Project Milestone 2

WATT2Buy

Prepared by
Team WATT2Buy (#112-3)

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Project Features List

- Create an Account: Users can create their own account to save their plans, manage orders, and view order history
- Login / Logout: User can login into or out of their account for security purposes
- Data Storage: System saves user data so that customer can login and continue from where they left off
- Take Survey: Users input their information and power needs to calculate plan options from which they can choose to buy systems and equipment
- Choose from customized plans: After receiving results from the survey, system utilizes user information and stored irradiance data to produce several customer specific plans from which they can choose
- Add Cart/ Checkout: After choosing the item(s) they need, the user can add them to their cart, update and delete items in the cart, apply discounts, and input information for payment and delivery.
- Crawl data from another website (API)/ From NREL data: User's customized plans will include getting location specific environmental details to tailor the order recommendations. This data will be used from APIs of the National Renewable Energy Laboratory.

Requirements

- Create an Account
    - As a recurring customer, I want to be able to have all my information and order history in one place to refer to in the future.
    - Functional: User must input prompted information in the correct format necessary for storage.
    - Non Functional: Navigation to this feature must be easily accessible from any point of the website. The page should appear clean and simple for ease of use. Clear directions must be present for each input requested. Feedback should be given if any errors occur with imputed data.
- Login/Logout
    - As a cautious customer, I want to be able to logout to ensure my information is not accessed by others. This could also mean high to medium security passwords are the only ones accepted.
    - Functional: Username must exist in the database. If not direct to "Create an account". The password needs to be hashed and validated with the associated hashed password in

the database. Information is only accessible to logged in customers and only their information is visible.
    - Non Functional: Navigation to this feature must be easily accessible from any point of the website. Login page should appear clean and simple for ease of use. After signout, a signout confirmation statement should appear.
- Data Storage
    - As an uncertain customer, I want to be able to save my personal information so that I can leave, come back, and decide later without having to start over.
    - Functional: Database must store login information as well as customer specific information from the survey (power consumption, location, roof availability), order history, and shipping and payment information. Database should be able to edit, replace, add, and remove information as directed by the user.
    - Non Functional: Customer specific data must be displayed in a clear, and easily readable format under the "my account" page. Edit options for each element should be clearly visible to the user.
- Survey
    - As a customer, I should be able to to give my requirements so that I can get the power options available to me, tailored to my location, power needs, and type of building.
    - Functional: The survey should be able to get all information pertaining to the customer's intended usage for a personalized power plan. This should primarily include the location and amount of power usage. This information will be used to calculate an estimated order and give options to the customer at the end of the survey.
    - Non Functional: Survey should appear clean, readable and simple. Choices should be well formatted with clear instructions. Tips on better conserving energy and water will be displayed on a side panel.
- Choose from Customized plans
    - As a customer, the plans available to me should include environmental conditions of my locality.
    - Functional: The weather conditions, sunlight availability and distance from water source data will be obtained for available locations to give correct estimates of power generated using different methods.
    - NonFunctional: Plan options will be presented in a very clear format that will make it easier to compare details (cost, space, coverage ,etc) between plans.
- Cart / Checkout
    - As a customer, I should be able to order from the design options provided in the survey. I should be able to choose what I want to implement, edit the order and see a final cost due, and then finally checkout with the products I have chosen.
    - Functional: The shopping cart will have all the products to be bought listed on one side of the page, where certain aspects of the order can be changed (for example: No.

of Wind turbines, efficiency of solar panel etc.). On the other side of the page should include a grand total of all the products and a checkout button to continue payment plans.

- Non Functional: Cart will be easy to navigate through with clear options of how to edit and manage orders. The checkout system ensures security of user information to ease customer worries..

