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## **Technical Requirements**

Technical Specifications document (2%) Based on the feedback you receive on your requirements document, you will then need to write up technical specifications. You will submit both your requirements document and your technical specifications document since you may have had to modify your requirements based on provided feedback. Make sure you clearly delineate anything that you added, deleted, or changed in your specifications. This can be accomplished using Track Changes in Microsoft Word (or a similar feature in other word processors)

### **Technical Requirements:**

#### **Web Interface / GUI (30 hours total):**

- Core Technologies: CSS, HTML5, Javascript (potentially ReactJs)
- The project will be composed of these core components:
  - **Central Listing Homepage(8 hours)**, which consists of:
    - A search bar to find products with certain keywords
    - Tile listings including pictures of the good being sold, price, location of seller, and other relevant information
    - A login button, that turns into a sign out button once logged in
    - An account button that refers the user to their account settings
    - A saved items, (only available to signed in users) that stores a list of items that the user may have wanted to save for later
  - **A Login Page (8 hours)**, which consists of:
    - A username entry field,
    - A password entry field
    - Usernames will be verified to see if they are "@usc.edu" emails
    - Users can be authenticated via google web sign in oauth
  - **A Sign Up Page (8 hours)**, which consists of:
    - A users name (fName and lName),
    - A users zip code,
    - USC Email
    - Phone number

- Since the sign in is done through Google Login, it does not need a reset password function
- When you click on a tile listing on the central Listing Homepage, it will take you to a **Listing Page (8 hours)**, which consists of:
  - Pictures of the product for sale
  - Title of the listing
  - Price of the listing
  - Description of the product
  - Location (ie. zip code / potentially google maps)
  - Share and Save options
  - Option to chat with the seller
- A **Profile (8 hours)** Page
  - Consists of information about the user (their name, email address, option to change password, location, etc.)
  - Users will have ratings, purchase, and selling history

#### **Multi-threaded Code (20 hours total):**

- Adding/removing live listings (**8 hours**)
  - Users are able to add item listings and remove them simultaneously
- Updates price in real time (**6 hours**)
- Accepting new bids in real time (**6 hours**)

#### **Networking (24 hours total):**

- Our website will have a bidding feature that allows users interested in purchasing a listed product to bid live (**8 hours**)
- Implements the Google Maps API to decide on a location for the transaction
- Users can chat with each other if they had questions about the product (**8 hours**)
- Connect web server to database that contains information on listings, and user profiles (**8 hours**)

#### **Database (16 hour):**

- Design the database (**8 hours**)
- Implement MongoDB database (**8 hours**)
- Sample Implementation of MongoDB:

```
"Listing": {
  "listId": "jdf29dkf38sikd",
  "price": 100,
  "owner": {
    "userId": "sldkfjlsjdf"
  },
  "description": "something for sale",
  "images": [
    {"image object 1"},
  ]
}
```

```
        {"image object 2"}
    ],
    "keywords": [
        "keyword1",
        "keyword2",
        "keyword3"
    ],
    "categoryId": "6000",
    "location": "zip code 90089",
    "title": "something",
    "timePosted": "datetime",
    "condition": "used",
    "purchaseDate": "N/A",
    "views": 100
}
}
```

```
"User":{
    "userId": "sldkfjlksjdf",
    "uscEmail": "example.usc.edu",
    "phoneNumber": "000-000-0000",
    "name": {
        "fName": "first",
        "lName": "last"
    },
    "listOfListings": [
        {"List Object"},
        {"List Object"}
    ],
    "listOfReviews": [
        {"Review one"},
        {"Review two"}
    ],
    "savedItems": [
        {"List Object"},
        {"List Object"}
    ],
    "zipCode": "00000"
}
}
```

**Specific Features (4 hours):**

- Any user can view items, but must login to bid on items or contact sellers **(4 hours)**

**Possible API's:**

- Google Maps API (buyer/seller meetup location)
- Twilio API (chatting between users)