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Project Proposal	MotoMoto
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# Goals

## Main Goals

- Provide a consolidated platform of car builds, parts, events, and interaction.
- Offer part compatibility features to lessen user's time spent.
- Assist users in price analyses and finding popular parts.
- Help users connect with other users interested in similar products or events.

## Audience

MotoMoto is intended for everyone interested in cars. Users seeking affordable prices, compatible parts, or car build advice will especially find it advantageous.

## Pain Points

- **How do I know if a part is compatible with my vehicle?**
  - MotoMoto solves compatibility issues with community interactivity. We take advantage of multiple projects using the same part and user warning flags to label whether a part can be marked as compatible or not compatible.
- **Is there an easier way to share my specific parts and associated market analyses?**
  - MotoMoto allows users to share their car builds with a list of products directly linking to sites where others can purchase them based on market analyses. Such posts are also displayed with product popularity, price graphing trends, and part comparisons and compatibility.
- **How can I learn about cars from people in my community?**
  - There are many people who are interested in cars but, have nowhere to start or no one in their life to help them. Our app provides them a central location to learn and build on their knowledge of cars and car modifications from users with similar interests.
- **Where do I find a central hub for all car events in my area or car builds?**
  - MotoMoto provides a feed for users desiring convenient event discovery based on their specific interests, owned vehicle list, and filters.

# Product Overview

## Description

MotoMoto is a motor vehicle-centric application that promotes community, education, and products for every car enthusiast. There is currently no outlet for car building, modification part compatibility warning, or interactive car build descriptions. MotoMoto offers all of this and gives users the chance to virtually build cars from the ground-up and become involved in community features such as: interactive vehicle build posts, meetup events, comments and ratings. Users will learn from other users on how they can start their own build and what parts to use with the ability to browse build lists, check for compatibility, and purchase affordable parts, all in one place.

## Use Cases

- Like, Comment, Share car builds
- Learn how to build a car based on interactive parts lists
- Gain inspiration from other users car builds
- Automatic check for car part compatibility
- Find quality parts at an affordable price
- Analyze parts prices and compare parts specs
- Explore in one place for car events based on location and interests

# Value

## What Users Need

MotoMoto creates a platform for every car enthusiast's needs, something not currently seen in the market. One possible competing website: Wheelwell. Wheelwell is similar in that you are able to look up parts that are compatible to your specific car make and model, however, it largely lacks the community thread we plan to implement into our system. MotoMoto will not be a part supplier website but an application to remove the stress of having to find a link to a compatible car part for the best prices. Compatibility will be tested using our flag system which will allow a user to determine whether parts within their list are incompatible with their build. MotoMoto allows users to build a list of modifications and reviews if they are compatible in relation to each other enabling a ground-up design of a vehicle.

Another item that sets us apart is our community where car enthusiasts are able to post their build with a parts list of items they used and an associated price graph of each individual part and the cost of the build as a whole. Optionally users can list tutorials of how exactly they pieced together each part and community members can like, comment, and share.

## Investment Opportunities

MotoMoto gives companies who make and sell car parts an amazing opportunity to advertise their products on an application with paying customers.

Our product has the most room to expand as it can be applied to not only cars but all motor vehicles (i.e. motorcycles, dirtbikes, etc). Allowing for more investment opportunities.

