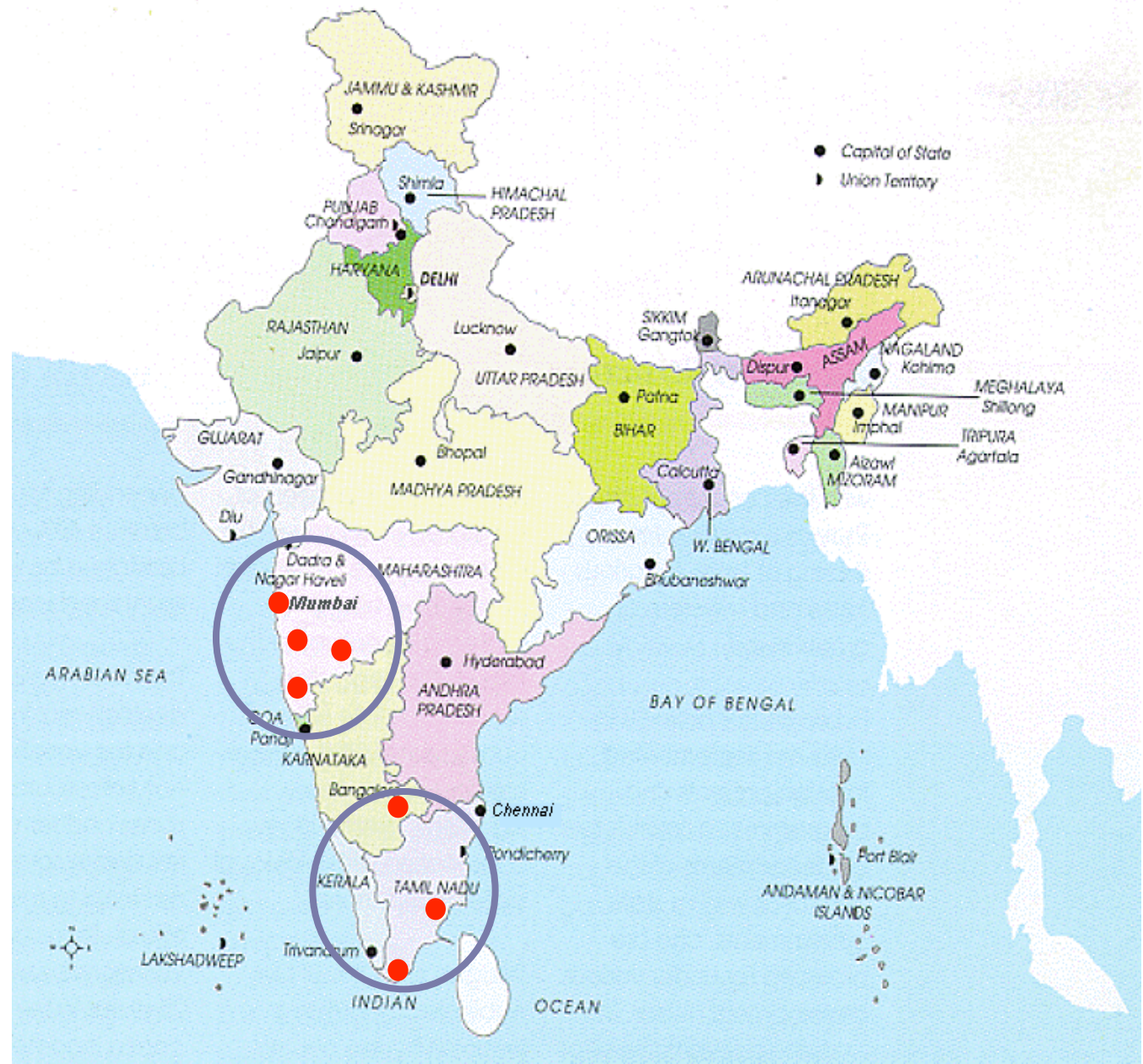


Reaction of each function on other function.

Design Process

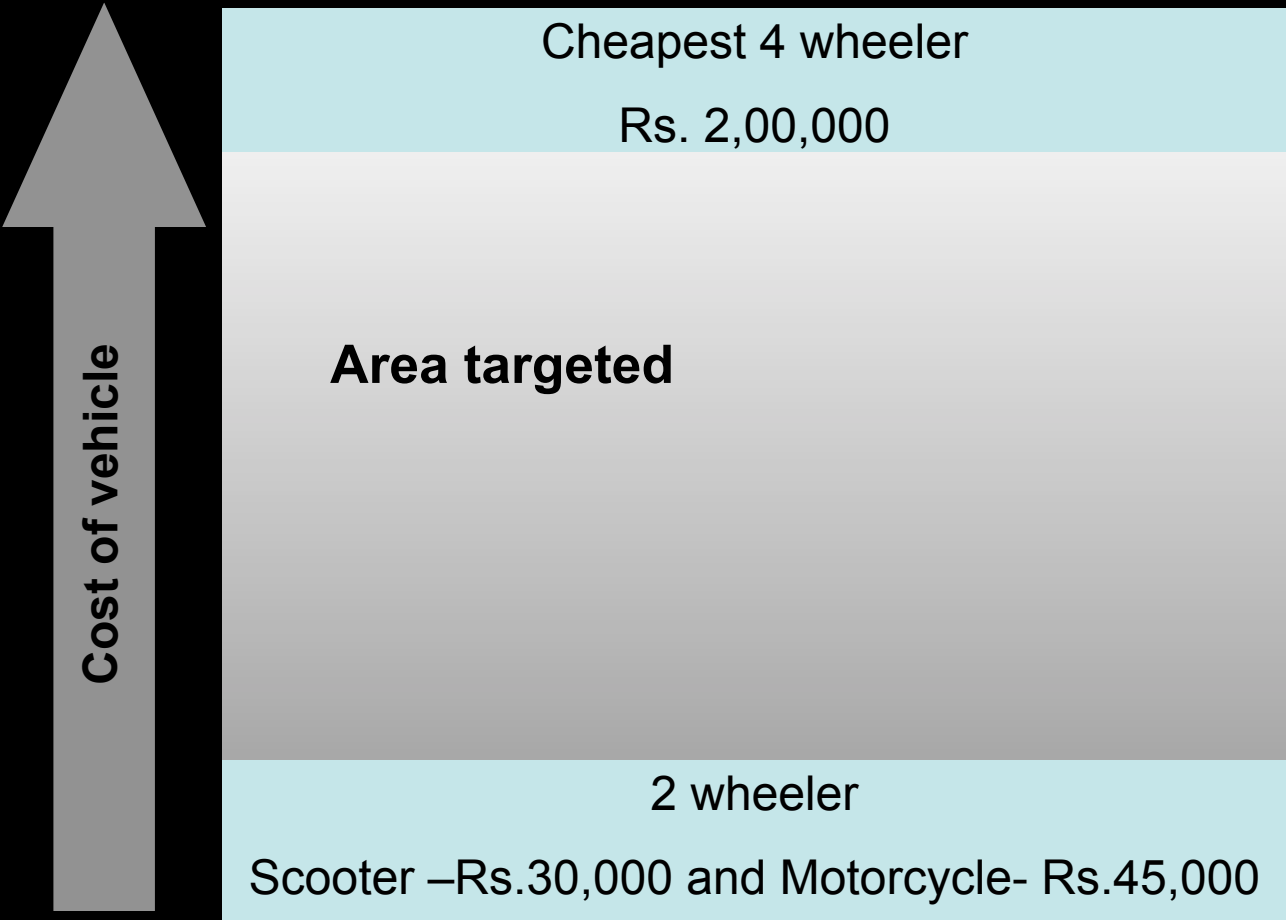


Data collection and analysis



- Who will be user?



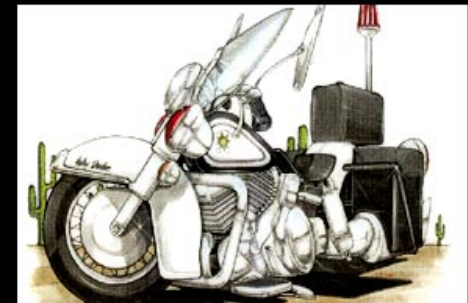


Why Middle class?

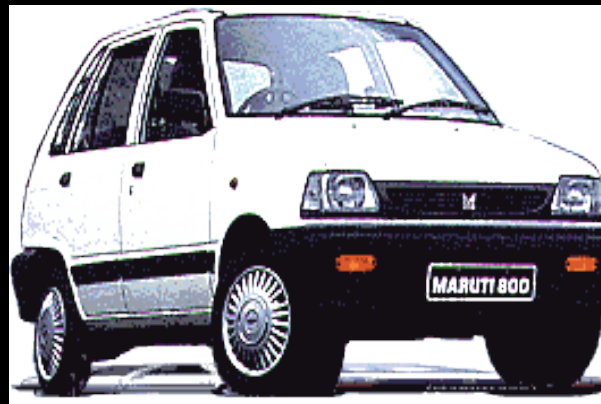


To study characteristics of middle class

- Studied 20 middle class professionals
- Personal interview with 2 Wheeler user
- Activity analysis of 2 wheeler and 4 wheeler user



- Need of compact car.
- Competitors- *REVA, TATA ZING, Foreign companies, Maruti and 2 Wheelers etc*
- Need of 2 seater car.
- Need of styling.
- Market identity.



It is very important to define clearly the user segment and where the product is being placed. As middle class user is too much vague definition of the user segment .It was further refined by defining it precisely.

- Middle class of urban area (Earning Rs.10000+ P.M.)
- Nuclear family
- Young couples
- Singles
- Executives
- Elder citizens

Other possible user segment

To appeal several markets at once and to broaden the base of potential customers it is always important to define the other or secondary user of the product.

- Second or third car of rich class.
- In professional campus as intra campus vehicle.
- In educational campus as intra campus vehicle.
- In National parks.
- For sales person.
- As a golf cart.

Reasons of Traffic jam

- Pedestrians are part of the road.
- Population growth.
- **Big size vehicles (but carrying less people).**
- Parking done on the road.
- Parking places (Pay n Park) are allotted on road which narrow down the road.
- Poor road conditions.
- Encroachment of shops on road.
- Traffic rule violation.
- Wrong town planning.
- Accidents on the road.
- **Formation of traffic Void.**
- Product display on the road.





Narrow roads



Rule violation



Encroachment





Destiny IT



Ligier Ambra



Toyota E-com



Peugot Tulip



Mika



Micro car



Bild



Ford Think



Bellier Vario



Smart



Smart cross



Image City



Renault P55



Destiny IT



Ligier Optima



Sulky



Nissan Hypermini



Metro Cubo



Rivolta Isigo



- Changing styling trends
- Oil crisis
- Fuel dependency on Arab countries
- Pollution
- Nuclear families
- Population growth
- Heavy traffic
- Per person space allocation



It is intended to design a Micro passenger vehicle which will be used for intra city transport.

•**Technical:**

1. It will carry 2 Adults and 2 Kids and minimum 2 VIP mantra bags 429 x 299 x 186mm.
2. The vehicle could be hard top or a convertible (Optional).
3. It will have a light weight structure.
4. It must be compact to solve the existing traffic and parking problem with innovative design solutions.
5. It should have environment friendly power plant with fuel consumption . of 25-40 Kmpl with maximum speed of 60 Kmph.
6. The vehicle must be low cost (Approx. Rs. 1, 50,000).
7. The vehicle will be mass produced.

Form:

1. The vehicle must be a fine piece of styling considering present and future styling trends.
2. It must have a new identity in its class and also in over all automotive market.

