

## PREDICTION OF STUDY TRACK BY APTITUDE TEST USING JAVA

Deepali Joshi and Priyanka Desai  
Department of Computer Engineering,  
Thakur College of Engineering & Technology, Mumbai, Maharashtra, India

### ABSTRACT

*In today's competitive world everyone wants to be successful to achieve this it is essential to be successful in academics. The basic education is from 1st to 10th standard and once 10th standard is complete there are various courses that can be selected by the student. The students get confused for selecting the appropriate field. The proposed system can be used to solve this problem in order to achieve this aptitude test is implemented. Aptitude Test is utilized by the proposed system which predicts the suitable stream depending upon the intellectual capability of the student. To find the suitable stream aptitude test method can be used as compared to the traditional process. The proposed system is beneficial as compared to traditional system as the accuracy of results is better.*

**KEYWORDS:** *Aptitude, ssc, ssc marks, Accuracy, Streams*

### I. INTRODUCTION

Each and every person wants to be successful in all phases of life. To be successful it depends on whether or not the correct field is selected. If correct field is selected by students then they will be successful in their careers [1]. If appropriate field is not selected then student's face lot of problems. The education is categorized in various phase's. Once 10<sup>th</sup> standard is complete number of options are available to students and depending upon the field the career will be decided. After 10<sup>th</sup> various courses are available like Science, Commerce and Arts [6]. As many options are available it becomes difficult to choose the suitable field. A method or technique is required through which the students can find suitable stream. Some solutions are available in order to solve the problem but they do not provide appropriate results. One method which is used to specify the stream is the Aptitude Test Method. The aptitude test consists of Questions and along with questions answers are also displayed. The student have to find out the correct answer from the given options. The questions specify various streams like Science, Commerce, Arts and Diploma. Through the aptitude test intellectual capability of the student can be assessed and the suitable stream can be predicted to the student. The paper contains detailed information about Building the Model, DATA COLLECTION, Tools, Implementation, Solution, Results and Conclusion and followed by references.

### II. BUILDING THE MODEL

Aptitude Test is an efficient method through which prediction of the field can be done. The main advantage of aptitude test is that it completely depends upon the intellectual capability of the student. The test will be carried out on every individual student and the result will be generated. The result of student's will be different because it will be specific to that student only. In order to build the model Java Net beans is used and along with this a database is connected so that the questions as well as answers are stored. The database used is SQLite.

### **III. DATA COLLECTION**

To implement the proposed system data is required and the data consists of questions and their correct answer along with three options. The data is gathered from the 10<sup>th</sup> standard text books and the internet is also utilised for this purpose. The questions and answers belong to the streams like Science, Commerce, Arts, Diploma and Engineering.

### **IV. TOOLS**

The tools which are used to implement the proposed system are Java Net beans and the database is SQLite.

#### **4.1 Java**

Java is a set of several computer software products and specifications from Sun Microsystems (which has since merged with Oracle Corporation), that together provide a system for developing application software and deploying it in a cross-platform computing environment. Java is used in a wide variety of computing platforms from embedded devices and mobile phones on the low end, to enterprise servers and supercomputers on the high end. While less common, Java applets are sometimes used to provide improved and secure functions while browsing the World Wide Web on desktop computers.

#### **4.2 SQLite**

SQLite is an in-process library that implements a self-contained, server less, zero-configuration, transactional SQL database engine. The code for SQLite is in the public domain and is thus free for use for any purpose, commercial or private. SQLite is currently found in more applications than we can count, including several high-profile projects. SQLite is an embedded SQL database engine. Unlike most other SQL databases, SQLite does not have a separate server process. SQLite reads and writes directly to ordinary disk files. A complete SQL database with multiple tables, indices, triggers, and views, is contained in a single disk file. The database file format is cross-platform - you can freely copy a database between 32-bit and 64-bit systems or between big-endian and little-endian architectures. These features make SQLite a popular choice.