# Feature List

## Unique Features

1. **Car Builder** - Car builder feature allows a user to select OEM or Aftermarket parts to customize a registered vehicle or stock vehicle, consisting of all original manufacturer parts.
  - a. When the user enters the Car Builder, they are presented with two vehicle options to start with: register a vehicle they own or select a stock vehicle.
  - b. Users may begin customization on a modification page with their select vehicle where a list of all current parts will be listed.
    - i. Each item on the list will consist of main components of the vehicle
      - Sub-lists will be in a tab under a main component to select or exchange a specific part.
  - c. Once a user is completed with their car build or they would like to move onto a new type of car build, they can either save or discard the custom vehicle.
    - i. Users will be able to save as many builds as they want.
      - The car model and modified parts list will be saved to our database.
    - ii. Each car build will have a subtotal and breakdown of all current prices for each part so the user has a rough estimate on what the cost will be.
2. **Part Flagging** - Flags are indicators of modification compatibility and only appear as suggestions to the user in the Car Builder customizing session.
  - a. Flags are targeted onto modifications relative to the selected vehicle and have labels: Compatible and Non-Recommended.
    - i. The Compatible label means that a part, OEM or Aftermarket, is manufactured to be installed with a specific car.
    - ii. The Non-Recommended label means that a part is considered potentially incompatible which we do not recommend purchasing.
      - This label includes interactable user vehicle posts that contain the part, user reviews, and ratings.
  - b. Registered users can place new flags on parts that are incompatible.
    - i. Flags for a specific part will be accessible when a users posts a public car build with a brand specific part.
    - ii. Flags are verified by part assembly in vehicle posts, user reviews, and ratings.
  - c. When users input incompatible parts into their online build, they are notified with a warning that their part is not compatible with their car make/model.

# Feature List continued...

3. **Specialized Feed** - Our application has a page titled "Main Feed" which contains a collection of information/content, with some of it being tailored to the specific user.
  - a. When the user first opens the application, with no account, they are welcomed with a generalized "Main Feed".
    - i. The "Main Feed" consists of most upvoted posts by users of car modifications they have done.
  - b. The feed will be updated upon every post.
  - c. For users who have accounts and cars registered on their accounts. Their "Main Feed" will be filtered more towards posts of modifications done to cars similar, if not the same, as their cars.
  - d. The user post will contain the users: username, an image of the car/car modification, a button to upvote the post, and a title for the post. Users can then, if they want, select the post. Selecting the post will bring users to a separate page that contains the following:
    - i. At the top of the page will contain images of the car modification.
    - ii. The side of the page will contain a parts list and links to every part that the user used for their specific build.
    - iii. The middle section will contain comments and responses made by other users and the post creator.
    - iv. The bottom of the page will contain price graphs for parts.
  - e. Users can post their personal car builds with required information:
    - i. Picture(s) of the realized built car and/or under-the-hood.
      - Parts can be searched in-post to link the specific for other users to interact with.
    - ii. A specified list of parts added to the car which can be completed via car builder.
  - f. After posting car builds, users can view the activity their post has such as upvotes and comments.

# Feature List continued...

4. **Event Feed** - The "Event Feed" contains all events being hosted in a specified area. Users can select events to view details about them or to register to them to attend.
  - a. The Event Feed is a separate page from the Main Feed,
  - b. The feed will be updated two times a week.
  - c. Event posts will contain the host user's username, event title, location, time, and date.
    - i. Selecting the post will expand details and reveal a register button for which a logged in user can confirm or cancel their intention of attending an event.
  - d. When users access the Event Feed they will be prompted to input a zip code to discover events in that area.
    - i. Or the user can search for specific events by event title or event account.
  - e. Users may input filters such as:
    - i. Most popular based on upvotes, car type, new or old based on time of post, radial distance relative to the zip code, and date intervals.
      - Only upcoming events, or increasing order of time until the event starts, will be shown in the feed if no filters are set.
      - Radius filter limits the events shown. Minimum 5 mile distance and maximum distance can be set by the user.
  - f. Users can create events by registering an "Event Account".
    - i. Event Account users can only post events.
      - Each event post requires the following: event title, location, time, and date.
      - A target audience is recommended to include, but not required.
      - A picture can also be posted, but not required.
    - ii. An Event Account is limited to one event post per day.
  - g. After posting events, Event Account users can view their event's register activity.



