

# Student Career and Personality Prediction System

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**Abstract:** *The Student Career & Personality Prediction System” is a mobile application. It is very useful for those students who are confuse regarding to their career. When one decides a career, this choice can shape one’s life entirely. Recently, more and more people have begun to re-evaluate their career decisions and change careers at a later stage in life. This can be prevented by proper counseling of young teenagers before they begin their graduate studies. To solve this problem, data of existing students is used, where the personalities, aptitude and student general information is mapped with their careers. The created Intuitive Career System uses a variety of questions that students have to answer to test their aptitude as well as students background questions. The student’s personalities are determined by using aptitude test. The result is declared after both the test is submitted. This is a realistic approach to counseling since it takes into account both personality and aptitude, which are responsible for career decisions.*

**Keywords:** Career Counseling, Predictive Decision, Professional Career Prediction Method, Intuitive Career System.

## I. INTRODUCTION

Student career and personality prediction system is a simple application created to help students to choose their interested career as well as know about themselves. It combines test papers related to so many fields. It can help you to know which career option is suitable to your knowledge. User can also access the information related to career field and this system recommend the best colleges of that field. It also combines personality prediction in three formats such as mind (interaction with other peoples or environment), nature(thinking ability and feelings), decision status (ability to handle any situation). The best thing of this system is to develop yourself and develop your knowledge. This system mainly concentrate on student requirements, their career, and try to fulfil all needs. Background of the Study According to Wattles (2009), in this age of career advancement one has not only to make due career planning but also exhaustive career research before making a career choice. This helps in adjusting with the evolving socio- economic conditions and since a career choice is one of the most important decisions that one has to make in life. While some people are lucky enough to just know what they want to do and end up in satisfying careers without giving it much thought, most individuals are not. Many secondary school students do not put enough effort into choosing occupations or pick them for the wrong reasons. Others choose careers that seem secure or pay well and then they end up being unsatisfied. There are developments that have been made in some countries with regards to career guidance and development.

## II. LITERATURE SURVEY

[1] 2018 Fourth International Conference on Computing Communication Control and Automation (ICCUBEA) , (Rangnekar 2018) “This paper was based on classification data mining algorithm. Two classification algorithms has been used here, of which the results were compared to find the answer with maximum accuracy, rule based classification algorithm and decision tree algorithm.” [2] 2020 International conference on power Electronics & IoT Applications in Renewable Energy and its Control (PARC). “Helpful for predict the right careers. These has been used to predict the personality. Predict the hobbies, score and career.” [3] Student Profile & Personality Prediction using Data Mining Algorithms (IJARIIE-ISSN(0)-2395-4396) “Career prediction model using data mining and linear classification , 2018 fourth international conference of computing communication control and automation. ” [4] Proceedings of 2015 Global

Conference on Communication Technologies (GCCT 2015). “Intelligent methods such as decision trees , applied in all field in data mining and sot computing. Theory on new intelligent technique used for classifications.

## II. PLANNING AND ESTIMATION

### 2.1 Feasibility Study

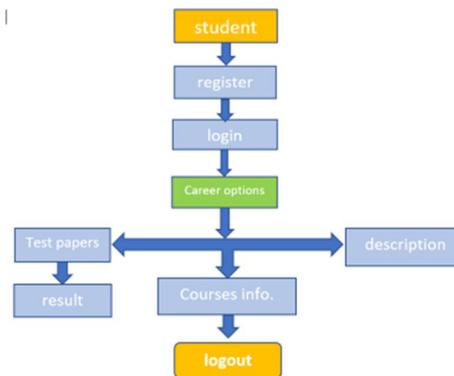
We present a student career and personality prediction system here we describe the architecture of this system and how it is used. But now our system gives full opportunity to achieve this by modern methods. He/she does their work more frequent & save his valuable time for each consumer.