### **V. IMPLEMENTATION**

In order to predict the suitable stream, the student have to give input such as name, gender, phone number, email id, hobbies, railway line, nearby station. Once this is complete a option is provided to the student that is take aptitude test. As soon as the student clicks on this option the aptitude test screen will be displayed. The aptitude test is implemented so that the student can find the suitable stream depending upon the intellectual capability. The aptitude test consists of questions from various streams. For each stream there are three levels of questions and if the student gives correct answer then the level will be incremented. The questions of first level are of one mark, the second level questions are of two marks and the third level questions are of three marks. The first level consists of three questions, if the student gives correct answer of first question then the level will be incremented and the questions of level two will be displayed to the student. If the answer to the question one of level one is incorrect then the second question of level one will be displayed and there is no increment of the level. Similarly if the answer of first question of level two is correct then the level will be incremented and the question of level three will be displayed to the student. Thus if the student gives correct answer of all three levels then the student has faced only three questions and the suitable stream will be displayed to the student. The questions and their answers are stored in database and will be displayed to the student on the onset of the test. There are various attributes such as id, Stream, Number, Questions, ans1, ans2, ans3, ans4, correctans. The attribute id is used for identification. Point is basically the marks allotted for each and every question. Stream specifies to which stream the question belongs. The streams are MED which specifies the question belongs to Science field, COM specifies Commerce, ARTS as the name suggests Arts, ENG specifies diploma. Number indicates the question number. Question consists of questions to be asked or displayed to the student. Every question will have four answer options one of which is correct. The correctans consists of answer number which is correct. For each stream there are three

levels of questions and if the student gives correct answer then the level will be incremented. The questions of first level are of one mark, the second level questions are of two marks and the third level questions are of three marks. The first level consists of three questions, if the student gives correct answer of first question then the level will be incremented and the questions of level two will be displayed to the student. If the answer to the question one of level one is incorrect then the second question of level one will be displayed and there is no increment of the level. Similarly if the answer of first question of level two is correct then the level will be incremented and the question of level three will be displayed to the student. Thus if the student gives correct answer of all three levels then the student has faced only three questions and the suitable stream will be displayed to the student.

Table 1. Database Table.

id	Point	Stream	Number	Questions	ans1	ans2	ans3	ans4	correctans
1	1	1MED		1 When a gas is turns condensation	evaporation	deposition	sublimation		1
2	2	1MED		2 Which of the follow core	photosphere	sunspots	corona		4
3	3	1MED		3 Which of the follow Atomic warfare	CO2 from fossil fuel	Dust clouds from vol	Depletion of earth's		2
4	4	2MED		1 Earth's seasons are The tilt of the earth	The varying amount	The earth's orbit arc	The rotation of durin		1
5	5	2MED		2 Which of the follow S	Se	I	Ga		4
6	6	3MED		1 Which of the follow The north pole of an	A piece of iron that	A positively charged	A negatively charge		2
7	7	1COM		1 A person has 4 coins	16	15	12	11	2
8	8	1COM		2 A cow is tethered in	2	6	18	24	2
9	9	1COM		3 2 hours after a freig	40	30	80	60	1
10	10	2COM		1 2 numbers differ by	21	51	28	37	4
11	11	2COM		2 A radio when sold at	280	270	290	260	4
12	12	3COM		1 x% of y is y% of	x/y	2y	x	none	3
13	13	1ENG		1 What command is us copy running backuo	copy running-config	config mem	nr mem		2
14	14	1ENG		2 You have 10 users p 100 Mbps	1 Mbps	2 Mbps	10 Mbps		4
15	15	1ENG		3 Which command you ip net inside	ip net outside	ip outside global	ip inside local		2
16	16	2ENG		1 Friction factor for fl pipe length	pipe roughness	fluid density & visca	mass flow rate of fl		1
17	17	2ENG		2 What is (void*)0	Representation of N	Representation of v	Error	None of above	1
18	18	2ENG		1 In which header file stdio.h	stdio.h	stdio.h and stddef.h	math.h		3
19	19	1ARTS		1 Two of the great Mu Bebar and Humayun	Humayun and Jahar	Bebar and Jahangir	Jahangir and Shahje		3
20	20	1ARTS		2 The pass located at the Paighat gap	the Bhonghat pass	the Thalgat pass	the Bolan pass		1
21	21	1ARTS		3 The title of Viceroy 1848 AD	1856 AD	1858 AD	1862 AD		3
22	22	2ARTS		1 The Vedas contain a Sivami Vivekananda	Sivami Dayananda	Raja Rammohan Roy	None of the above		2
23	23	2ARTS		2 Since the inception c institutionalized	rationalized	cheapered	All of the above		4
24	24	3ARTS		1 The trident-shaped Nirvana	Sangha	Buddha	Dhamma		1