Project Plan

I. Establish Site Skeleton

A. This feature development will be led by Hung.
B. Launch web address locally ready for collaborative work
    1. Includes all essential first steps to establish our "blank canvas" of a site
C. Implement skeleton structure as found in Wireframes
    1. Login/ Sign up Button (once logged in turns into "View My Account")
    2. Home Page
    3. About Us
    4. Optional: Contact Us/ Forum?
    5. "Artificial Assistant" (Survey)
    6. Suggested Power System Results (this will later save users survey results associated with their login account)
    7. All Products (where users can see all products without taking the survey)
    8. Checkout/ Cart

II. Create Account

A. This feature development will be led by Tiger.
B. Establish Database of users
    1. Include Username, password, saved survey results , current items in cart, order history
C. Create an Account
    1. Add buttons and link to homepage
    2. Hash login information and password to database
    3. Recognize if login has already been made

III. Login/Out

A. This feature development will be led by Tiger.
B. Save user information
    1. With returning customers we must save personal information
        a) Surveys taken saved
        b) Home data saved
        c) Location

        d) Wants/Needs of the user
        e) Purchase history
    C. Add button and link to homepage
    D. Find matching user and password from database
        1. With a securely hashed password table
        2. Requirements of password strength to protect user information and gain user trust
            a) Possible requirements: Capital letter, special characters, 8 + character, etc
    E. Recognize if user does not exists
        1. Offer to create an account for the new user
    F. Safely log the user out without losing data, but protecting privacy

IV. Survey & Context Research

- A. This feature development will be led by Vanessa and Simon.
- B. Research products
    1. Realistic products for commercial and residential to be interested in.
    2. Record unique, interesting characteristics and "selling points" to be put into the description of survey results.
        a) How long does it take for the emissions it took to build the device to save enough energy to reduce net CO2 emissions? (Solar is 4.5 yrs)
        b) Easy to install?
        c) etc.
    3. Price (installation, maintenance, time until profit)
    4. Find restrictions that we will base our decisions of "match making" from.
        a) Rooftop solar -> Not for houses with wood-shake roofing?
        b) Rooftop solar -> Not for North facing roofs?
        c) Wind turbines -> only for rural housing with plenty of property?
        d) Electric vehicles -> only for urban areas?
        e) Home-storage Battery-> only for those who consume a lot of electricity in the middle of the day?
        f) etc.
    5. Find some key ways that people and businesses can improve their sustainability and electricity bills without purchasing fancy tech.
        a) Live in urban area? -> bike/ e-bike
        b) Smart AC that turns off on timer
        c) LED lights & Smart Light bulbs
- C. Design Survey Concept Map
    1. Brainstorm questions that will prompt optimal results based on above research

2. Create map of what answers (or combinations of answers) will lead to what results

D. Implement Survey
   1. Create survey canvas with selectable buttons and prompting questions
   2. Log answers to survey in some kind of database
   3. Create script that follows survey concept map logic to optimize final product results
      a) Possibly will implement data from API for decision making as well
   4. Upload "artificial assistant" script to Survey tab of site
   5. Show results in Results tab of site
      a) Show descriptions with info from research
      b) Add to cart option for all results
         (1) Add item to cart but do not steer user away from the rest of the results
      c) Optional: Links to external websites where they can buy these products??
   6. Save Results to user registration data file in database. (Save Button)

V. Cart/ Checkout

A. This feature development will be led by Kunal.
B. Add and remove items from shopping cart
   1. Add buttons to do so
   2. Link buttons for execution
C. Save temporary (unpurchased) items in shopping cart to users file
D. Checkout button
   1. Goes to page that says "thanks for your purchase" and shows items
   2. Saves purchased items to users order history

VI. Fill-in Additional Tabs on Site

A. This feature development will be led by Kunal.
B. About Us ("Vision Statement" from Milestone 1)
C. Input all Projects to "products" tab
   1. Include descriptions of tech
D. View My Account
   1. Show user name
   2. View Current Cart (link to cart)
   3. Order History (show purchased tech)
   4. View Survey Results (link to results tab)
E. Home Page
   1. Display "WATT2Buy"
   2. "Use our Artificial Assistant for your sustainability decisions" as large button

        a) Link to survey tab
    3. Optional: merge homepage and About us tabs
F. Optional: Contact us
    1. Email widget?
    2. Just display our company email and “address”?
    3. Q&A section?

