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| **1** | |  | **INTRODUCTION** | |  |  |  |
|  | |  | * 1. Overview   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  A typical Regression Machine Learning project leverages historical data to predict insights into the future. This problem statement is aimed at predicting Life Expectancy rate of a country given various features.  Life expectancy is a statistical measure of the average time a human being is expected to live, Life expectancy depends on various factors: Regional variations, Economic Circumstances, Sex Differences, Mental Illnesses, Physical Illnesses, Education, Year of their birth and other demographic factors. This problem statement provides a way to predict average life expectancy of people living in a country when various factors such as year, GDP, education, alcohol intake of people in the country, expenditure on healthcare system and some specific disease related deaths that happened in the country are given. | |  |  |  |
|  | |  | * 1. Purpose   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  The purpose of this project is gain hands-on industrial experience through the smartinternz platform. | |  |  |  |
| **2** | |  | **LITERATURE SURVEY** | |  |  |  |
|  | |  | 2.1 Existing problem:  Predicting life expectancy of a population in a certain country which depends on a large number  Of factors like BMI, adult mortality, GDP etc. | | |  |  |
|  | |  | 2.2 Proposed solution:  Using regression model in machine learning to predict life expectancy by providing the dataset  From WHO which consists of several factors on which the expectancy depends on. | | |  |  |
|  | |  | 1. **THEORITICAL ANALYSIS** | |  |  |  |
|  | |  | 3.1 Block diagram  Load the dataset  Open an auto-Ai experiment  Choose the coumn to predict | |  |  |  |
|  | |  | Deploy the model, predict the expectancy and display the result in the UI.  Choose the accurate model for prediction  Run the auto-Ai experiment   * 1. Hardware / Software designing  1. Create IBM cloud account 2. Create Watson studio service 3. Add life expectancy prediction project 4. Add Auto\_Ai experiment 5. Upload the data set. 6. Choose the column to be predicted 7. The experiment auto chooses the accurate model for prediction 8. Deploy that model 9. Use the scoring URL to predict the results on an UI. | | |  |  |
| **4** | |  | **EXPERIMENTAL INVESTIGATIONS:** | | |  |  |
|  | |  | * There seem to be a positive correlation between The Percentage of Healthcare Expenditure, Schooling, GDP and BMI and Life Expectancy. * There is a negative one between Adult Mortality, AIDS and Life Expectancy,there does not seem to have any correlation between Alcohol, under 5 years - old deaths and Life Expectancy. * There is a very high correlation between thinness of 5-9 year-old and that of 1-19 year-old. Also between population and infant deaths, under 5 deaths, another is between schooling and income composition of resources. * Life expectancy and Adult Mortality are very highly negatively correlated.   **FLOWCHART** | |  |  |  |
| **6** | |  | **RESULT** |  |  |  |  |
| **7** | |  | **Predicted life expectancy with the given data.**    **ADVANTAGES & DISADVANTAGES** | | |  |  |
| **8** | |  | * **Predicted with 97% accuracy** * **Prediction happens even if test data is not given**   **APPLICATIONS** | |  |  |  |
|  | |  | * **Real time prediction.** * **User-friendly UI can be used by anyone.**   **CONCLUSION**  The project relies on the accuracy of data. The Global Health Observatory (GHO) data repository under the World Health Organization (WHO) keeps track of the health status as well as many other related factors for all countries the data-sets are made available to the public for the purpose of health data analysis. The data-set related to life expectancy, health factors for 193 countries have been collected from the same WHO data repository website and its corresponding economic data was collected from the United Nations website. Among all categories of health-related factors, only those critical factors were chosen which are more representative | |  |  |  |
| **10** | |  | **FUTURE SCOPE** | | **`** |  |  |
| **11** | |  | * **Model accuracy can be improved even more by using complex algorithms.** * **Data set can include even more columns for more accurate prediction**   **BIBILOGRAPHY** | |  |  |  |
|  | |  | * **IBM data science with python** * **Node-red building bots.**   **APPENDIX** | |  |  |  |
|  |  | | 1. <https://github.com/SmartPracticeschool/llSPS-INT-2984-Predicting-Life-Expectancy-using-Machine-Learning/blob/master/life%20expectancy%20prediction%20notebook.ipynb> | |  |  |  |
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