The above table contains various attributes such as id, point, stream, number, questions, ans1, ans2, ans3, ans4 and correctans. Id is used for identification, point specifies the marks allotted to each and every question. The stream specifies to which stream the question belongs such as Commerce, Arts, Diploma and Science. Number is nothing but the question number. Questions contain the detailed questions along with answer option ans1, ans2, ans3, ans4 and the correctans contains the numeric which specifies correct answer.

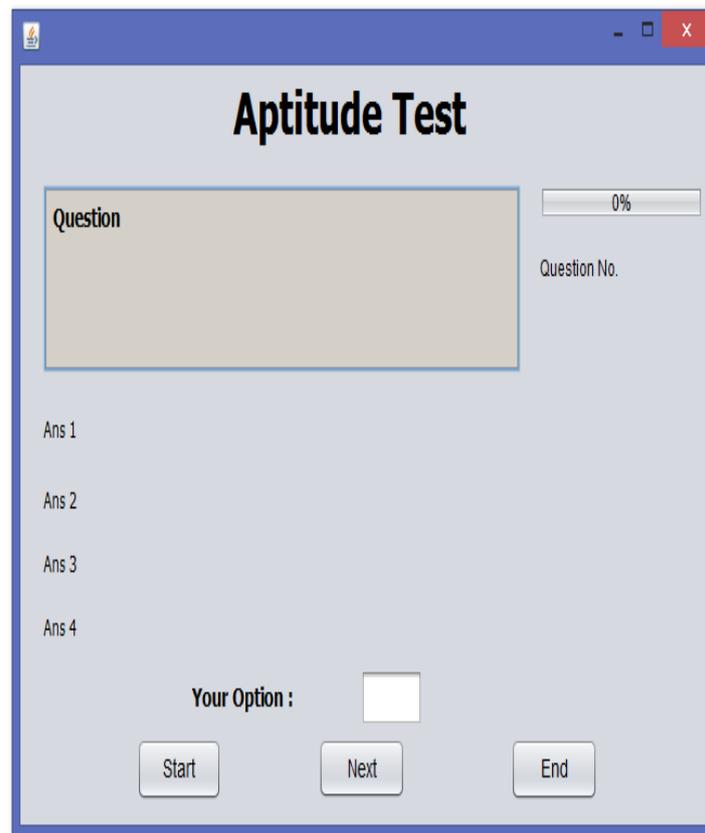
The image shows a web browser window with a form titled "Student Details". The form contains the following fields and values:

Field	Value
Name	Deepali Joshi
Gender	Female
Phone No	+91 9820000000
Email	deep@gmail.com
Hobbies	music
Railway Line	Western Railway
Near By Station	Virar

At the bottom of the form, there are two buttons: "Back" and "Submit".

**Figure 1.** Student Details

In the above figure the student will enter their basic detail. The first step in proposed system is to gather the student details such as the Name, Gender, Phone No, Email id, Hobbies, Railway Line, Near by Station. Once the basic details are filled by the student the first screen appears where the question, answers, number of questions attempted will be displayed to the student. It also consists of buttons such as Start, Next, End which perform the operation as the name suggests.



**Figure 2.** Main Page

The above screen is the first screen that appears when the student clicks on aptitude.

