DateMeet Proposal

I. Abstract

Develop a web-client accessible application to assist in budget oriented travel planning. The product will target users with a budget and a need to make full travel arrangements including but not restricted to, transportation, lodging, and dining. Utilizing existing technology and available databases, the product will use an algorithm for determining the highest quality experience within a limited budget. Furthermore, the product will be easy to use, allowing all users to quickly plan and make arrangements through a graphical user interface.

II. Product Details/Life Cycle

1. Operational Concepts

a. Project Description

DateMeet is an application built to be run over the Internet in a web-client that assists users in planning a complete trip for the intent of meeting a person met online. The product will calculate and determine the best quality and value for the user and return the results. The user may then approve or make changes before finally accepting and purchasing the entire planned itinerary.

b. Uniqueness and Appeal

DateMeet is the first to combine the ability to plan out an entire trip from the moment the user leaves his or her door to when they return. DateMeet targets all income groups providing options from transportation to lodging all within a predetermined budget. It puts the user in control of planning, providing an easy tool to adjust and decide on an exact itinerary before purchasing.

c. Target Consumers

DateMeet will initially target consumers with a romantic interest and wish to meet people they have met over the Internet in person. DateMeet will facilitate this need by providing a full itinerary for the user based on a predefined budget. Target customers can eventually be expanded to include all users intending to travel anywhere in the world, by expanding the database and updating the way DateMeet calculates and determines itineraries.

d. Scope

DateMeet will be restricted to a limited target area of within the United States, this io to avoid issues with passports and international travel. DateMeet will also use a limited number of travel options to simplify the initial algorithm for calculating the itinerary. The scope can be expanded as the project evolves and grows, eventually extending beyond simply assisting in users wishing to meet after developing a romantic relationship online.

2. System Requirements

a. Essential Features
- DateMeet will utilize an algorithm that efficiently calculates the best travel plan within a given budget.

- DateMeet will allow the user to modify options, this in turn modifies the priorities of the algorithm directly when calculating the travel plan.
- DateMeet will allow modifications and changes to the suggested travel plan dynamically for instant feedback, even if it means making the trip more expensive or less efficient.
- DateMeet will check modifications to ensure they are valid and warn the user if there is any mistake.
- DateMeet will allow users to save their intended trip for future use.
- DateMeet will direct users to purchase their intended trip and provide the full travel plan for the user's records.

b. Example Layout

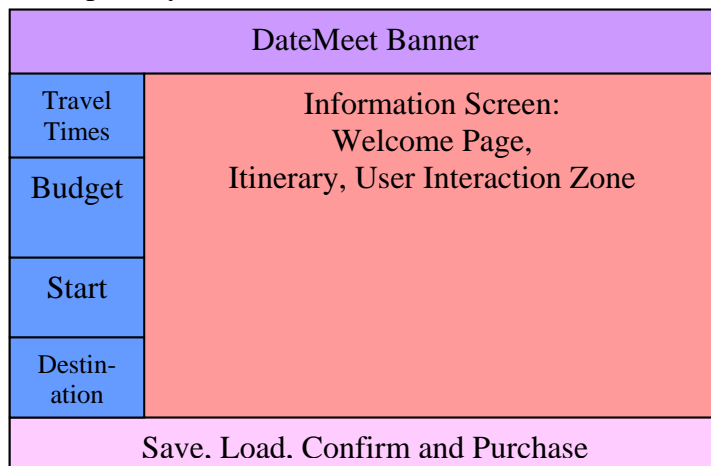| DateMeet Banner	
Travel Times	Information Screen: Welcome Page, Itinerary, User Interaction Zone
Budget	
Start	
Destin-ation	
Save. Load. Confirm and Purchase	

Figure 1. Example Layout

The main page will provide the user with a simple interface which allows the user to input their start and final destination. In addition, the main page takes a budget range, and allows the user to check off various options they would like excluded from the searching algorithm (See Figure 1). When the user is satisfied with all the information, the user initializes the algorithm by clicking an execute button will be returned a full itinerary.

This page will allow the user to make changes by selecting any element in the itinerary and modifying it. The user can also choose to select the next best option in the algorithm, as well as add additional stops and items to the itinerary. If the user inputs an invalid the element it will be color-coded red and the user will be informed of the suspected error.

When everything is to the user's specifications, the user will click another button which finalizes all the changes and provides the user with a final overview of their selection. When everything is in order, the user will be directed to a third party purchasing system exiting the DateMeet system.

3. Systems and Software Architecture
   a. Implementation

DateMeet will employ existing databases that contain information such as airplane flights, rental cars, trains, buses, taxis, hotels, restaurants, and maps to calculate the best trip given a restricted budget.
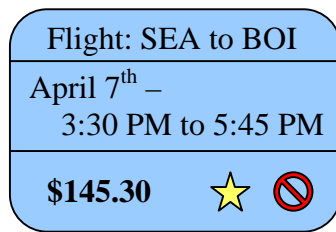

Figure 2. Example Element

All of these databases exist in some form already on the Internet; DateMeet will query these existing databases for information to complete the necessary data for the user (See Figure 2).

These databases will most likely be in various forms, so parsing will have to be employed to extract the necessary information. Another possibility is to create partnerships between these sites, in return for generating more revenue for them by directing users to their service.