# Feature List continued...

5. **Specific Part Price Analysis** - The Part Price Analysis feature will be a page giving detailed price points and a price graph of an identical part where comparisons are made from vendors who sell the same brand specific part.
  - a. Exact Parts can be located either on Main Feed, Car Builder, and parts lists.
    - i. All picture icons of a specific part will have the ability to be selected by the user to view price table comparison and price graph.
  - b. Price Table: Part price page will have a table where each vendors price is listed and compared so users can pick the link to where they'd like to buy from.
    - i. Every vendor will have selectable icons that will link a user to the part to purchase (links will be embedded with vendors icons).
      - Part prices will be sorted on the table from lowest to highest where linked icons will be available for users next to prices
    - ii. The table will have all our current vendors and the parts price.
      - Users can compare the brand specific part prices with our vendors while also being able to source the best price.
      - Part prices will be updated weekly ensuring price consistency.
  - c. Price Graph: Product price page will also contain a line graph that has all vendors and their price of the brand specific part over the past 6 months
    - i. Graph will illustrate price competition of our vendors and represent the price over time.
    - ii. Users will be able to hover over a vendors line on the graph to see price points of previous or current prices of the item itself.
      - Each graph will be updated simultaneously with the table.
6. **Notification System** - Allow individual users to follow each other to share their similar interests and events that they are attending.
  - a. Users will be asked if they want to subscribe to the event notification system during their account registration process.
    - i. Notification preferences can be changed at anytime in the account settings.
  - b. Users will receive weekly notifications for the events their followed users are attending.
    - i. Notifications will be sent out only if the event starting date happens after the notification sent out date
  - c. Notifications can be activated for upvotes to a user specific vehicle build.
  - d. Users also can activate price notifications based on whether an upvoted car part has gone down in price or is low in quantity from all available vendors.
    - i. Information presented by notification coincides with the data polled via information gathering API.

# Feature List continued...

## Alternative Features

1. **3D Modeling** - Allows account holding users to view a 3D version of a vehicle or part to get a realized visualization of possible builds.
  - a. Exact Parts can be located either on Main Feed, Car Builder, and parts lists.
  - b. All picture icons of a specific part will have the ability to be selected by the user to view the 3D rendering of the part.
    - i. All parts will be able to be scaled and can spin to get an idea of what the part(s) actually look like.
2. **Smart Part Recommendation** - This feature will notify a user if a co-existing part is missing in which an A.I. will generate possible substitutes to fill the role of the missing part in the car build.
  - a. Registered users can place new flags on parts that are incompatible
    - i. Flags for a specific part will be accessible when a users posts a public car build with a brand specific part.
  - b. There will exist two different types of flags for and modification flags.  
Co-Existing Labels: Compatible, Not Compatible
    - i. Indicates if a new part that is added on a specified vehicle build is missing a part that must coexist with the main part (i.e An added Rim that has different lug nuts than the original can have different size lug nuts).
    - ii. Our system will recommend new parts that complement the newly added part as all original manufactured parts are replaced.
  - c. Modification Flags are verified by part assembly in vehicle posts, user reviews, and ratings. Warning flags do not prevent users from selecting parts.
  - d. When users input incompatible parts into their online build, they are notified with a warning that their part is not compatible with their car make/model.

# Obstacles & Solutions

## Information Gathering

Car part data will be automatically imported to this application once a week from the following sources:

- Temporary source intended for preliminary tests:
  - Web Scraping
- Potential Stock/Registered Vehicle Information (awaiting tech approval):
  - CarMD API - <https://www.carmd.com/api/>
- Potential OEM & Aftermarket Part Information (awaiting tech approval):
  - Amazon Services LLC Associates Program - <https://affiliate-program.amazon.com/>
  - Autozone Affiliate Program - <https://www.autozone.com/lp/affiliate-program>
- Potential Aftermarket Part Information (awaiting tech approval)
  - Demon-tweeks Affiliate Program - <https://www.demon-tweeks.com/us/affiliates/>
  - Jegs Affiliate Marketing Program - <https://www.jegs.com/AffiliateMarketing>

# Vision

## Expanding the Product

MotoMoto has the potential to expand its core component of community into various vehicle communities. This can be done by supporting more vehicle types such as motorcycles, boats, and planes. MotoMoto would expand into these communities offering an extremely diverse platform that centralizes modification, building inquiries, advice, and parts lists. Consequently, the vehicle builder, event hosting system, and compatibility systems will improve thanks to large community interactivity allowing niche interests and parts to be more prevalent than before. MotoMoto will facilitate a larger network of vehicle enthusiasts to entice more companies to join the moto scene and advertise their products. MotoMoto will unify users of all types for the purpose of teaching, learning, and inspiring in a community.