As soon as the student clicks on Start button the first question will be displayed to the student along with the options. Question no will also be displayed to the student. On the screen it display's Question No. 1/12, which indicates the first question out of twelve. In the next screen the student has entered the option 1 and then clicks on Next the next question will be displayed. Similarly the student has to answer twelve questions and then the result will be displayed. The result that is generated is engineering and along with this the Aptitude score is also displayed.

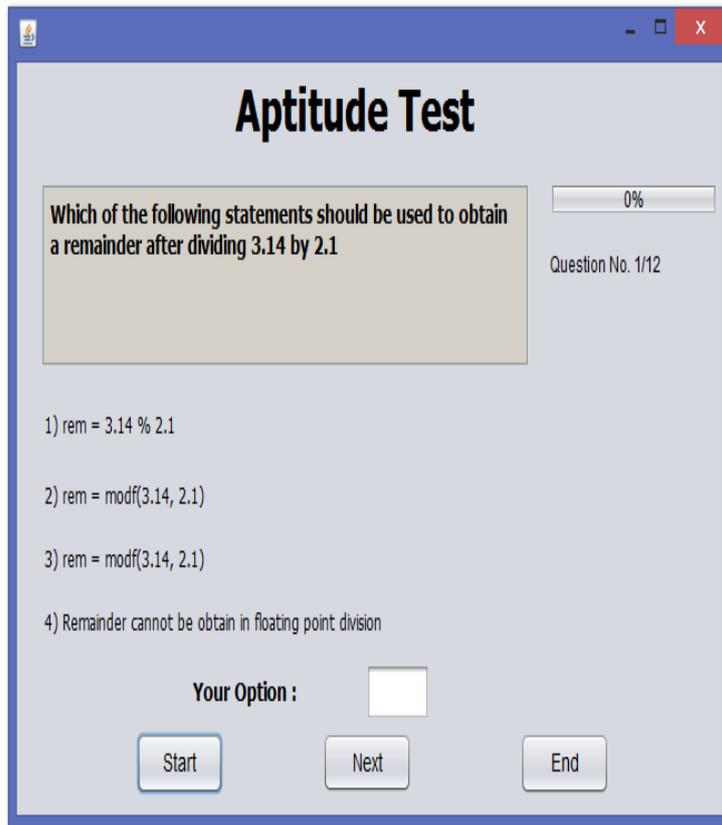


Figure 3. Aptitude Question with options.

In the above figure the aptitude question along with the answer options is displayed.

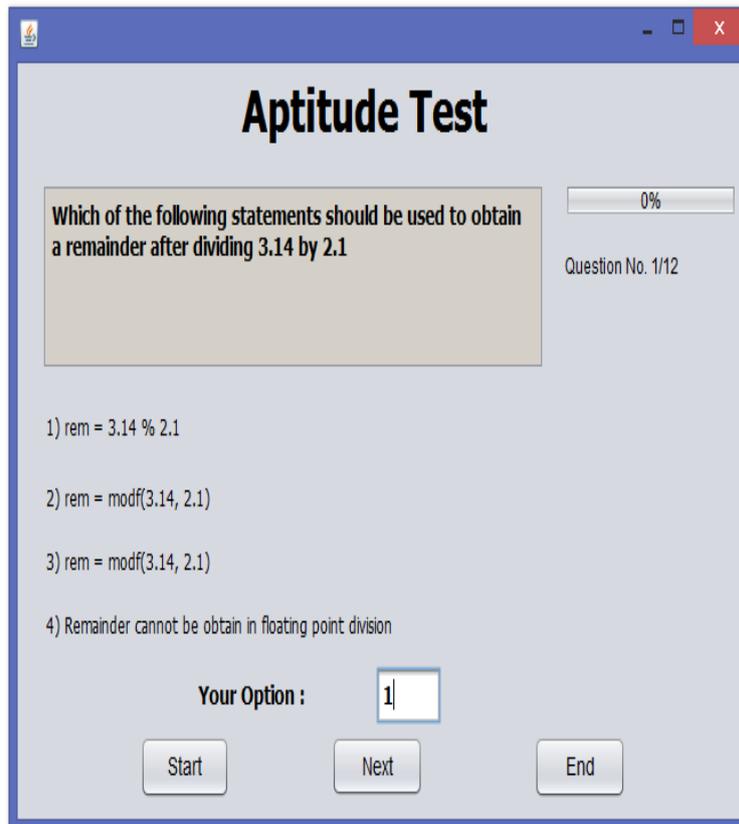


Figure 4. First question with answer.