Safety:

1. It must be stable in all running conditions.
2. It should protect passenger from outside weather.

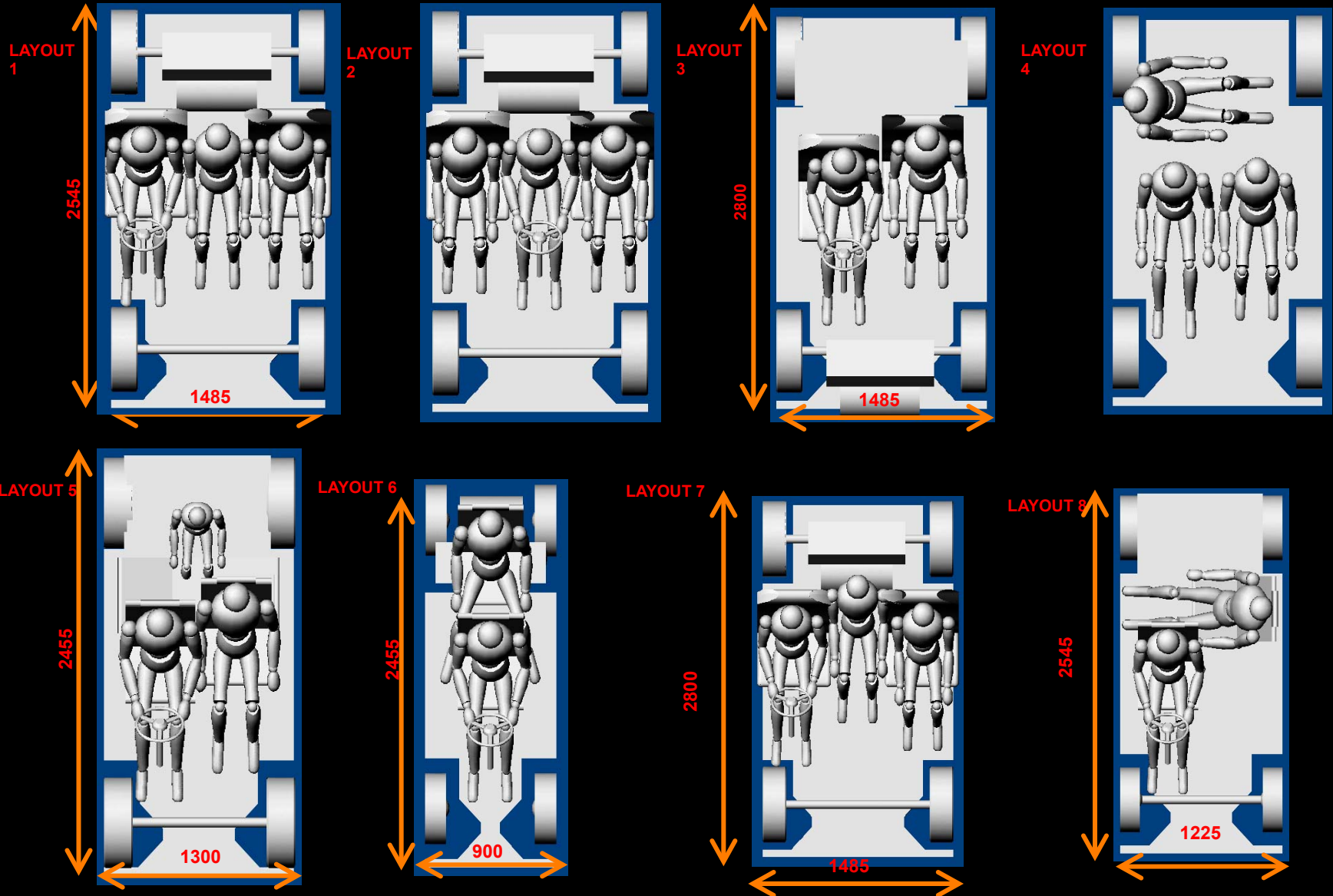
Comfort:

1. It will accommodate 2 adult (95th percentile male)
2. It will have adequate head and leg room.
3. It must provide easy in and out access.
4. It must give better front and side visibility.

Engineering & Styling.

- Engineering
- Ergonomics & layouts
- The body
 - a. Profile
 - b. Proportions
 - c. Sculpture
 - d. Stance

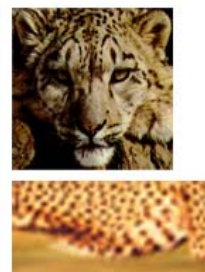
- Engineering
- Ergonomics & layouts





EAGLE

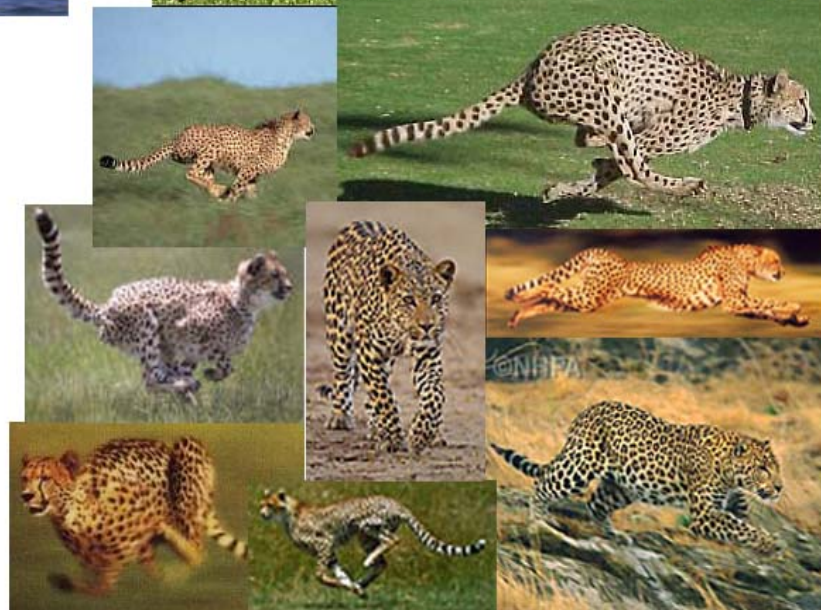
STYLISH
FOCUSED
STRONG
DETERMINED
AGGRESSIVE
INDEPENDENT
SHARP



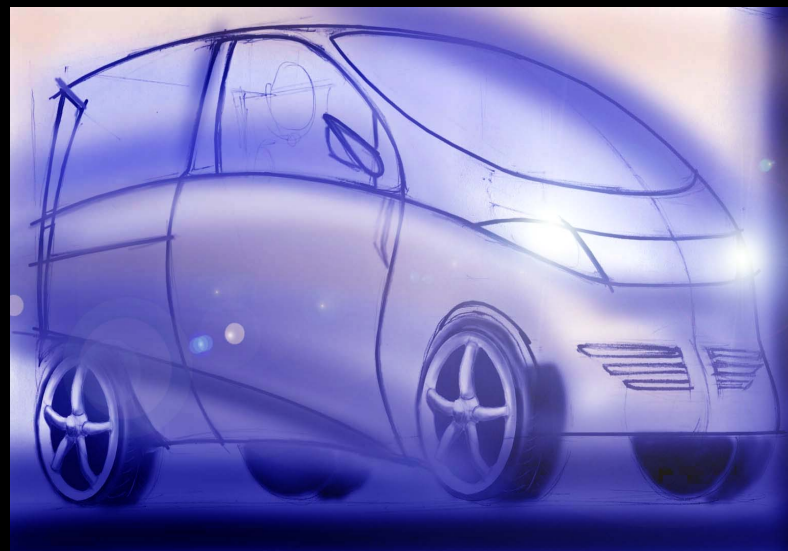
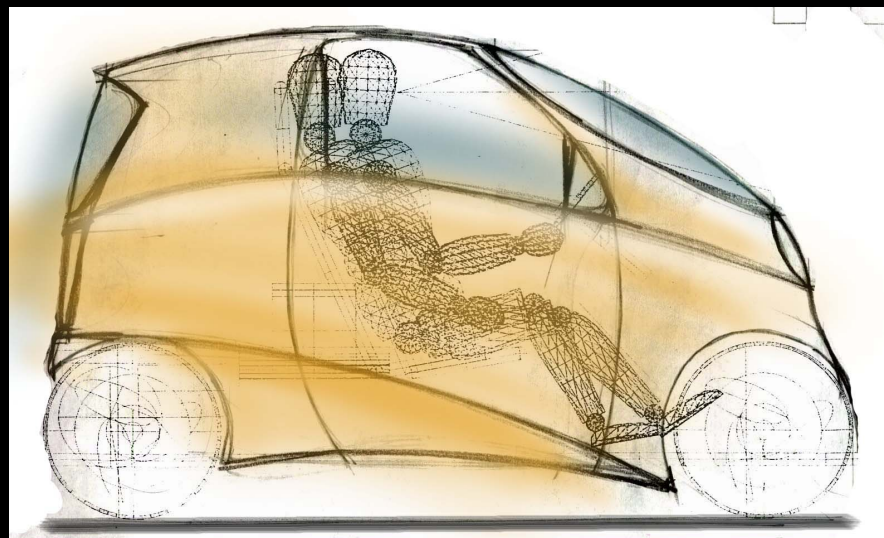
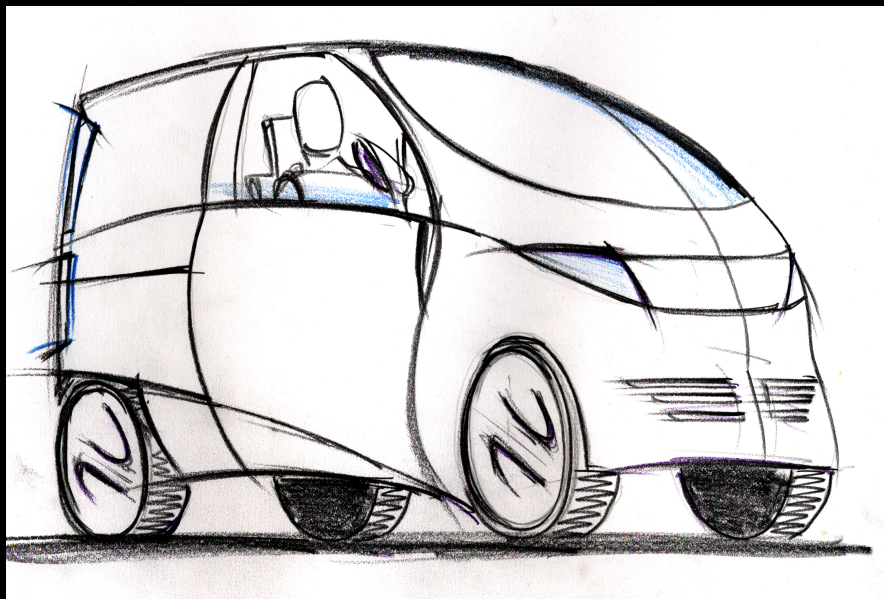
CHEETAH



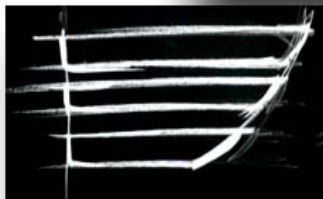
DYNAMIC
HANDSOME
FAST
AGILE
FIERY
GAIT
FELINE



A



DETERMINED



AGGRESSIVE



A

A



AGILE



HANDSOME



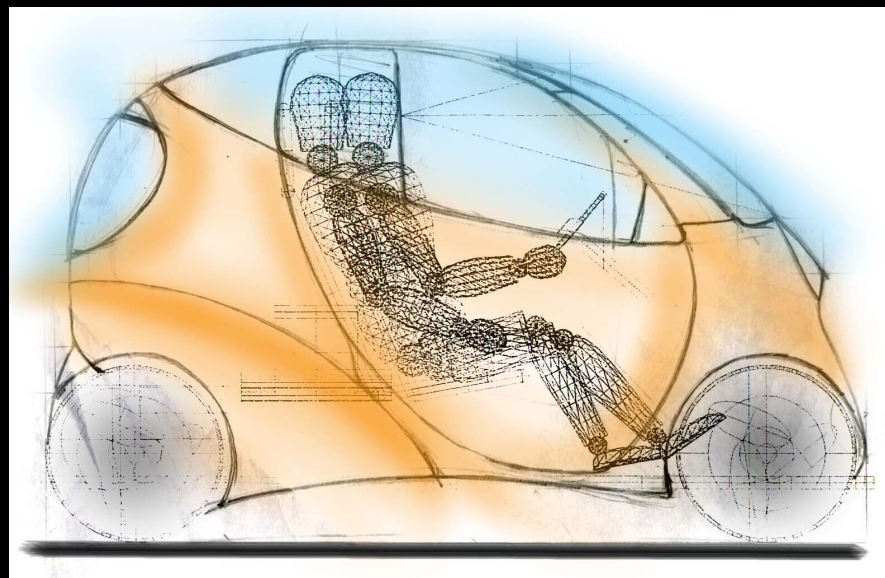
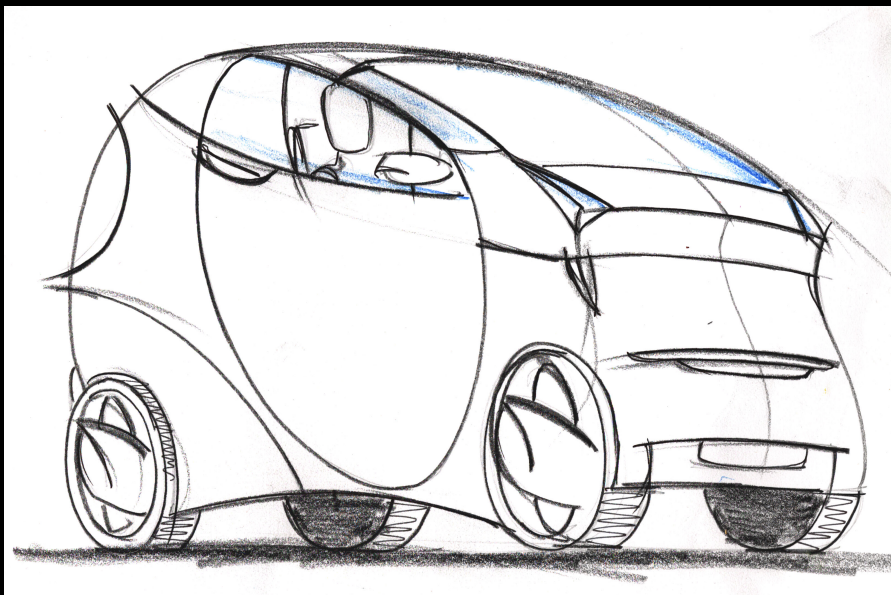
DETERMINED



