VibeFit

THEME: Health/Fitness

In a diverse and labour-intensive country like India, following classes of people exist with their percentage in the population:

1. Deprived Class: These are the 56% of the country (or more), who under the new definitions of the government (Rs. 62 in expenses per day in cities, Rs. 50 in villages) are considered in poverty. In US dollars, that is surviving on spending **$1 per day.** In this category, it was made an unfortunate, but conceptually necessary move of lumping together the urban poor and villagers, although their lives can be extremely different. Upon majority Indians' backs, India has been built, fed, and housed.
2. Aspirers (29.7%): Aspiring households are households that earn between₹5 lakh and ₹20 lakh per annum. Roti, kapda and makaan have historically represented the largest expenditure for Indians. Over the past few years, however, there have been two notable changes in consumer spending patterns. The first is a rise in the total amount spent on education, leisure and telecommunications, driven by both greater demands, as well a change on the supply side. The second is the shift towards better, higher-priced sub-segments in the same historical categories ranging from food to consumer durables. In pursuit for the best living conditions and higher standards of living, the general mass has neglected over their health and fitness which majorly includes the aspiring middle class. When 3 square meals a day has been fulfilled, the main motivation to earn money is ego and personal ambition.
3. Middle Class (13%): A family of 4 which can rent a 2-bedroom apartment in an average area of city. Buy and maintain a car such as Hyundai i10. Watch a movie in multiplex once a month and eat out at average restaurants. Dreams to own an apartment but cannot. They go for vacation once a year to Goa etc. They can buy branded clothes but not expensive electronics such as big tv or expensive cell phones. Can send kids to private schools but cannot afford private engineering colleges in India. They manage to save for a decent retirement and kids wedding.
4. Rich Class (1.3%): This class generally owns a house in a posh area, not an apartment. They have invested in real estate in multiple properties.

They can buy and afford an entry level luxury car which can cost approximately 20 lacs on road. Also have an extra hatchback/sedan for wife or kids. Eat at best restaurants of the city and visit the best pubs. Can go for international holidays once in 2 years or luxury domestic holidays each year. They can send kids for higher studies to USA, UK etc. They save enough for the big Indian wedding and a lavish retirement.

According to World Bank's statistics, the average life expectancy of an Indian is 68.56 years. The growth rate in terms of life expectancy is very less when we compare this with other developing nations because over the past 50 years, average life expectancy at birth has increased globally by almost 20 years, from 46.5 years in 1950-1955 to 65.2 years in 2002. This represents a global average increase in life expectancy of 4 months per year across this period. On average, the gain in life expectancy was 9 years in developed countries (including Australia, European countries, Japan, New Zealand and North America), 17 years in the high-mortality developing countries (with high child and adult mortality levels), including most African countries and poorer countries in Asia, the Eastern Mediterranean Region and Latin America; and 26 years in the low-mortality developing countries. But half of the world's population – like at India and China – made only little progress. This shows that resources are not that significant factor because India is not a capital-intensive country. Rather, the people of this country just need to put a conscious effort on improving their lifestyle which can, in turn, increase their life expectancy.

This is where VibeFit comes in. It's a profile-based web cum cross platform mobile app, i.e., it is supported by both Android and iOS devices. Our web app is designed mainly for the Govt. of India for keeping a track on the life expectancy and overall health so that they can make and implement policies based on that data. This web app is made using HTML, CSS, JavaScript with Node.JS in the backend. We have created a database using MySQL for storing login credentials and data of activity information collected by the fitness tracker which will be used for prediction of life expectancy by the model trained on an Artificial Neural Network.

We have applied Artificial Neural Networks on an organic dataset compiled over different demographics and working days to analyse and set the average life expectancy of a person living in India. Day to day activities will show the variation in real time. This data will be collected by the user's wearable fitness tracker which will be unique to every person based on internal or external

factors which may include the environment and/or person's physical fitness. Image processing using OpenCV Would be applied on food items to find out users calorie intake which will be integrated by Social Media Applications on Login and Sign up.

With the use of TensorFlow Lite, the model would be easily available on a mobile device for prediction as web-based portal has become cliché by the hands of youngsters and young adults. Our system also consists of a mobile app that helps that will give the users a personalized record and predicted lifespan based on their lifestyle. A TensorFlow model in the app itself predicts the life expectancy of the person based on calorie intake, sleeping habits recorded from mobile usage, physical activity, working hours involved and other data gathered from the Fitbit. The app also compares your lifestyle to a lifestyle of higher life expectancy and also the national average. The user can also give manual inputs such as chronic diseases and medications taken. This data collected from individual users form the basis for the cumulative data shown on the government portal.

Future Scope: Some future scopes of VibeFit are as follows:

1. On device integration of life expectancy on smart wearables: Users will be able to get an estimation of their life expectancy on their wrist-bands.

2. Govt integration with the data to provide better healthcare and gym facilities: Using the data collected by our model, Government can frame their policies suited best for the health care of their people.

3. Profile sharing with emergency contacts: In case of any emergency, users can send a distress call along with their location to the contacts listed under emergency contacts.

4. Release of open source SDK to develop as per community: Release of SDK for open source development of the app for future modifications by the community and easy deployment on any device.

5. Bridging the gap between doctor and population: This can make being healthy a lot more hassle free because now the user knows exactly what they have to do to live a longer life and can coordinate with their doctors accordingly, thus making the job of both parties a lot easier than ever!