In the above figure once the question has been read and understood the student enters the suitable answer option.

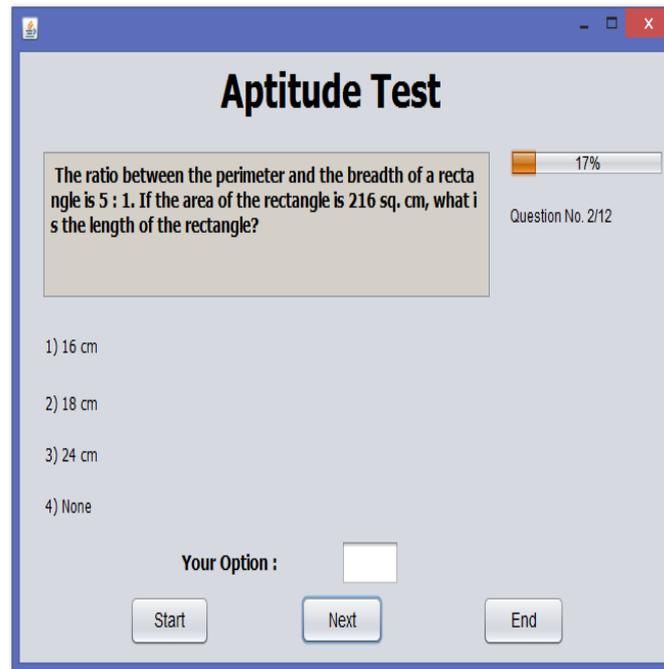


Figure 5. Next question with options.

The second question along with the options are displayed.

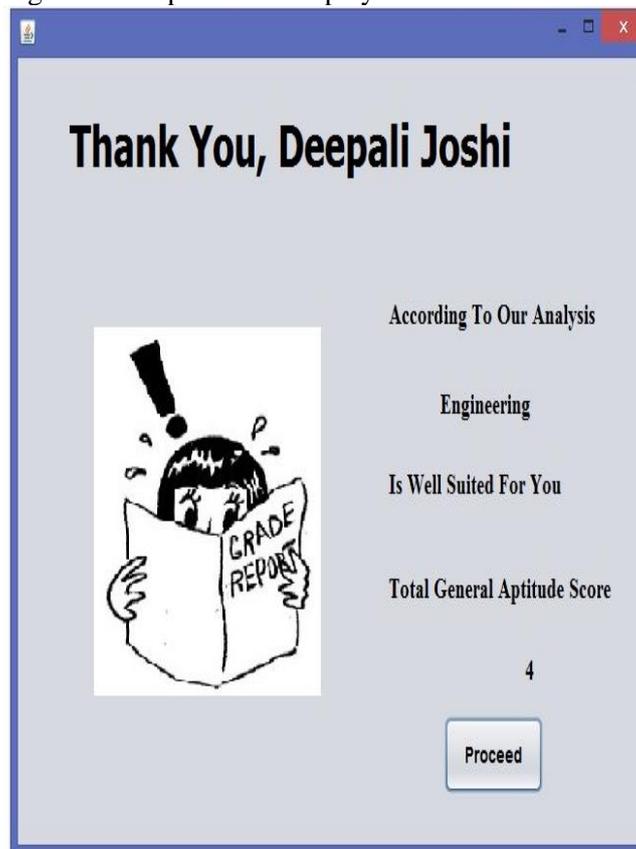


Figure 6. Result

In the above figure the suitable stream is predicted.

