High Level Design (HLD)

ACIP (Adult Census Income Prediction) based Surveillance

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Document Version Control

Data Issued	Version	Description	Author
25 Feb 2022	**1**	**Initial HLD – V1.0**	**Ekram Shethil**
04 Mar 2022	**2**	**Update KPI – V1.1**	**Ekram Shethil**

Contents

Abstract

Adult Census Income Prediction (ACIP) talked about income. What kind of income do people of any country have and who is earning more income as a boy or a girl? People of any age are involved in higher income. People of any profession have higher income

1. Introduction

1.1 Why this High-Level Design Document?

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

. Present all of the design aspect and define them in detail

. Describe the user interface being implemented

. Describe the hardware and software interfaces

. Describe the performance requirements

. Include design features and the architecture of the project

. List and describe the non-functional attributes like:

- Security
- Reliability
- Maintainability
- Portability
- Reusability
- Application compatibility
- Resource utilization
- Serviceability

1.2 Scope

The HLD documentation presents the structure of the system, such as the database architecture, application, application architecture (layers), application flow (Navigation), and technology architecture.

The HLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system.

1.3 Definitions

Term	Description
ACIP	Adult Census Income Prediction
Database	Collection of all the information monitored by this system
IDE	Integrated Development Environment

2. General Description

2.1 Product Perspective

The ACIP based Income rang system is a machine learning technology based outcome detection.

Model which will help us to detect salary range people.

2.2 Problem Statement

To create an machine learning solution for salary range predict or ACIP and to implement the following use cases:

- To detect the salary people of any age
- To detect the workclass people
- To detect the fnlwgt people
- To detect the education people
- To detect the marital-status person
- To detect the occupation person
- To detect the gander type person
- To detect the country related people

2.3 PROPOSED SOLUTION

The solution proposed here is an ACIP (Adult Census Income Prediction) based surveillance (Adult Census Income Prediction) can be implement to perform above mention use cases. In fast case, if ACIP detect any age type people salary range, if ACIP detect any workclass type people salary range, if ACIP detect any fnlwgt type people salary range, if ACIP detect any educational student and teachers type people salary range, if ACIP detect any marital-status type people salary range, if ACIP detect any occupational person salary range, if ACIP detect gander type people salary range, if ACIP detect country wised people salary range prediction for swift help.

2.4 Further Improvements

ACIP can be added with more country people detect any gander and age type people salary range. ACIP can also be synchronize with ACIP for batter and fast response or action, with help of ACIP synchronize it can be implement in the domain like banking and insurance.

2.5 Technical Requirements

This document addresses the requirements for detecting the salary in country wised people and this salary with related county, age , sex, education, marital-status and occupation.

- ACIP should be who many type people salary range
- These ACIP should include machine leaning algorithm’s and check this dataset accuracy.

These can be good result but ACIP totally imbalance dataset.

2.6 Data Requirements

Data requirement completely depend on our problem statement.

- We need dataset that is balanced data must be.
- We require 50% and 50% dataset.
- We require dataset not null values and clean data.
- Original, fulfill and given details type dataset we accept.

2.7 Tools Used

Python programming language and framework such as NumPy, Pandas, Matplotlibe, Seaborn and Scikit-learn are used to build the whole model.

- Google Colaboratory is used as IDE.
- For Data Analysis and Data Cleaning using NumPy and Pandas.
- For Visualization of the plots, Matplotlib and Seaborn are used.
- Model building and Model Train and test data split and ML Algorithm's using Sckilt-Learn.