VII. Data Storage

A. This feature development will be led by Hung.
B. User Information
    1. Passwords with associated usernames
    2. House information
        a) Type of home
        b) How much energy they use
        c) How many cars they have/associated trade in value to go green
    3. Goals for home
        a) Make money from clean energy
        b) Reduce/eliminate their carbon footprint
    4. Survey Data
        a) What their individual goals are
        b) The plan to go green

VIII. Customized Plan

A. This feature development will be led by Vanessa.
B. Timeline
    1. User friendly graphics to depict pre set goals based on user wants and needs
    2. Adjust settings tab to redo any answers
    3. Pay off expectancy over time predictions
C. Saved Preferences
    1. Resources for more green appliances

IX. API Integration

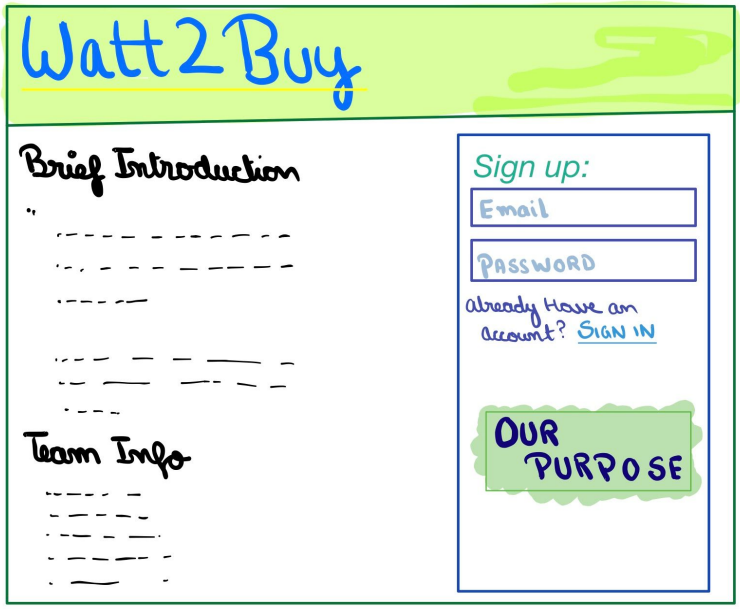
A. This feature development will be led by Simon.
B. NREL data
    1. Integrate NREL API to reduce out data consumption
    2. Allow users to see how productive each green energy is in their area
    3. Predict how efficient various forms would be for them
        a) Solar
        b) Wind
        c) Variable Metering
    4. Gain user trust through third reliable party