## VI. SOLUTION

The proposed system uses Aptitude Test method in order to specify the suitable stream to the student. It takes input such as name, contact number, email-id, hobbies, railway line, nearby station this is done for registration purpose. Once the registration is complete the aptitude screen will be displayed and as soon as the student clicks on start the question along with the answers will be displayed. There are four options for the answers and the student has to select one. The questions belong to different streams. Depending upon the correct answer given by the student maximum number of times for the specific stream indicates that the student has prerequisite knowledge and that stream is more suitable for that student. The aptitude test method provides efficient result because it depends upon the intellectual capability of the student.

## VII. RESULTS

The proposed system is more efficient as compared to the existing system and generates appropriate results. Through the aptitude test, the student can answer the questions and find their intellectual capability for the specific stream and according to the correct answers the stream will be predicted. The Aptitude Test method was conducted for twenty-five students of Abhinandan Classes. Each and every student personally gave the aptitude test on separate machines and the questions displayed to them were different to make sure that their intellectual capability is tested in a efficient way. The aptitude test method worked successfully and predicted the suitable stream for individual student.

The pie chart specifies the result of the Aptitude Test. There are four streams Science, Commerce, Arts, Diploma. The test was conducted on twenty-five students, out of which science was the suitable stream for eight students and in percentage it can be specified as 32%, commerce for five students and percentage is 20%, arts for three students and percentage is 12%, diploma for nine students and can be specified as 36%.

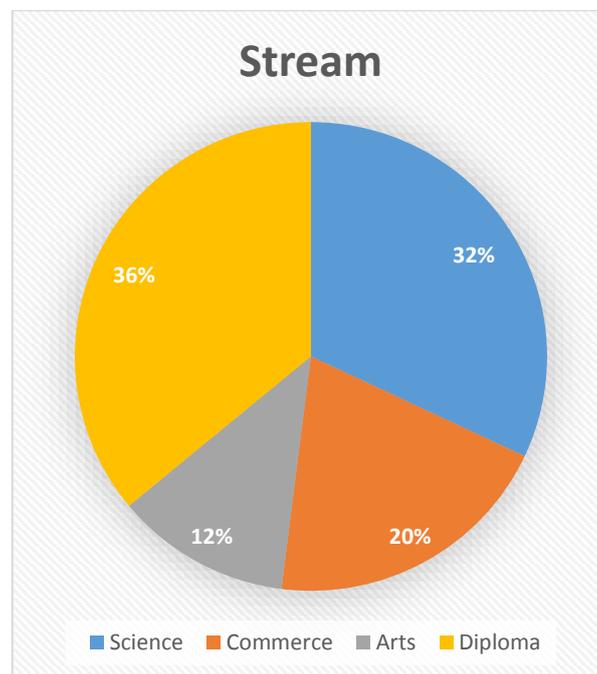


Figure 7. Pie Chart

The above pie chart shows the percentage of the specific field being predicted.

## VIII. CONCLUSION

The proposed system was tested on students from Abhinandan Classes. Each and every student gave the test individually on separate machines and distinct questions displayed to them. The number of students who appeared for the aptitude test was 25. The suitable stream was predicted to them through

the aptitude test method. Science was predicted for eight students and in percentage it can be specified as 32%, commerce for five students, arts for three students, diploma for nine students. Once the aptitude test was completed an interactive session was carried out and the students commented that the streams predicted to them were suitable from their point of view. The aptitude test worked successfully and predicted the suitable stream for individual student. The students as well as their parents have clarity about the stream and their wards future.

## **IX. FUTURE WORK**

In this paper, we proposed and built a model to predict a suitable stream to the students depending on their intellectual capability. The proposed system aims to improve the quality of education by helping the student to select the stream which is appropriate for them. The proposed system is implemented for ssc students and predicts the stream. The research can be enhanced by implementing it for the hsc students so that once the stream can be predicted to them.

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## **AUTHORS**

**Deepali Joshi**, M.E (Pursuing), B.E (CMPN). Area of Specialization Data Mining, Operating System



**Priyanka Desai**, Ph.D (Pursuing), M.Tech (CSE), B.E (CSE). Area of Specialization Networks, Web/Text Mining, Software Engineering, Database/Object Oriented Technology.

