

An Online Platform For User Behaviour Analysis Using Online Psychometric Test

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ABSTRACT

This paper aims to present study on developing an online platform for psychometrical analysis of people. This platform will provide set of psychometrical and psychological questions having multiple choices for an answer. Those questions will not have right or wrong answers. Purpose of the system is detection of specific behavior of the user to help military selection process, corporate industries, educational institutes and provide various suggestions to boost capabilities and to overcome drawbacks of the user. In design of the system mysql database, php, html, css and some bootstrap modules are used .

Keywords: Psychometrical analysis, Online platform, Multiple choices, Specific behavior, Boosts capabilities, MYSQL, PHP, HTML, CSS, bootstrap.

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I. INTRODUCTION

Online systems provide free access to users which are geographically distant. Online examinations derived using some standards can be used as base for various corporates and educational sections.

Although there is substantial evidence on how personality constructs are predictors of job performance, there is less logical evidence of how different personality characteristics make difference in the successful the interviewing process. Ability testing and other types of psychometric assessment are now common parts of assessments. For example, verbal reasoning assessments might be used to evaluate whether a candidate will be able to perform some of the tasks of a role [2]. Another example could be a technical assessment where technical skills of an employee can be tested to check whether a person is able to do technical things. The questions found within ability and performance assessments usually have correct and incorrect responses and a respondent's scores are typically based upon the quantity of items they've answered correctly. Personality and preference measures usually require the respondent to rate their level of agreement or disagreement

with the various items, and respondent's scores are typically based upon the sum or mean of a group or subset of the items [3].

In today's world, due to improper analysis of the behavior of the people, they are not used at the fullest. The current psychological analysis process is very time consuming and expensive, also there is social stigma among people about visiting psychiatrist [1]. So, we are proposing an online platform for psychometrical analysis of users. This platform will provide set of psychometrical and psychological MCQ type questions. Those questions will not have right or wrong answers. Admin will have flexibility of modifying questions. User has to select an option for each question. Based on the answers given by user report will be generated and shared with the admin. This report/ analysis will help the admin in deciding whether to consider user's application for desired process.

II. LITERATURE SURVEY

Although there is substantial evidence on how personality constructs are predictors of job performance[1], there is less systematic evidence of how personality characteristics relate to success in the interviewing process.

Identifying Disabilities, weaknesses and strengths: Learning disabilities can be very hard to identify, but psychological testing helps in detecting areas in which students are having difficulties.

Advancement of person: Psychological testing is also important in helping the school administration, industry administration to evaluate user's achievements and make decisions about their advancement.

Vocational Ability: The results of a psychological test can also assist managers and high authorities ascertain the vocational ability of the candidate.

III. REQUIRMENT ANALYSIS

A. System Requirements

Client side requirements:

Software requirements	Hardware requirements
Windows 7 or above	Processor: Intel Pentium III or above with
WAMP Server	Hard Disk: 125 GB or more
Chrome Browser	Processor: 1GB RAM or more and Network Interface
Server side requirements:	
Software requirements	Hardware requirements
Windows 7 or above	Processor: Intel Pentium III or above with
WAMP Server	Hard Disk: 125 GB or more
Chrome Browser	Processor: 1GB RAM or more and NIC CARD

B. User And Administrator Role Analysis

User role analysis:

System's ultimate goal is providing online psychometric test service for users; so, the user is the key part of the system. After user enters into the system through the correct login-id and password, information of the user can be viewed and the password can be reset. The user can view the test information, which includes name of the test, time duration, whether he can take the test, etc. When the start time of the test has not started, the system will remind that the test has not started; when the test is to be taken, the user can start the test by clicking the start button; every question has time period and it is compulsion for the user to submit the answer within that time period otherwise question will be submitted automatically. After the end of test the user check exam results.

Administrator role analysis :

In order to ensure the correctness of the information, the administrator can view personal information and change the password after login system, and then arranges the relevant examination. Administrator creates a test with accurate set of questions, options and answers. Administrator needs to

choose the right questions, start time, test time and other information.

FEASIBILITY STUDY

1. Economic feasibility

Economic analysis is most frequently used for evaluation of the effectiveness of the system. More commonly known as cost/benefit analysis the procedure is to determine the benefit and saving that are expected from a system and compare them with costs, decisions is made to design and implement the system. In the system, the organization is most satisfied by economic feasibility. Because, if the organization implements this system, it need not require any additional hardware resources as well as it will be saving lot of time.

2. Technical feasibility

Technical feasibility centers on the existing manual system of the user behavior analysis process and to what extent it can support the system. According to feasibility analysis procedure the technical feasibility of the system is analyzed and the technical requirements such as software facilities, procedure, inputs are identified. The system offers greater levels of user friendliness combined with greater processing speed. Therefore, the cost of maintenance can be reduced. Since, processing speed is very high and the work is reduced in the maintenance point of view management convince that the project is operationally feasible.

3. Behavioral feasibility

People are inherently resistant to change and computer has been known to facilitate changes. An estimate should be made of how strong the user is likely to move towards the development of computerized system. These are various levels of users in order to ensure proper authentication and authorization and security of sensitive data of the organization.