### 2.2 Technical Feasibility

The assessment is based on an outline of system requirements in terms of Input, Processes, Output, Fields, Programs and procedures. In this project, the output are displayed on chrome or any other web browsers. In technical feasibility we study the desired system technically.

### 2.3 Analysis

Analysis is the most important part or phase for any project. Before starting work for any project you must have to analyze the project. By analyzing you know about the requirements of your project and risks regarding to your project and due to this you will be able to decide whether to take project or not.



**Figure 1: Flowchart**

## III. DESIGN

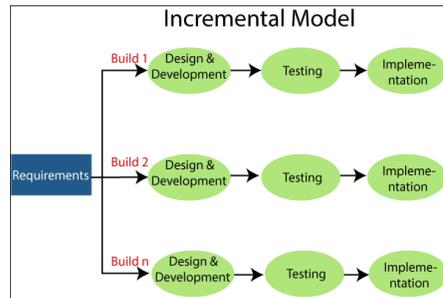
The software design is actually a multistep process that focuses on four distinct attributes of a program: data structure, software architecture, *interference* representation, and procedural detail. The design process translates requirements into a representation of software that can be assessed for quality before coding begins.

### 3.1 The Incremental Model

Incremental Model is a process of software development where requirements divided into multiple standalone modules of the software development cycle. In this model, each module goes through the requirements, design, implementation and testing phases. Every subsequent release of the module adds function to the previous release. The process continues until the complete system achieved.

- 1. Requirement analysis:** In the first phase of the incremental model, the product analysis expertise identifies the requirements. And the system functional requirements are understood by the requirement analysis team. To develop the software under the incremental model, this phase performs a crucial role.
- 2. Design & Development:** In this phase of the Incremental model of SDLC, the design of the system functionality and the development method are finished with success. When software develops new practicality, the incremental model uses style and development phase.

3. **Testing:** In the incremental model, the testing phase checks the performance of each existing function as well as additional functionality. In the testing phase, the various methods are used to test the behaviour of each task.
4. **Implementation:** Implementation phase enables the coding phase of the development system. It involves the final coding that design in the designing and development phase and tests the functionality in the testing phase. After completion of this phase, the number of the product working is enhanced and upgraded up to the final system product



**Figure 2: Incremental Model**

#### IV. ALGORITHMS

##### 4.1 Linear Search Algorithm

Linear search is a very simple search algorithm. In this type of search, a sequential search is done for all items one by one. Every item is checked and if a match is found then that particular item is returned, otherwise the search continues till the end of the data collection

##### A. Algorithm

1. Get the length of the array.
2. Get the element to be searched store it in a variable named value.
3. Compare each element of the array with the variable value.
4. In case of a match print a message saying element found.
5. Else, print a message saying element not found.

##### 4.2 Classification Algorithm

##### A. Structured Data Classification

Classification can be performed on structured or unstructured data. Classification is a technique where we categorize data into a given number of classes. The main goal of a classification problem is to identify the category/class to which a new data will fall under.

Few of the terminologies encountered in – classification:

**Classifier:** An algorithm that maps the input data to a specific category.

**Classification model:** A classification model tries to draw some conclusion from the input values given for training. It will predict the class labels/categories for the new data.

**Feature:** A feature is an individual measurable property of a phenomenon being observed.

**Binary Classification:** Classification task with two possible outcomes. Eg: Gender classification (Male / Female)

**Multi-class classification:** Classification with more than two classes. In multi class classification each sample is assigned to one and only one target label. Eg: An animal can be cat or dog but not both at the same time

**Multi-label classification:** Classification task where each sample is mapped to a set of target labels (more than one class). E.g.: A news article can be about sports, a person, and location at the same time.

The following are the steps involved in building a classification model:

Initialize the classifier to be used.

Train the classifier: All classifiers in scikit-learn uses a fit(X, y) method to fit the model(training) for the given train data X and train label y.