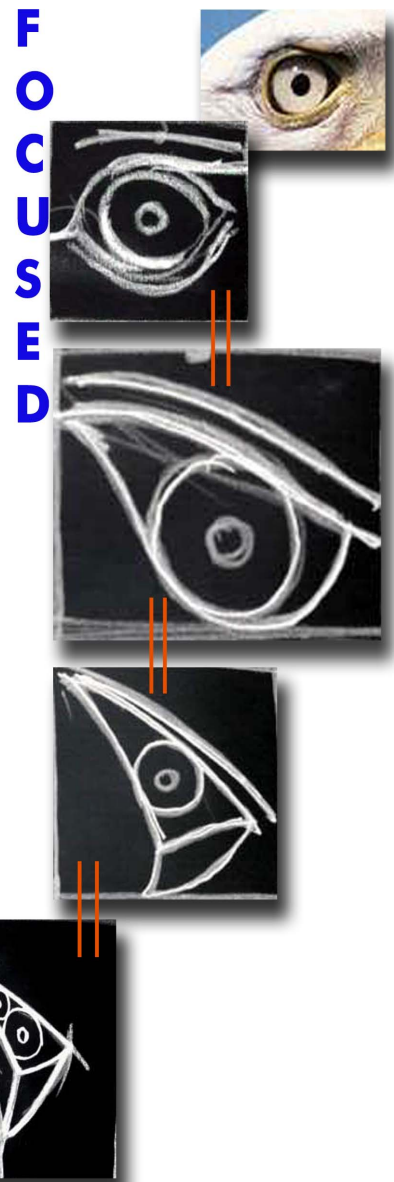
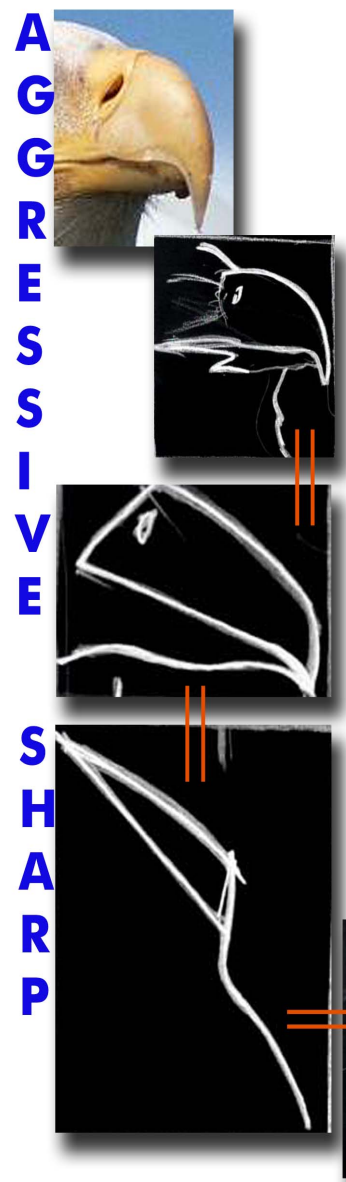
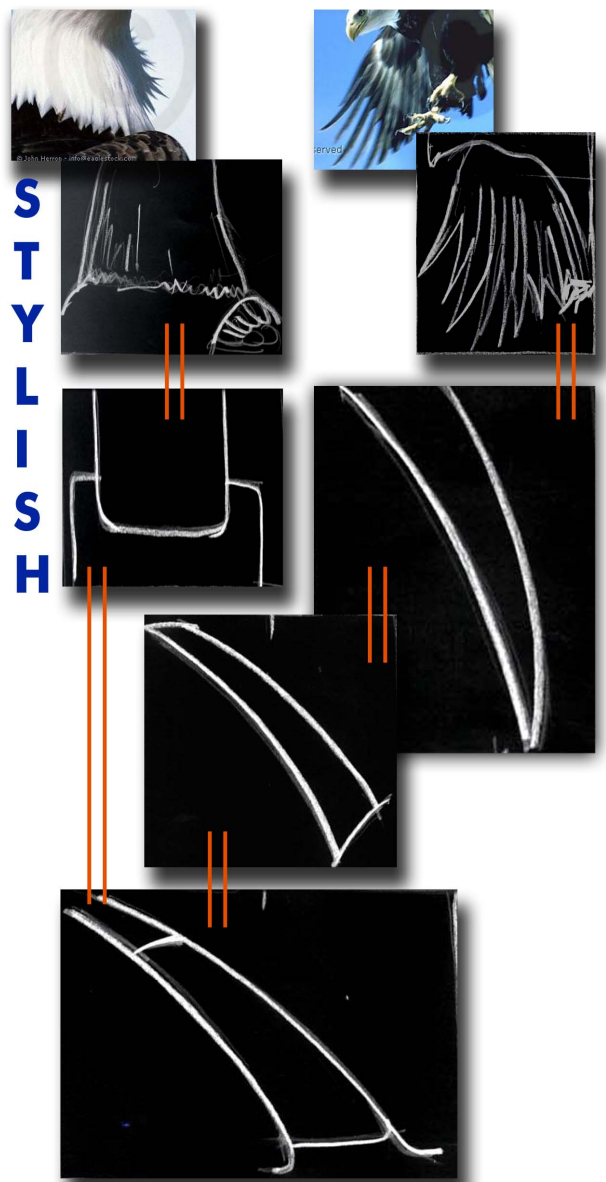
AGGRESSIVE



B

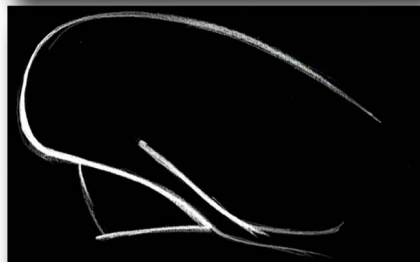


B





FAST

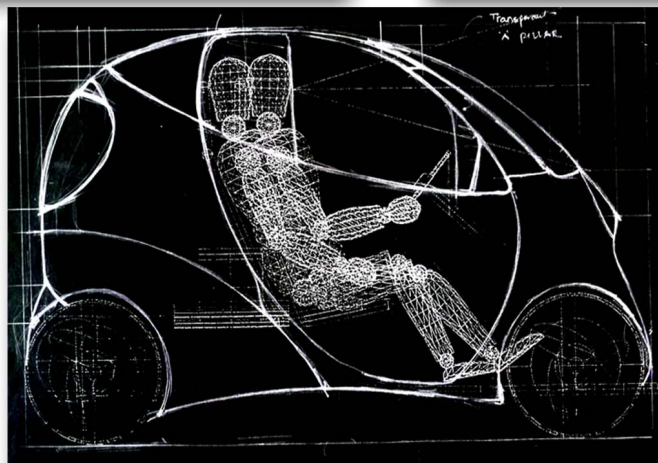


**D
Y
N
A
M
I
C**



FELINE

GAIT





RHINO



**STRONG
MASSIVE
CONCRETE
SERIOUS
LOUD
AGGRESSIVE**

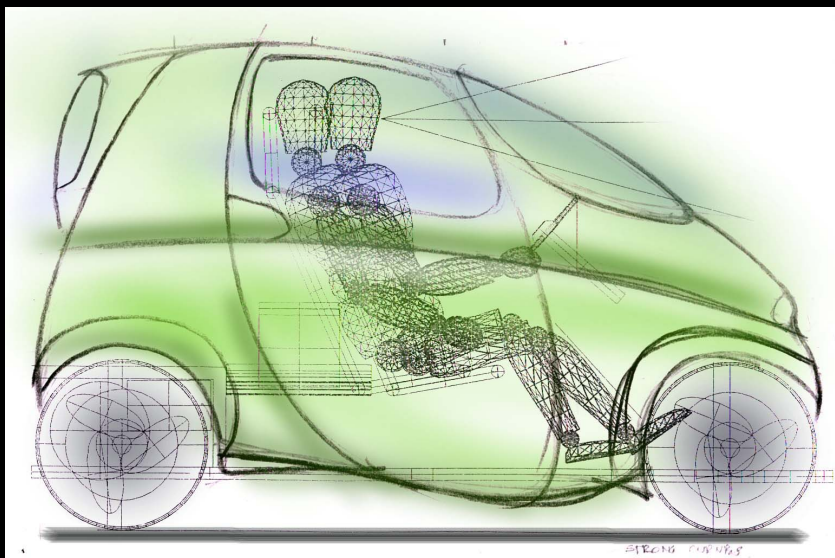
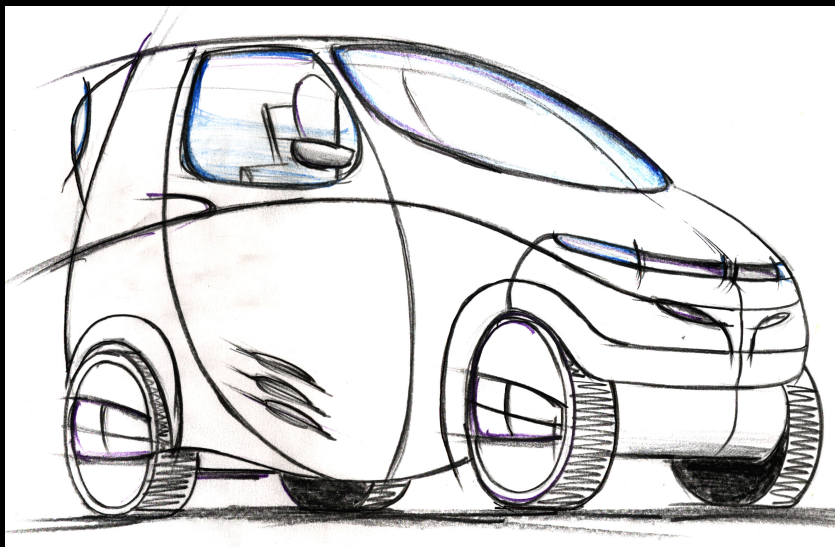
DOLPHIN