The algorithm itself will be based on the information the user provides, such as owning a car, willingness to drive, walk, lodgings accommodated for, etc. All of these factors are used to modify priorities in the main algorithm. All this information will be passed from the client machine to the server where it is calculated.

There are a few options in the implementation of the modification feature. Users can send information back to the server each time and update, or a transaction system can be built that checks periodically, reducing server load and leaving a great deal of error checking on the client side machine, the result of this is more complicated code.

b. Tools

Since DateMeet is a complicated system, several tools will have to be employed for front-end and backend. The GUI the user sees is best handled within a web browser and written in HTML and JavaScript. Though these choices are not necessarily the fastest, they are widely supported and should function effectively on all client machines. For the backend processing, any language that provides support to generate HTML, talk to a database can be employed, such as PERL, Java, Ruby on Rails, and other options.

4. Lifecycle Plan

a. Anticipated Schedule

The following is a layout of the anticipated schedule of the project.

WK1, Day 3: Uniform structure determined for all database elements the algorithm will use to calculate.

WK1, Day 5: Scope fully decided, including range of project: city, state, country, etc. Scope fully decided for options: bus, train, taxi, hotels, restaurants, etc.
WK1, Day 7: General layout of front page prototyped.
WK2, Day 3: Front page completed, no functionality.
WK2, Day 7: Basic algorithm completed, finds lowest priced path.
WK3, Day 3: (Release 1) Front page sends data to server, processed by basic algorithm.
WK3, Day 7: Morphing algorithm, finds lowest priced path with excluded elements.
WK4, Day 5: (Release 2) Itinerary displayed, alternate choices allowed, saving allowed.
WK5, Day 1: User modifications included such as basic commands (Delete, Add).
WK5, Day 4: (Release 3) User modifications error checked, purchase button visible.
WK6, Day 3: Redirection and purchasing complete.
WK7, Day 1: (Release 4) Frontpage and Itinerary modified to be graphically appealing
WK8, Day 1: Final Testing
WK8, Day 5: (Final Release) All features complete.

b. Major Tasks and Milestones
- Database access and parsing successful
- Algorithm developed and operates as expected
- User submitted data is passed to server
- Calculated information is returned back to user
- Appealing display.

c. Resource Allocation
For the first week, up until the scope is fully decided the majority of developers, seventy-five percent, should be working on determining an acceptable format for database entries. The remaining developers should work on creating a presentable front page for the user (See Figure 1). Once the format is decided, two new developers should work on the front end, leaving four to work on the database access and parsing, and two to begin work on the algorithm itself.

Once database parsing is complete, three developers should work on the front end, leaving the remaining to work on the algorithm itself, once the front page is complete, two developers should be shifted over to the algorithm team to complete the evolving algorithm while the remaining developer should work on converting the returned information into HTML for the user. Once the algorithm is fully completed, the focus should switch to the front end, leaving only half the developers working on additional testing, and working on allowing the user to make modifications via Javascript.

Once all the primary features are completed, all developers should be shifted over to work on improving the general look of the product before the final release.

5. Feasibility Rationale
a. Solvency
DateMeet relies on existing systems that have been thoroughly tested and maintained through 3rd parties, this additional level of implementation provides the backbone of

the information collected by DateMeet and helps ensure the actual realization of the product. In addition, the actual algorithm construction is based on existing algorithms for finding shortest path, given a specific parameter, this can be employed to find lowest cost or lowest time, or varying combinations based on the user's specifications. Finally, the front end is web based, which is also based on well-developed technologies such as JavaScript and well-documented sources can provide the necessary information to maintain compliance across different systems.

b. Risks and Disadvantages

One of the most serious risks involved with DateMeet is the compliancy of 3rd party systems, because DateMeet relies on these systems, changes to them can cause ripple effects that cripple the entire DateMeet system. Possible changes might be in the way the information is transmitted, or the availability of information at these 3rd party sites. A possible solution is to develop in house databases and software that talks with providers of services such as airlines, buses, and hotels. However, this would involve a great deal more coding and would be impractical at this point.

Another risk is unforeseen complications with the algorithm, although shortest path algorithms are well established, there may be complications involved with including multiple values such as time, money, distance, and other parameters might be added to allow the user to generate paths for. However, this can be resolved by scaling back initially, allowing the user only a small subset of possible paths and choices before expanding the features to allow beyond the initial set. Furthermore, customers can always request additional features to be added so it will not be detrimental to the product itself.

c. Assumptions

This product assumes that existing 3rd party sites are accessible, their information comprehendible, and can be processed for additional purposes. Since DateMeet relies heavily on these sites for gathering the core of its information, without them it would be too difficult to provide the features outlined for DateMeet.

d. Out-of-Scope Features and Reasoning

Many features not included because of the limited development time frame. It would be impractical to develop a large-scale version, such as an international version, of DateMeet with the full compliment of features because of the scope it involves. There are hundreds of airlines, thousands of hotels, and millions of places people can be. If a product is required to handle such a scale, it would be nearly impossible to provide the same level of service to all customers.

III. Conclusion

DateMeet is an innovative new product, which draws on the natural urge for people to meet, be social, and seek happiness. It provides the crucial planning from getting out one's home to somewhere new. In today's world of ever growing technology and increasing options, by providing a clear and simple option for customers would bode well for the product as a whole. It is effective and simple by basing much of the product on existing services, furthermore it does not damage existing services because customers will still utilize the existing services for the final step of their journey. So remember, DateMeet is the search engine to happiness.