Predict the target: Given an unlabeled observation X, the predict(X) returns the predicted label y.

Evaluate the classifier model Types in classification algorithm

### B. Rule-Based Classification

- Rule-based classifier makes use of a set of IF- THEN rules for classification.
- We can express a rule in the following form- If condition THEN conclusion

Let us consider a rule R1,

1:IF age=youth AND student=yes THEN buy\_computer=yes

- The IF part of the rule is called rule antecedent or precondition.
- The THEN part of the rule is called rule consequent.
- The antecedent part the condition consists of one or more attribute tests and these tests are logically ANDed.
- The consequent part consists of class prediction.

In this project we are using classification algorithm

### C. Bayesian Belief Network

Is a graphical representation of different probabilistic relationships among random variables in a particular set. It is classifier with no dependency on attributes i.e. it is condition independent. Due to its feature of joint probability, the probability in Bayesian Belief Network is derived, based on a condition -  $P(\text{attribute}/\text{parent})$  i.e probability of an attribute, true over parent attribute.

### D. Support Vector Machine

Support Vector Machine “(SVM) is a supervised machine learning algorithm which can be used for both classification or regression challenges. It is mostly used in classification problems.

### 4.3 Decision Tree Algorithm

Classification is a two-step process, learning step and prediction step, in machine learning. In the learning step, the model is developed based on given training data. In the prediction step, the model is used to predict the response for given data. Decision Tree is one of the easiest and popular classification algorithms to understand and interpret.

Decision Tree algorithm belongs to the family of supervised learning algorithms. Unlike other supervised learning algorithms, the decision tree algorithm can be used for solving regression and classification problems too.

The goal of using a Decision Tree is to create a training model that can use to predict the class or value of the target variable by learning simple decision rules inferred from prior data(training data).

In Decision Trees, for predicting a class label for a record we start from the root of the tree. We compare the values of the root attribute with the record’s attribute. On the basis of comparison, we follow the branch corresponding to that value and jump to the next node

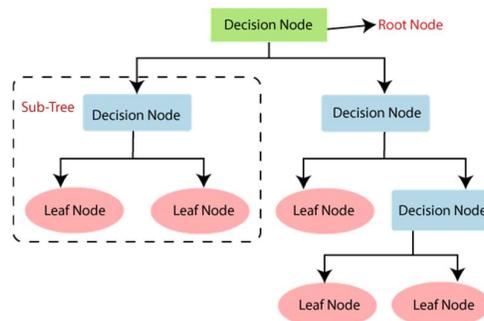


Figure 3

### A. Types of Decision Trees

In this project we are using categorical variable decision tree algorithm

Types of decision trees are based on the type of target variable we have. It can be of two types:

Categorical Variable Decision Tree: Decision Tree which has a categorical target variable then it called a Categorical variable decision tree.

Continuous Variable Decision Tree: Decision Tree has a continuous target variable then it is called Continuous Variable Decision Tree.

### V. RESULT

At least students will get appropriate career options according to their ability and performance in tests. Student can think about that career option which will be given at result. This project will helpful to all students to achieve their goals, their interest and know about their skills. The best motive of this project is to help those students who are confused regarding to choose their career option.



Fig. 4



Fig. 5



Fig. 6

### VI. FUTURE WORK

In this research, giving an appropriate career as per their ability then further also recommend best colleges as per their opted course on the basis of their locality, fee structure. So the student can easily start study and also provide some details regarding their admission and contact with that college.

### VII. CONCLUSION

The study purpose of this method is to guide graduating high school students and educators to enhance decision-making process. This could guide them also to decide whenever an institution is planning to offer new courses. This is to conclude that the proposed methods are feasible to support decision to the identified beneficiary of this study. This simple analysis works show that the proper data mining application on student's performance data can be efficiently used for vital hidden knowledge/ information retrieval from the vast data, which can be used for the process of decision making by the management of an educational institution.

### REFERENCES

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