**SLEEK
STYLISH
FAST
FEMININE
AERODYNAMIC**



C





AERODYNAMIC



STYLISH

C



C

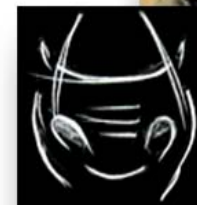


MASSIVE

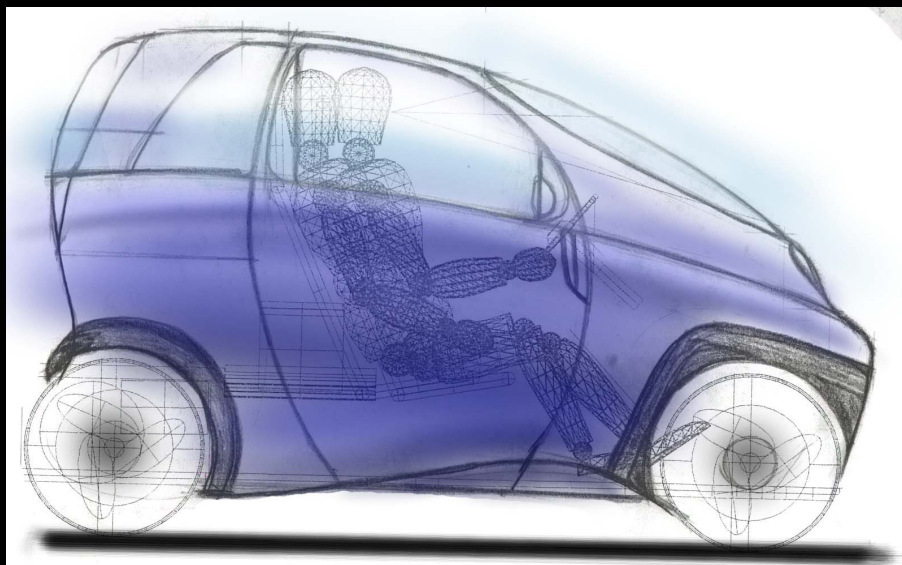
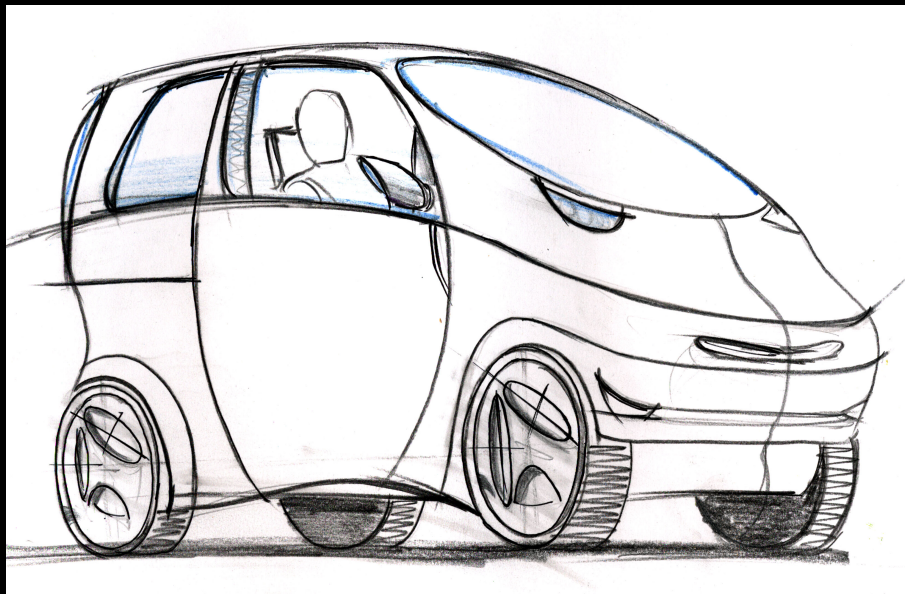


STRONG

SERIOUS



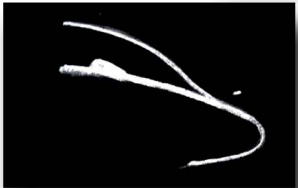
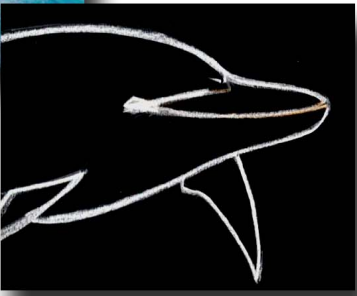
D



D



STYLISH



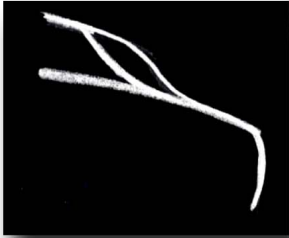
FAST



**F
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SLEEK

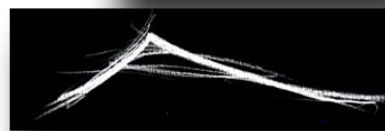
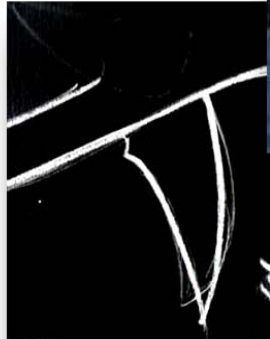


D

AERODYNAMIC

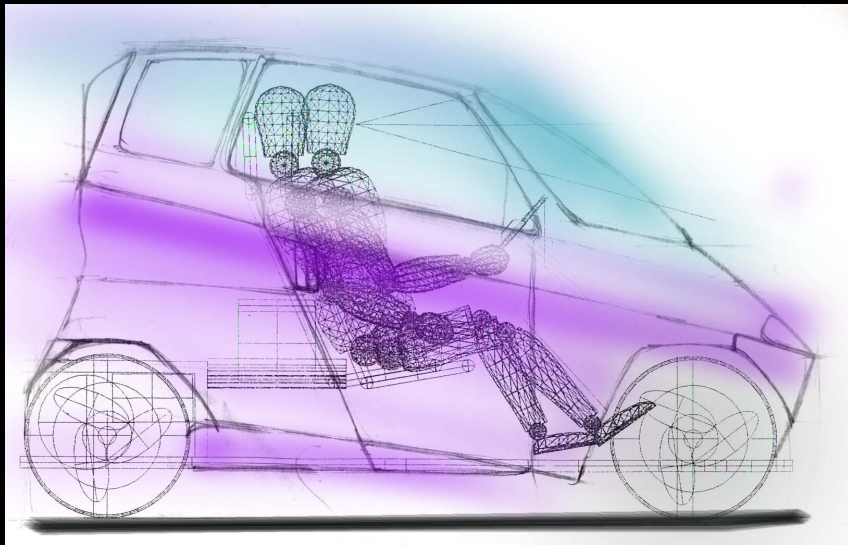
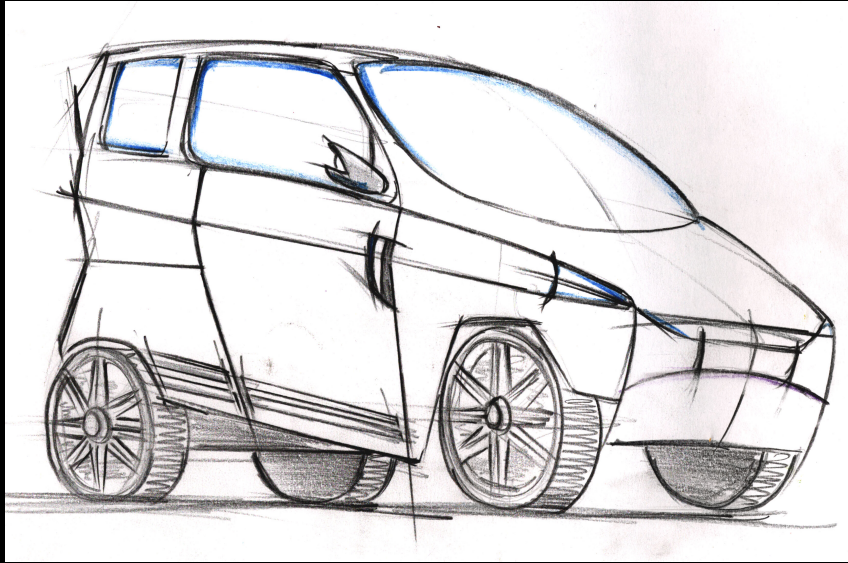
STRONG

MASSIVE

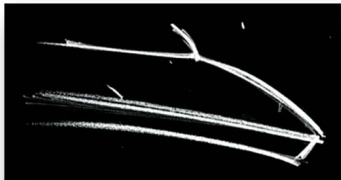
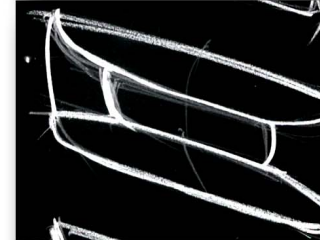
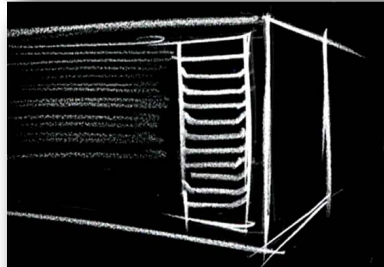
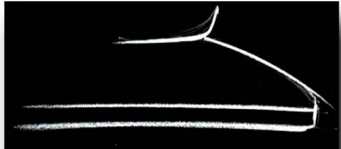
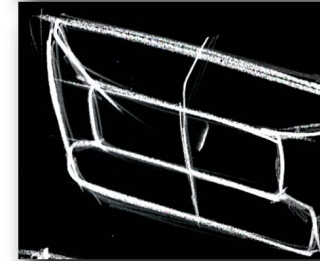
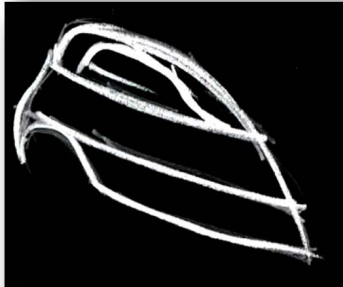
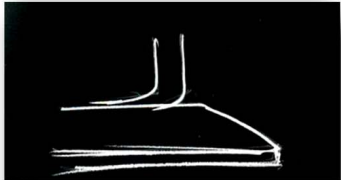
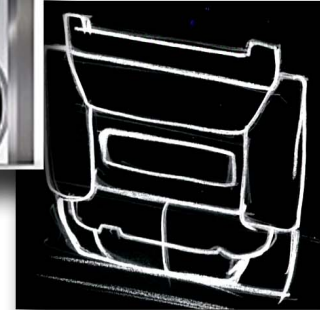


A large collage of various consumer goods and services, arranged in a grid-like fashion. The items include: electronics such as multiple CRT and LCD monitors, a digital watch, a digital camera, a mobile phone, and a portable music player; appliances like a microwave, a toaster, a blender, a food processor, a vacuum cleaner, a washing machine, and a refrigerator; clothing and footwear including a pair of sneakers, a pair of sandals, and a pair of shoes; and personal care products such as AXE deodorant, Sunsilk hair oil, Lifebuoy soap, and Taj Mahal Tea. The collage is a visual representation of a wide range of consumer products available in the market.

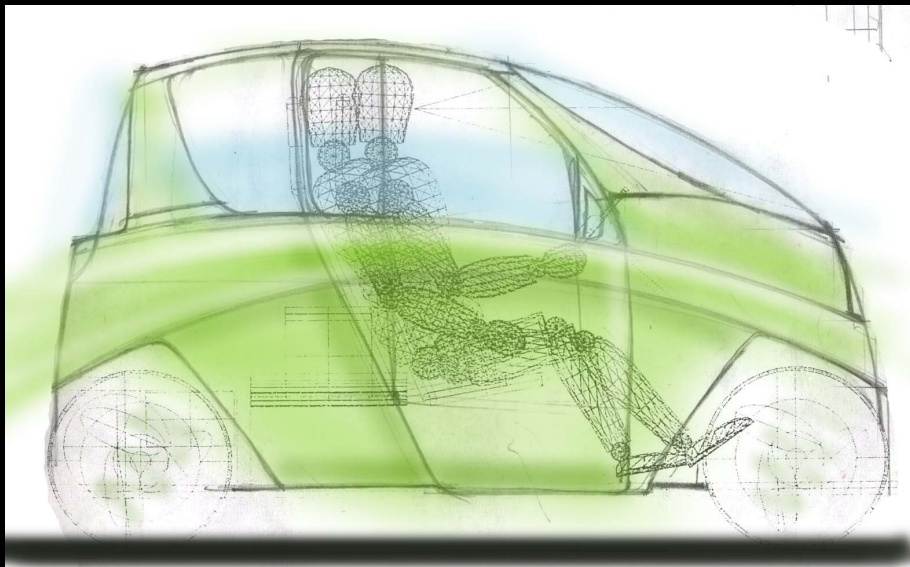
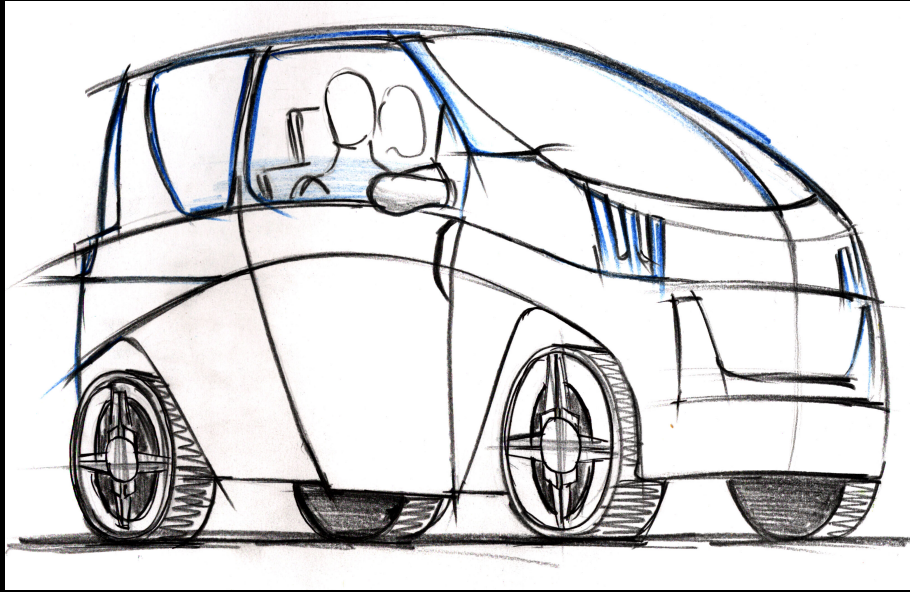
E