IV. MODULE DESCRIPTION AND ALGORITHMS

A. Modules

The project is divided into five modules as following:

Registration module:

Registration of the user who is intending to write the test by getting the username and password is developed in the registration module. After the registration, the user based on his profile can take the test on the desired date and topic.

Selection module

This module based on the user privilege sets the question paper for the user. There are three privileges. They are candidate, administrator and operator.

Questionnaire module

In this module after getting the access for the required area, the system provides the questions related to that area to the user. The questions are in the form of multiple-choice questions.

Score report module

In this module, the system generates the score for the questions taken by the candidate. Scores are stored in system.

Report Generation

Generating different types of reports according to the score of the user.

B. Algorithms

Most of the activities in this system are database related activities. PHP libraries are used in various occasions that provide specific functions.

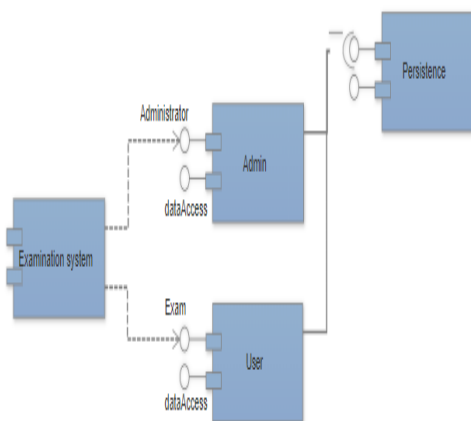
- Password hashing
- Password salting
- Sending emails
- Sending PHP requests

The main algorithmic part that is developed is included in the Statistical information sub system. Since a large volume of data has to be analyzed in the browser to generate statistical data (statistical graphs are not stored in the database, but generated in the browser when required), the efficiency of the algorithm plays a vital role.

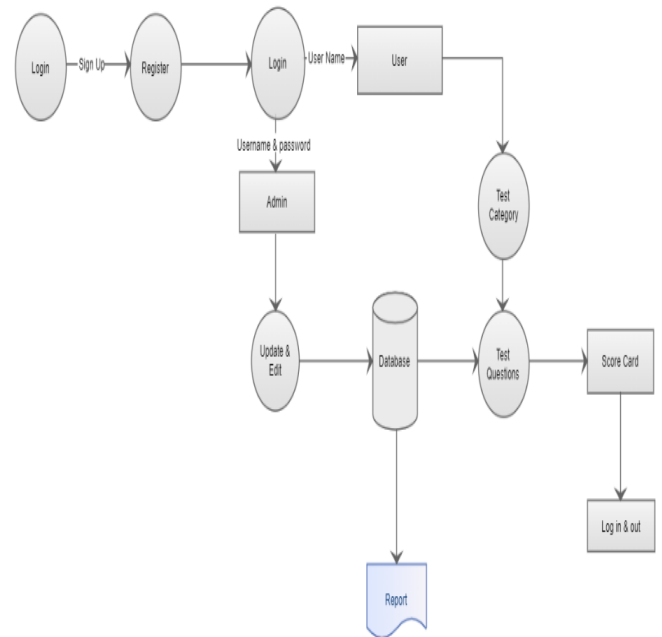
- Statistical information subsystem incorporates following algorithms Search: Linear search is used.
- Sort: In order to order the student results in a specific order, sorting is required. Scores are sorted using quick sort algorithm. (In this case quick sort is the ideal algorithm since the data set can be assumed to be equally distributed).

V. SYSTEM DESIGN AND TEST CASES

1. Components of the system:



2. Data flow in the system :



3. Test Cases:

Test cases are derived to ensure that all statements in the program have been executed at least once during testing and that all logical conditions have been executed.

Case ID	Description	Test Item	Pre Condition	Steps need to be done	Expected result	Result
1	New user account creation	Sign up button	Login Page must be opened	1. Enter valid data 2. Click on sign up button	Account should be created successfully	Pass
2	Existing user can log in	Login button	Login Page must be opened	3. Enter valid username & password 4. Click on Login button	User should be logged in if correct data is entered	Pass
3	Admin log in	Login button	Admin dashboard must be opened	5. Enter valid username & password 6. Click on Login button	Admin should be logged in if correct data is entered	Pass
4	Creating Test	Create quiz	Create test page should be opened	Enter questions, options and answer for question	Test should be created	Pass
5	Deleting Test	Delete quiz	List of tests with delete button should be opened	Click on delete button	Test should be deleted	Pass
6	Starting test	Start quiz	Question with options	Click on submit	Questions and test	Pass

			should be opened	button for question	should be submitted	
7	Checking result	Result	Result page should be opened	-	Result should be displayed	Pass
8	Checking history	History	History of tests should be displayed	-	History should be displayed	pass
9	Log out	Sign out	User should be signed out	Click on sign out button	user should be signed out successfully	Pass

VI. CONCLUSION

In this way, we have provided an efficient and easy to use online platform for user behavior analysis test and generated a detailed report of user's behavior according to the result of the test which shows disabilities, weaknesses and strengths of the user and key areas to improve where improvement is needed.

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