Sprints

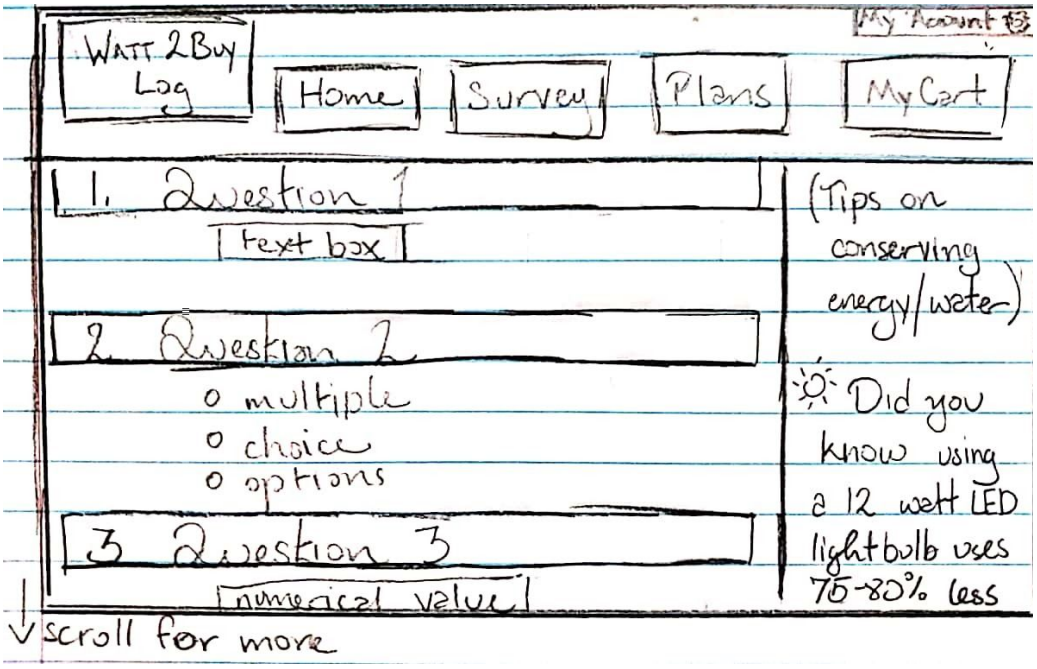
I. **September 25- October 2**
   A. Establish Site Skeleton
II. **October 2- October 9**
   A. Log in and Out(all data saved)
III. **October 9- October 16**
   A. Offer energy options on the site
IV. **October 16-October 23**
   A. Establish cart that can be viewed
   B. Compare Energy options within cart
V. **October 23- October 30**
   A. Be able to checkout
   B. (Possible API integration with PayPal)
VI. **October 30-November 6**
   A. Keep an Order History
VII. **November 6- November 13**
   A. Take Surveys on home energy use
   B. Take Surveys on personal goals for energy use
VIII. **November 13-November 20**
   A. Customize a plan for user
IX. **November 20- November 27**
   A. API Integration (For extra points)
X. **November 27- November 30**
   A. Fix final bugs
   B. Present working product

Wireframes

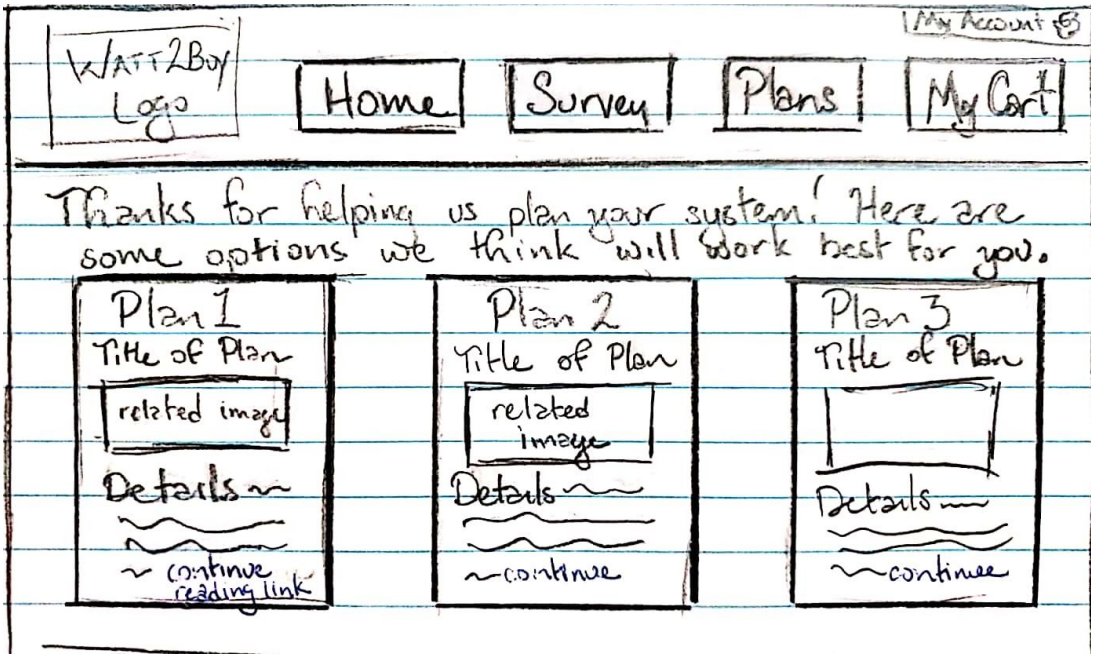
Home Page:



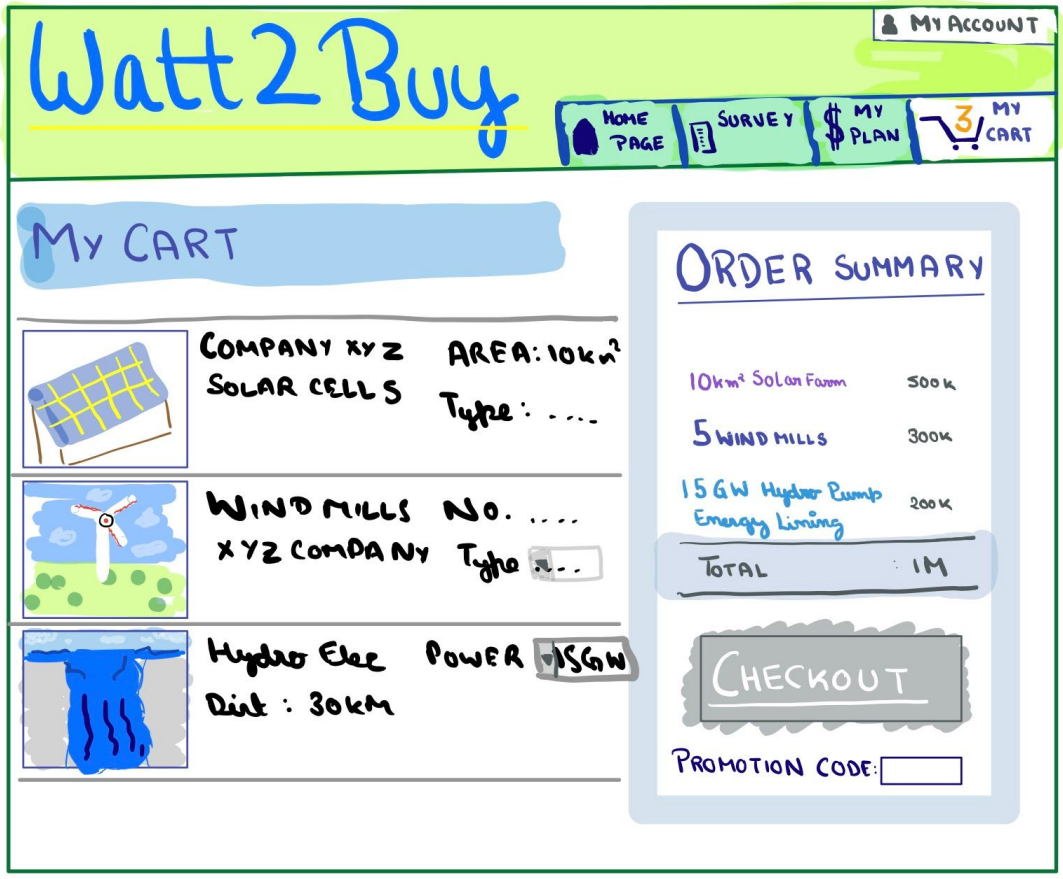
Survey Page:



Plan Page:



My Cart:



Initial Home Page

Individual Contributions

Hung Bui - Created the layout for home page of the website using HTML + CSS that is displayed under Initial Home Page
Simon Julien - Created the majority of the outline for the Project Plan in this document. Helped brainstorm the breakdown of project features and requirements. Reviewed final draft with the group before submission.
Tiger McDaniel - Updated the Jira project management board to set up this and future sprints easier. Layed out a sample sprint timeline with associated goals. Added a few features into the Project Plan.
Kunal Sinha - Worked on wireframes, and project requirements for this document.
Vanessa Van Scyoc Hernandez - Wrote out Project Features list. Worked on project requirements, wireframes, and overall editing.

Project Management Board

https://csci-3308-fa20-112-3.atlassian.net/secure/RapidBoard.jspa?rapidView=1