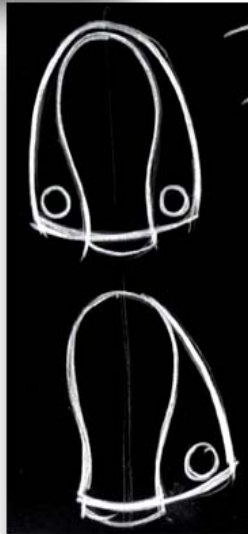
E



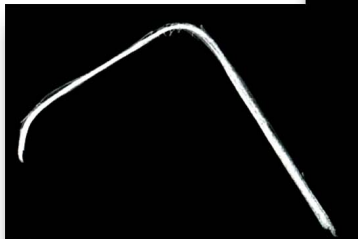
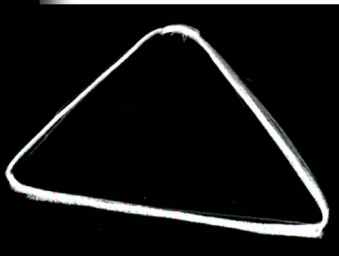
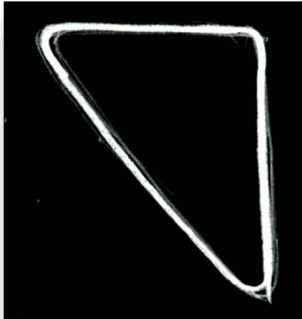
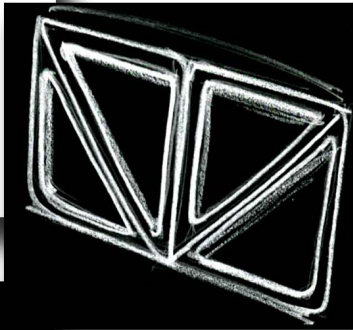
F



F



F



•Scenarios studied

Scenario 1

- Reducing the price of the vehicle and giving all the features of existing competitors (or more than that).

- Adding some more feathers to solve existing problems.

- How to make it low cost?

Mass production, Fewer parts, using lot more existing parts, low cost material.

•Scenarios studied

Scenario 2

- Innovations in all sense form, manufacturing , detailing .
- Cost is not the constraint, it may be more than competitors.

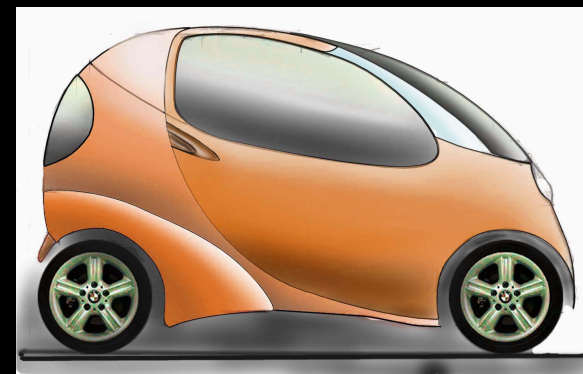
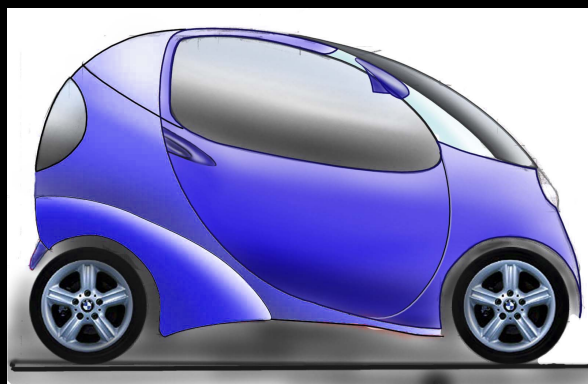
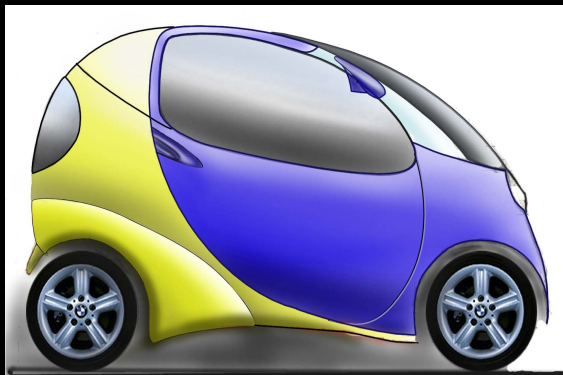
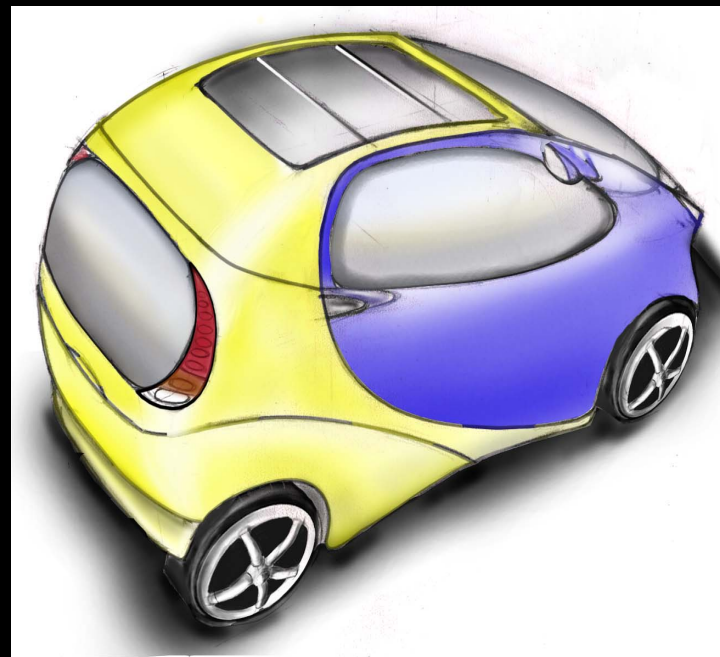
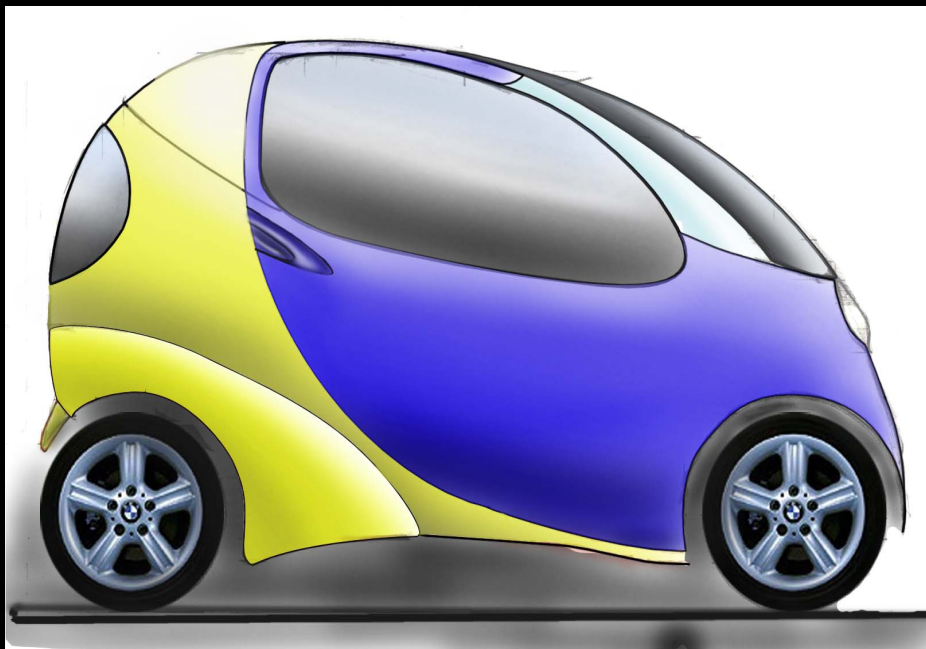
•Scenarios studied

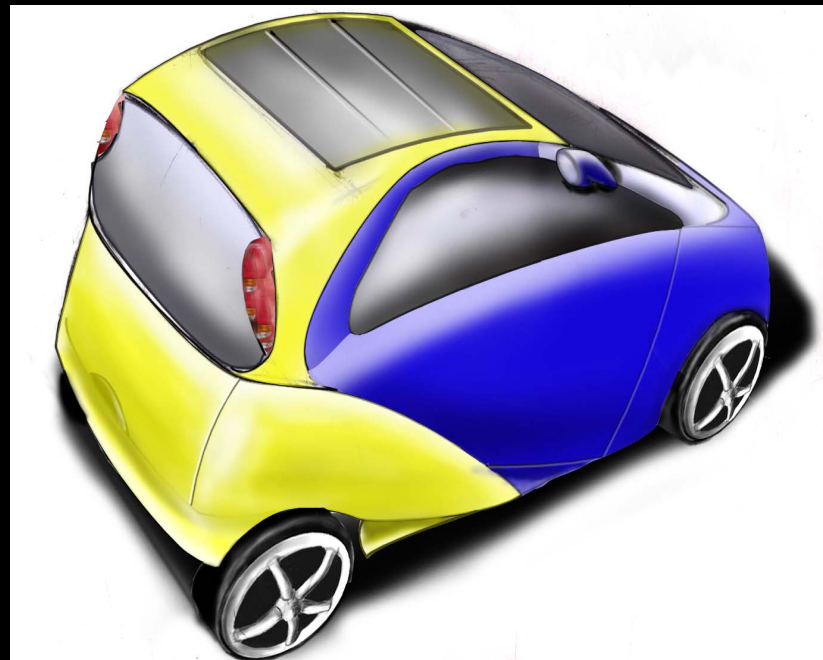
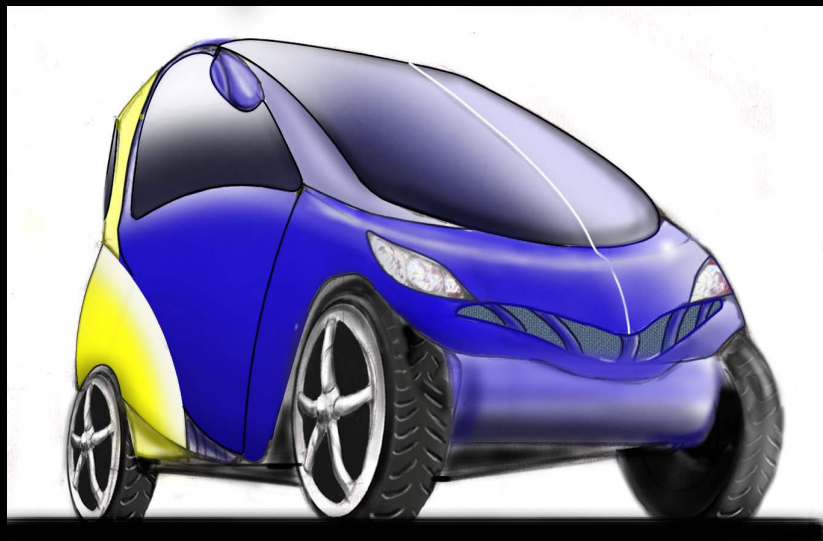
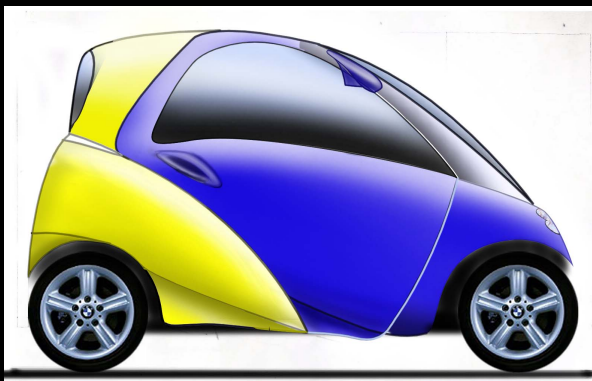
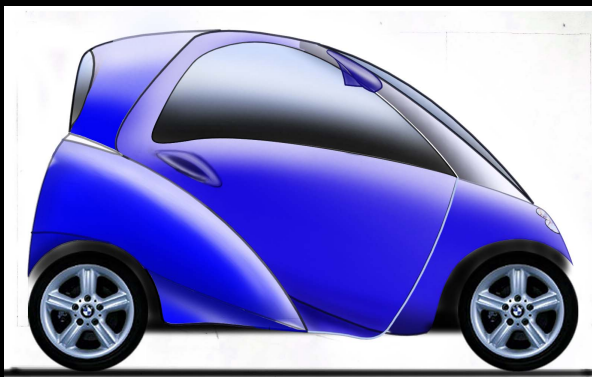
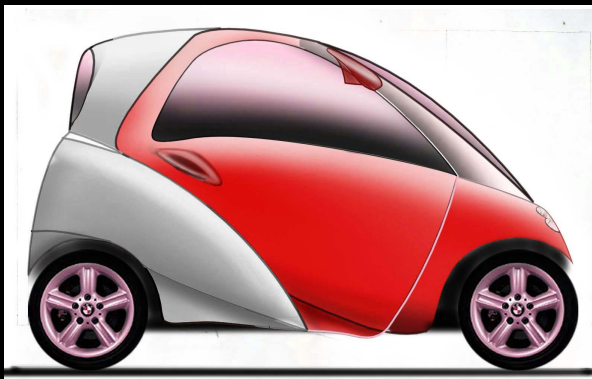
Scenario 3