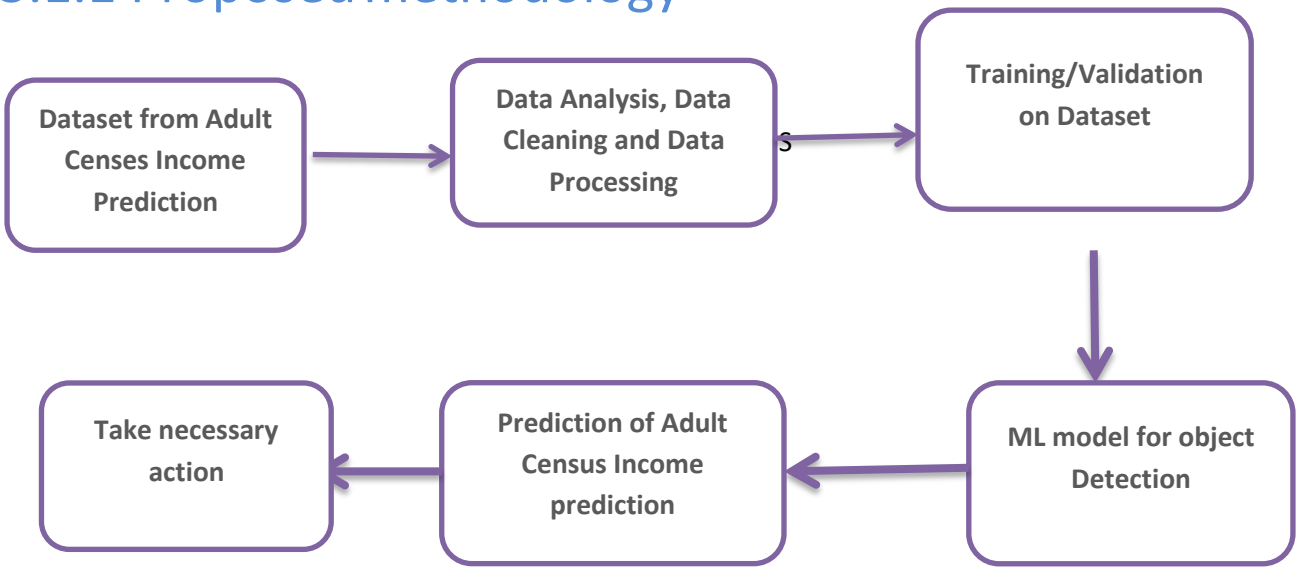
3. Design Details

3.1 Process Flow

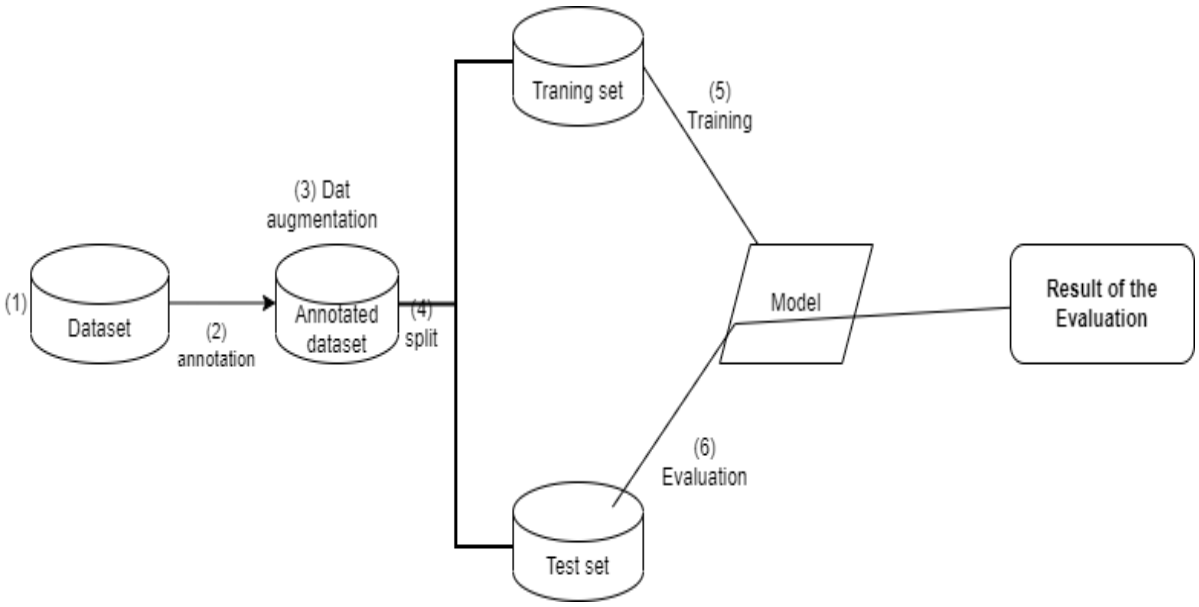
For identifying the different type people range of salary, I will use a machine learning base model.

Below is the process flow diagram is as shown below.

3.1.1 Proposed methodology



3.1.2 Model Training and Evaluation



3.2 Error Handling

Should errors be encountered, an explanation will be displayed as to what went wrong? An error will be defined as anything that falls outside the normal and intended usage.

4. Performance

The ACIP based Adult Census Income Prediction solution is used for detection of adult type person income rate. Income means understanding the economy of a country. How will his family go and what benefits are the people of the family getting?

4.1 Reusability

The code written and the components used should have the ability to be reused with no problems.

4.2 Application Compatibility

The different components for this project will be using Python as an interface between them. Each component will have its own task to perform, and it is the job of the Python to ensure proper transfer of information.

4.3 Resource Utilization

When any task is performed, it will likely use all the processing power available until that function is finished.

4.4 Deployment

5. Dashboards

The dashboard will be implemented to display and indicate certain KPIs and relevant indicators for the unveiled problems that if not addressed in time could clause catastrophes if the unimaginable impact.

As and when, the system starts to capture the historical/periodic data for a user, the dashboards will be included to display charts over time with progress on various indicators or factors.

5.1 KPIs (Key Performance Indicators)

Key indicators display the summary of the Adult Census Income Prediction –

1. Accuracy of model prediction
2. Age and Gander related Income Prediction
3. Occupation related people income prediction
4. Country wised people Income prediction

6. Conclusion

The ACIP (Adult Census Income Prediction) will detect people Income source data used to train my algorithm, so I can identify how people how many income. So I can have a pleasant age , gander, occupation and country wised people income rete.

7. Reference

1. https://www.kaggle.com/overload10/adult-census-dataset