1. **Team members**:
   * Cameron L’Ecuyer – Class ID: 17 (Team Leader)
   * Sneha Mishra – Class ID: 21
   * Navya Pillala – Class ID: 26
   * Ruthvic Punyamurtula – Class ID: 30
2. **Project Goal**:

**Motivation**:

To develop an augmented reality application to assist users when shopping

**Significance**:

Our application will be different from others in that in will include the ability to enter augmented reality mode or allow the user to use it as a standard application. It will also be able to assist the user with food and beverage purchases, and with clothing and furniture purchasing.

**Objectives**:

* + - Develop an application that can assist a user when they are shopping
    - Allow the user to use the application in a standard assist mode, or in an augmented reality assist mode
    - Integrate social media into the application for suggestions from the user’s friends and followers
    - Integrate gamification features into the application to increase user involvement and retention
    - Integrate machine learning into the software for image recognition, speech recognition, and intelligent searching

**System Features**:

* + - Developed for the Android operating system, and if time permits, the Apple iOS operating system
    - Clean and friendly UI
    - Integrated unobtrusive social media features
    - Integrated with virtual/augmented reality features to give the user virtual access to items, with minimal effort
      1. These features may allow the user to change the color of objects and/or replace objects with objects found through searching
      2. Options for this include: Vuforia, ARToolKit, MaxST, or other depending on our needs and budget
    - Integrated searching consumer level stores using available APIs
      1. Searching through retail stores is the main backbone of the application, and will allow users to find similar objects to what they select and learn the location and price of the options they want to buy
      2. Available APIs: Amazon ItemSearch API, Target Developer API, Walmart open API, and others to expand our area of search
    - Integrated image recognition to allow for more options when searching, these features may be provided by IBM’s Watson or another service if the need arises
    - Integrate barcode scanning to find items quickly and easily
    - Access to Speech-to-Text features for user’s who have trouble with a smart phone’s keyboard, poor eyesight, or who do not feel like typing
      1. Options for this include: Google’s speech recognition software, IBM’s Watson, or other APIs if needed
    - Gamification features and options to keep the user returning to the application, and provide the user with rewards
    - Integrate deals/coupons into the search mechanism if time allows

1. **Related Work**:
   * TheMine: Furniture placement app
   * IKEA place: Furniture placement app
   * Amazon Shopping: Furniture placement (iOS), product recognition using camera/barcode, and product search
2. **Bibliography**:
   * TheMine app: https://itunes.apple.com/us/app/envisioned/id1293488677?ls=1&mt=8
   * IKEA place app: https://itunes.apple.com/us/app/ikea-place/id1279244498?mt=8
   * Amazon Shopping app: https://play.google.com/store/apps/details?id=com.amazon.mShop.android.shopping&hl=en
   * IBM Watson: https://www.ibm.com/watson/products-services/
   * Vuforia: https://library.vuforia.com/api
   * ARToolKit: https://www.artoolkit.org/documentation/
   * MaxST: https://developer.maxst.com/
   * Amazon API: https://docs.aws.amazon.com/AWSECommerceService/latest/DG/Welcome.html
   * Target API: https://developer.target.com/
   * Walmart API: https://developer.walmartlabs.com/
   * Google Speech-to-Text: https://weston.ruter.net/2009/12/12/google-tts/