- Compactness is the key. Much more tight dimensions than competitors.**
- No back seat at all.(Only for 2 Adult)**

REFINED CONCEPTS

J

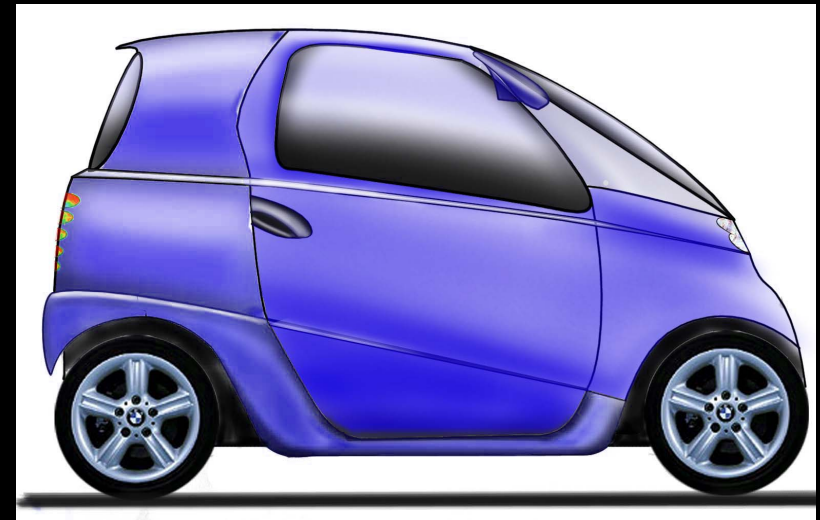
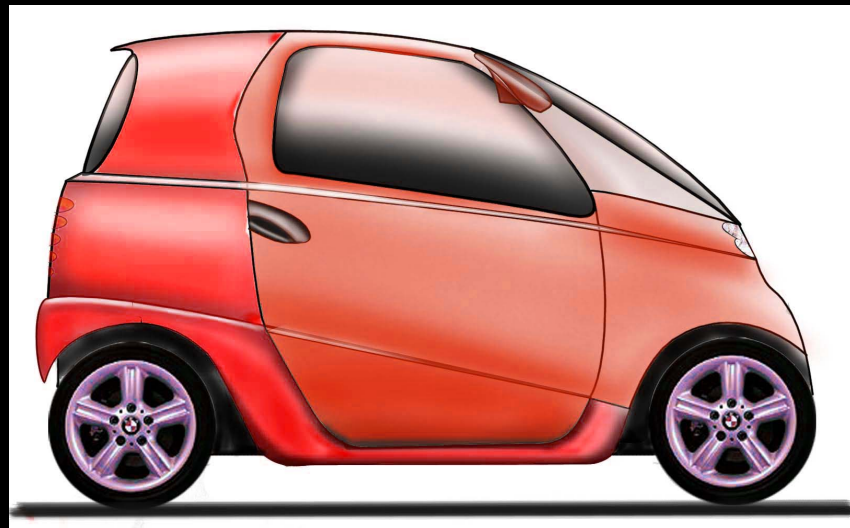
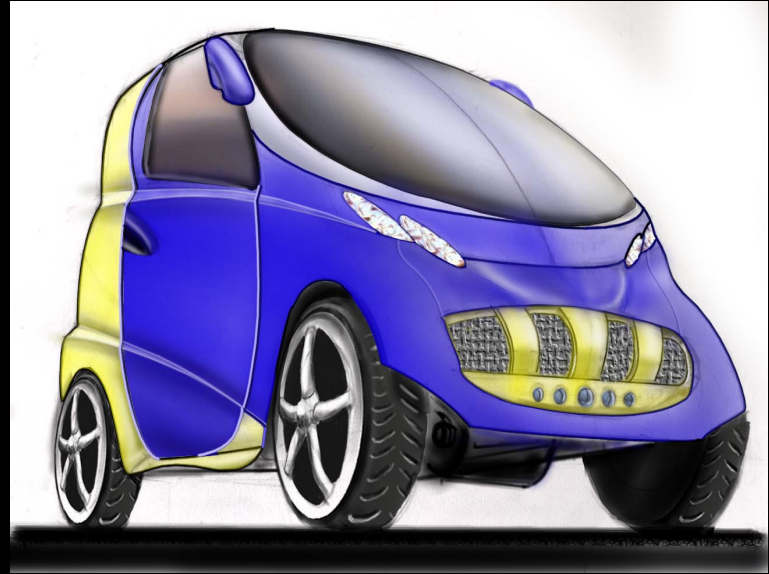
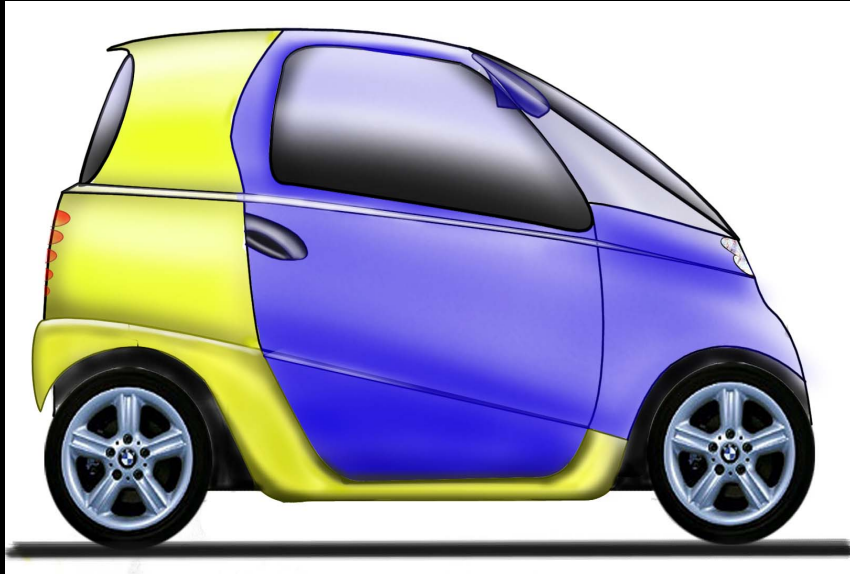




K

REFINED CONCEPTS

L



FORM

1. Resemblance with user's temperament
2. Futuristic form (5 years ahead)
3. Matching with contemporary styling trend
4. Unique identity
5. Micro car ness
6. Individual styling element treatment

COMFORT

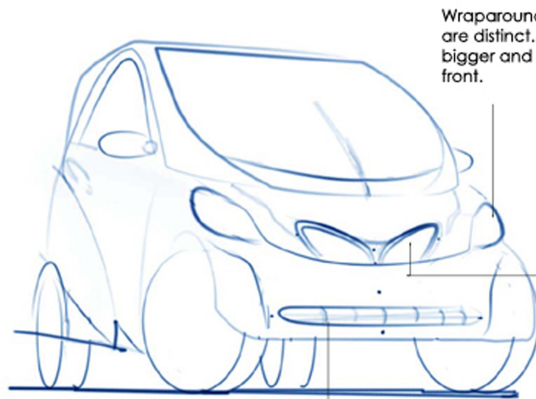
1. Access / Egress
2. Head room
3. Leg room
4. Loading and unloading of luggage
5. Front vision
6. Side vision

TECHNICAL

1. Solution to traffic and parking problem
2. Luggage Space
3. Compact
4. Cost

- During concept evaluation phase internet survey was carried out and feedback was taken from the people.
- Suggestions were taken from the people regarding the overall form and individual elements, colour etc.

After considering all parameters ,points distribution and also user feedback, it was decided that **concept K** has got maximum potential to develop further. So further refinement and work was done on **concept K**.



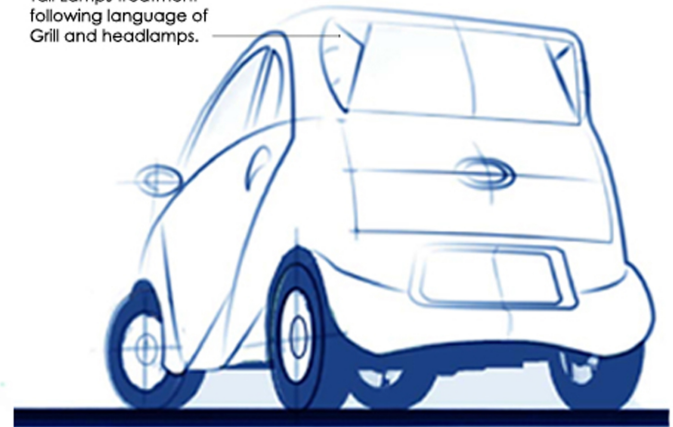
Wraparound headlights are distinct. They are much bigger and enhancing the front.

The grill is well placed between headlights and it looks like beak.

Bottom air intake is simple and subdues the pointed owards look.



Tail Lamps treatment following language of Grill and headlamps.

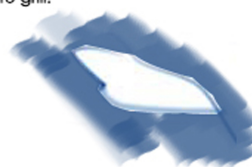


Headlamps are much smaller and placed horizontally.

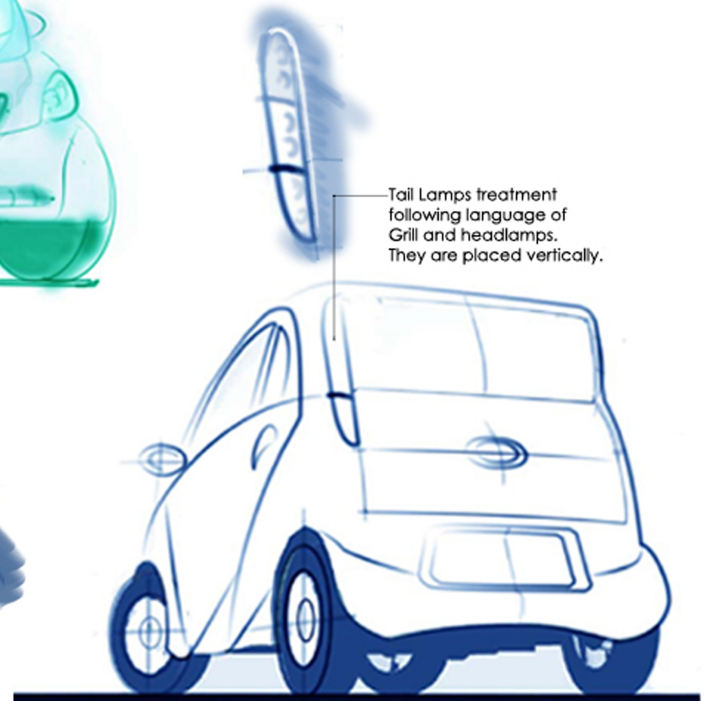


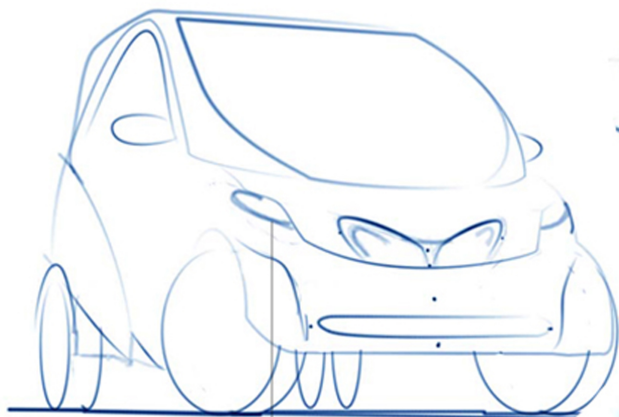
Simple clear lines gives a cute look to grill.

