**Review Based recommendation engine using R**

**Aim:** To find the recommendation products for the user based on his ratings to the products.

**Introduction:** Retail recommendation play a vital role in the company’s growth especially in the online retail market. It helps in Identifying the target customers and to recommend his likely products which makes user make additional purchases and saves his lot of time surfing in the internet for his desired product.

**Description:** I have built a recommendation engine in R, which finds the user underlying interest in his purchased or rated products and recommends similar products to him. To find the user interest I have used the reviews to products that users have given. Then we find the user underlying interest by extracting top phrases in the reviews and then mapping to the user. I used dcast function from the data.table package. Then we find the user liking to each product and by ordering those products decreasing order for his match of his keywords and to the products keywords in the reviews, I recommend the products to that particular user. I made simple UI using shiny package to visualize in tabular form. I also mentioned the matching percentage to each product recommended.

**Algorithm:**

**Step1: Data Prepossessing:**

I processed the amazon reviews data taken from the source mentioned below. I extracted reviews columns separately and applied all my data cleaning functions. I removed NA’s, punctuation, special characters, symbols, stop words and some special characters.

**Step2: User Interest Matrix:**

I made user interest matrix by calculating the term document matrix form the reviews column and related with the users ratings. I assumed that user is interested in the product if he makes a rating of greater then three or he is not interested that particular type of products.

**Step3: Result Matrix:**

By using the dcast function I made result matrix that how much a user likes for a particular type of key word in the reviews column. This gives the weight-age of particular user liking a particular keyword.

**Step4: Recommendation function:**

By using the User Interest matrix and result matrix we find top most matched products with his own collection of interest form the keyword in the reviews. Then we recommend him the top most five products. I included the percentage of matching of user interest with his recommended products.

**Step5: Simple UI**

It is simple and readable if we visualize these products separately in an UI. I made this using the shiny package.

**Conclusion:**

We find the top most user likely products based his reviews to the products and recommend him to purchase.