The front looks very simple.



Tail Lamps treatment following language of Grill and headlamps. They are placed vertically.

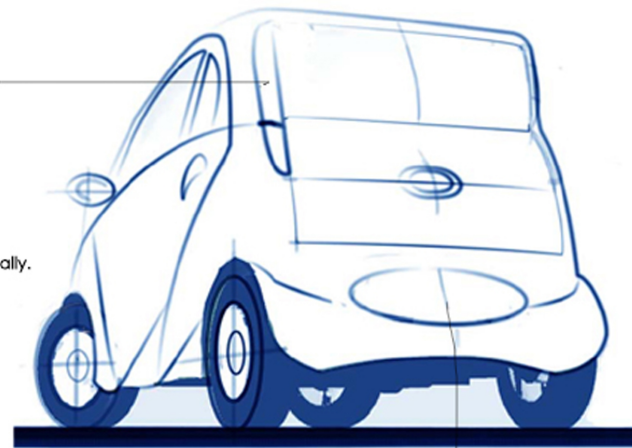




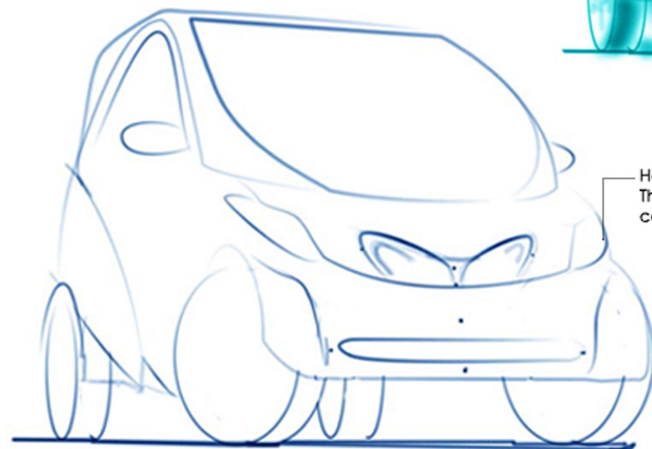
Tiny looking headlamps are placed at extreme edge of the front.



Tail Lamps treatment following language of Grill and headlamps. They are placed vertically.



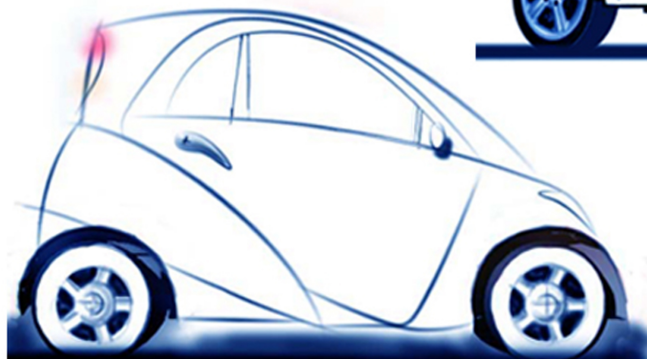
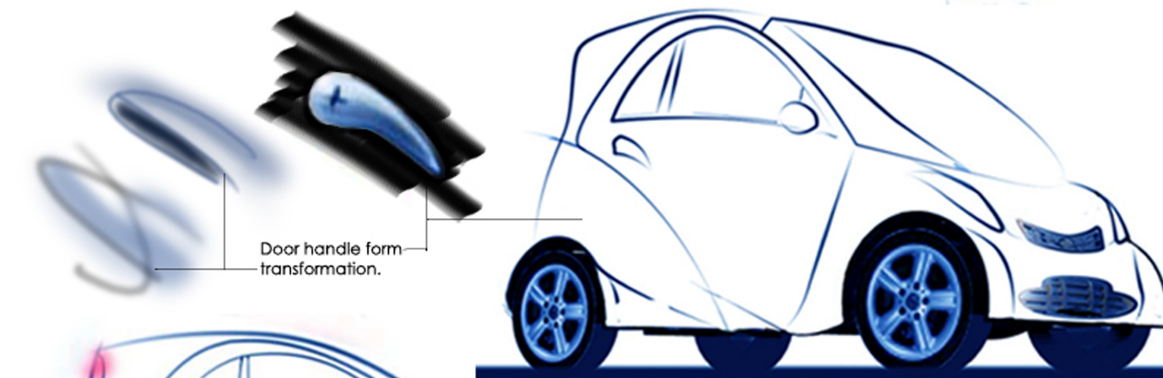
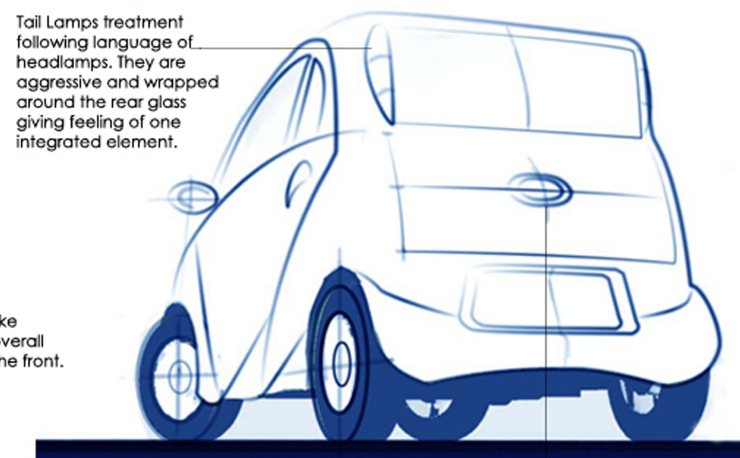
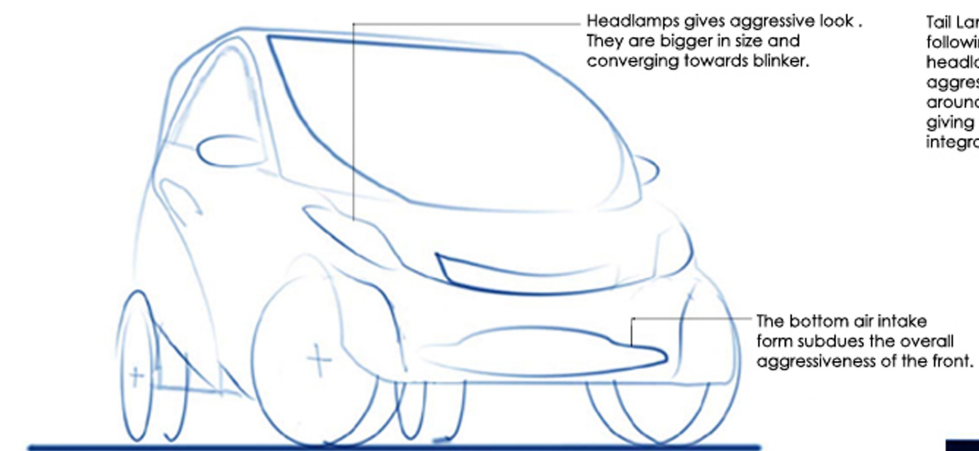
Elliptical number plate looks distinct.



Headlamps gives aggressive look. They are bigger in size and converging towards blinker.



Tail Lamps are shifted to middle area of rear door and they are well integrated with the rear door. But they are consuming the luggage space access.



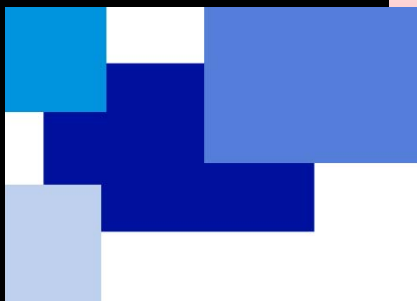
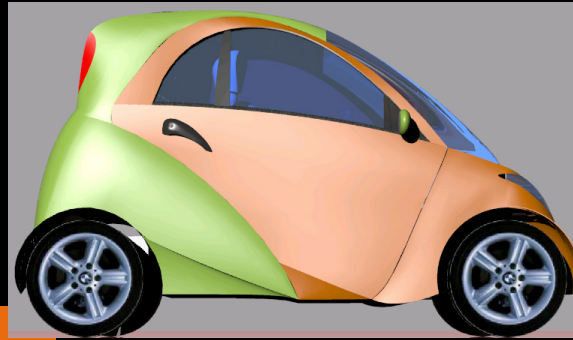
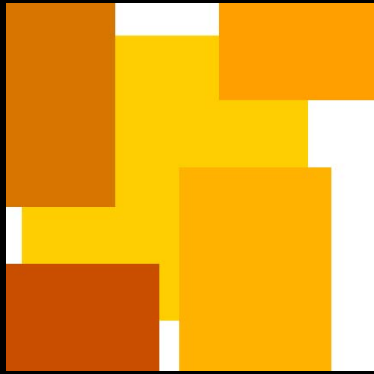
Rear door handle is divided into two for two different rear doors, but still they look like a integrated element.



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COLOUR SELECTION



FLEET

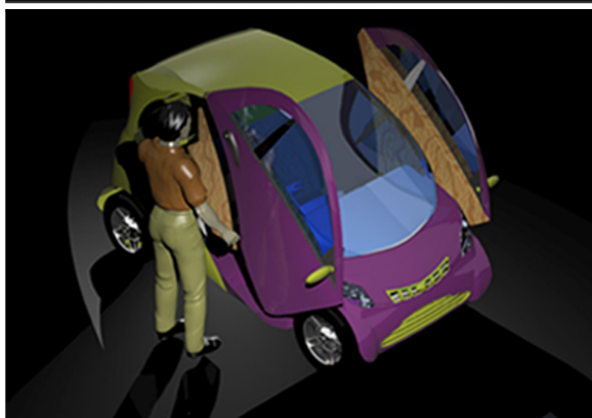
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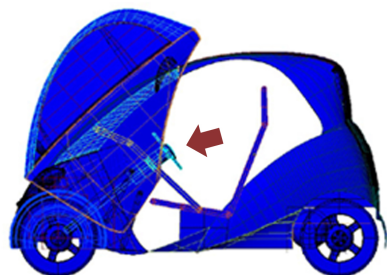
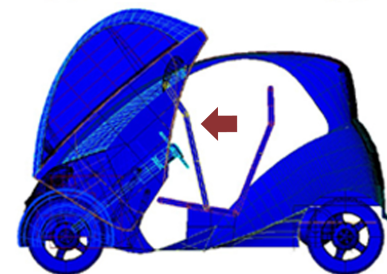
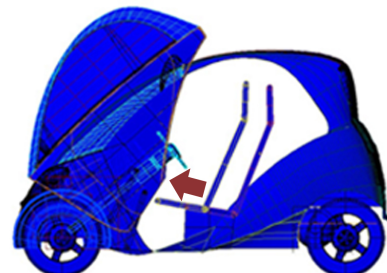
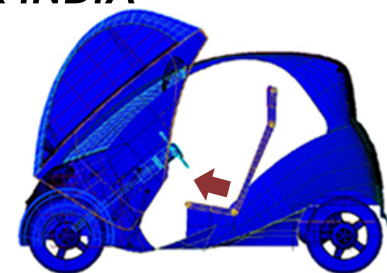
The door opens like wings. It is proposed to tackle the parking problem. After parking the car in grace and egrace is easy with the help of the wing type door.

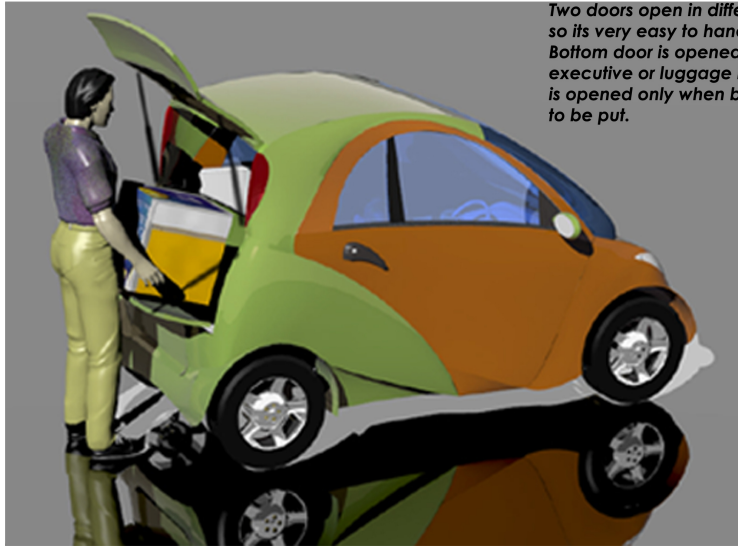


The co passenger seat is tilted forward easily so that kids can access the rear seat.

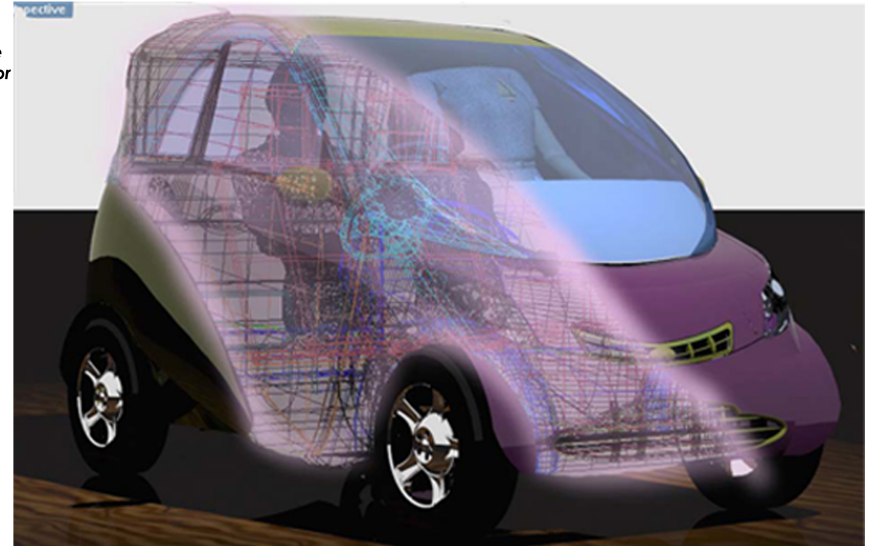


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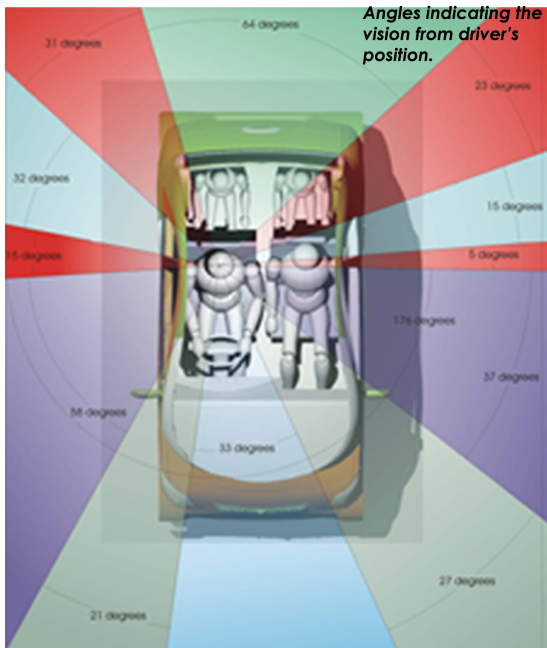




Two doors open in different direction so its very easy to handle luggage. Bottom door is opened to slide things like executive or luggage bag etc. Upper door is opened only when big size luggage is to be put.

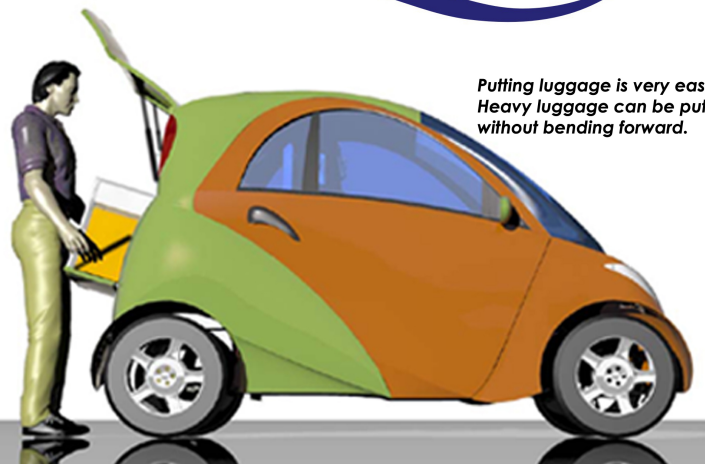


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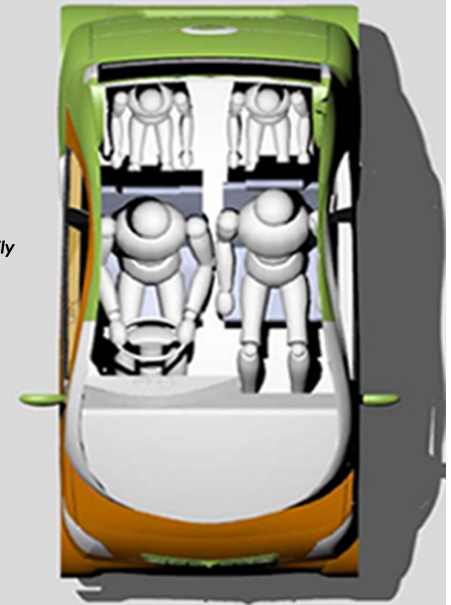
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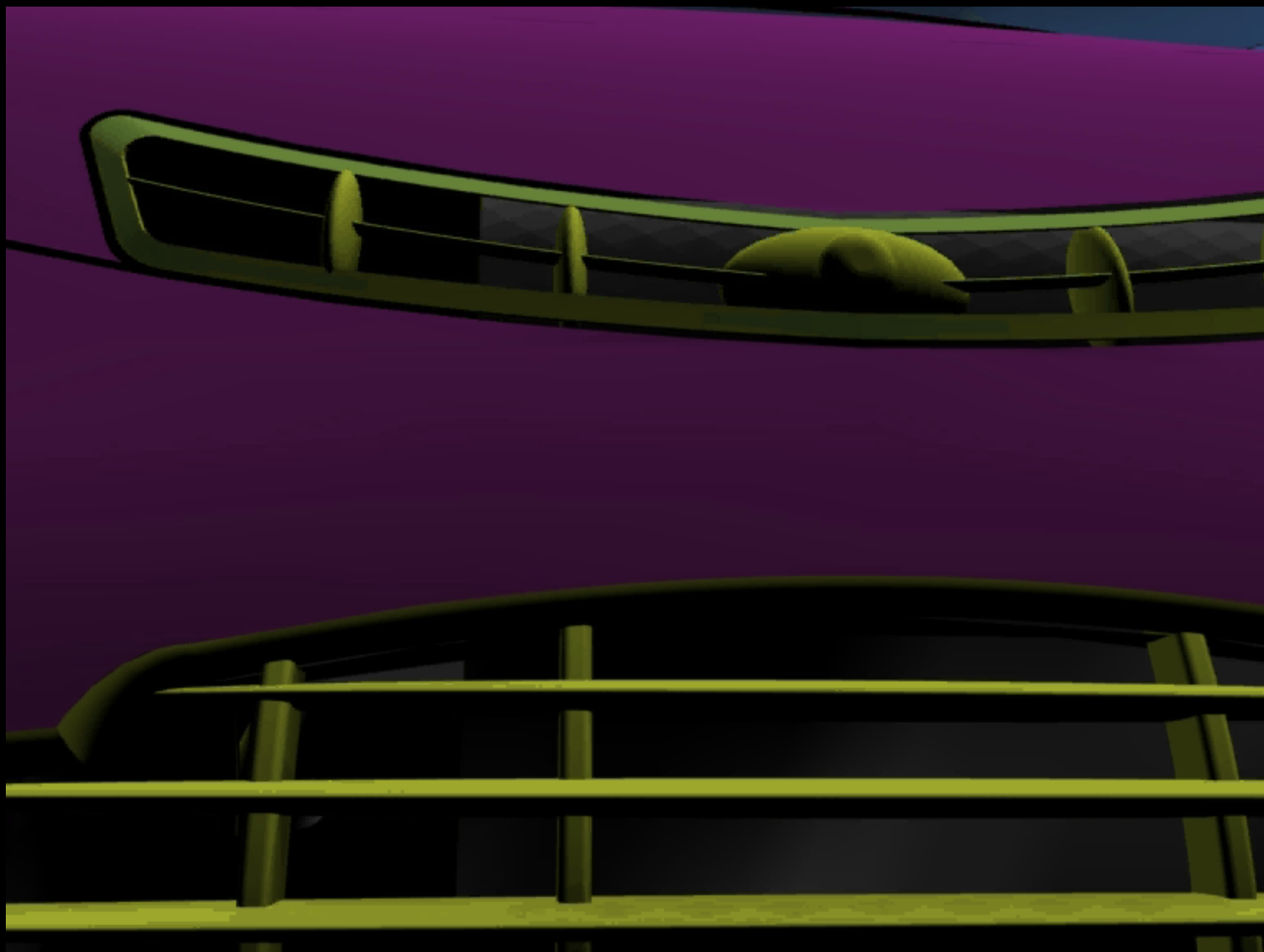
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Putting luggage is very easy. Heavy luggage can be put easily without bending forward.

LAYOUT

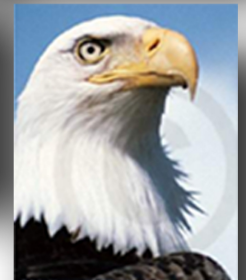
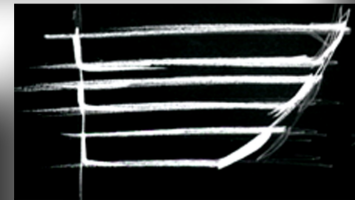
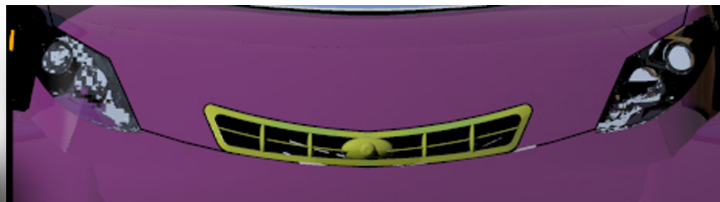
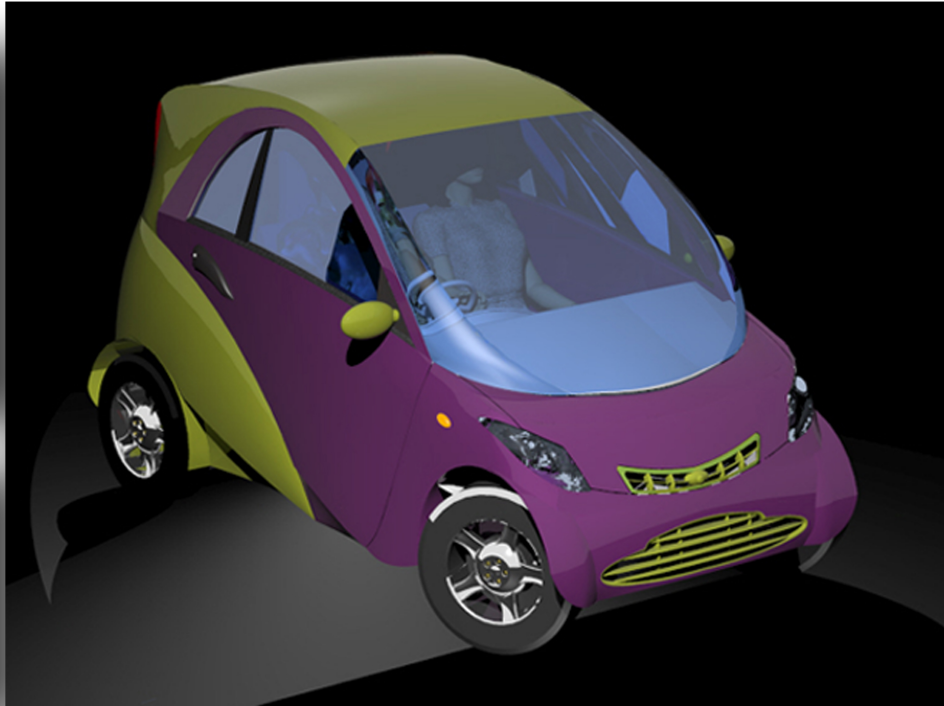
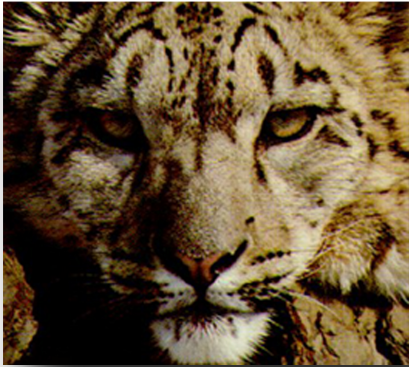




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