

TRACKING ON THE INTERNET ASSESSMENTS THROUGH INFORMATION VISUALIZATION

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Abstract:

We current an strategy and a system to let instructors observe several reasons relevant to online tests, such as student activities and evaluate excellent. The strategy contains the signing of essential data relevant to student connections with the system during the efficiency of online tests and uses data creation to highlight information useful to let instructors evaluation and enhance the whole evaluation procedure. We have focused on the development of behavior styles of students and conceptual connections among evaluate products. Furthermore, we have led several tests in our staff to be able to evaluate the whole strategy. In particular, by assessing information creation maps, we have recognized several formerly mysterious evaluate techniques used by the students. Last, we have recognized several connections among concerns, which gave us useful reviews on the evaluate excellent.

Chapter 3

SYSTEM ANALYSIS

Object-oriented research is concerned with creating application technological innovation requirements and requirements that indicated as a body product, as opposed to the traditional data or efficient views of techniques. It is the procedure of interpreting the issue with regards to objects: real-world things with which the system must interact and candidate application things used to find various remedy solutions. The natural fit of development things to real-world things has a big effect here.

Object-oriented Analysis can generate the following benefits:

Maintainability through simple applying to the real life, which provides for less research attempt, less complexity in system style, and easier verification by the user

Reusability of the research relics, which saves some time to costs; and depending on the research technique and development terminology,

Productivity gains through direct applying to features of Object-Oriented Programming Languages.

3.1. SOFTWARE REQUIREMENT SPECIFICATIONS

Software Need Requirements is the beginning of the application creating activity. As system grew more complex, it became evident that the goal of the whole system cannot be quickly understood. Hence the needs for the importance level occur. The application venture is started by the consumer needs. The Software Need Requirements is the means of translating the ideas of the minds of clients (the input) into a formal papers (the outcome of the importance level.)

3.1.1. Purpose

To make an strategy or system to let investigators observe several reasons relevant to online tests, such as student activities and evaluate excellent.

3.1.2. Scope

The suggested strategy is designed to collect data concerning the learner's activities during online tests. Through this system, teacher can sketch a lot of understanding such as for which kind of concerns students getting a longer period, how individual is responding to whether he is guessing, etc. The system can also be extended to recognition of connection among concerns and recognition of being disloyal.

3.1.3. Objective

The main purpose of tracking online tests through Information Visualization is to let investigators observe several reasons relevant to online tests, such as student activities and evaluate excellent.

- To current a means for understanding development.
- To offer a menu-driven, user-friendly user interface.
- To offer Robustness

3.1.4. Present System

- In purchase to teach students how to enhance their shows on arranged tests, in the past, several tests have been carried out to track learners' activities during tests by using the think-out-loud method
- Learners were informed of the try things out and had to speak during the evaluate to explain what they were thinking, while an operator was storing their words using a tape recorder

Limitation:

- Think-out-loud technique might be quite invasive, since it requires students to alter their activities to be able to history information to evaluate, which might vanish the try things out goals, since it adds considerable noise in the tracked data.

3.1.5. Proposed System

We current a remedy enabling the recording of learners' habits during online tests without showing them of the underlying try things out and, consequently, without asking them to alter their activities, which potentially makes more realistic outcomes.

3.2. FUNCTIONAL REQUIREMENTS

The efficiency can be achieved in two stages- LoggingFramework and Log Analyzer system.

INPUT: The feedback to the system is the Tracking On the internet evaluate.

Processing:

- The purpose of the Logging Structure is to collect all of the student activities while surfing around websites of the evaluate and to shop raw information in a set of log data files in XML structure.
- Log Analyzer is a stand-alone system that examines the records to be able to sketch out information from them and to graphically signify it.

OUTPUT

- Graphical representation of online evaluate illustrating Learner's activities and evaluate excellent.

3.3. NON FUNCTIONAL REQUIREMENTS

Performance: User requests are to be reacted quickly and insert watermark into original picture and sketch out watermark from watermarked picture within one second.

Cost: The price of assistance and maintenance should be minimum. As this product uses all open resources tools to make the price production is low.

Software Requirements:

Language	:	Java (JDK1.6)
J2EE	:	JSP & Struts1.2
Scripting	:	Java Program & CSS
Operating System	:	Microsoft Windows 2000/XP
IDE	:	My Surpass 6.6
Server	:	Tomcat5.5
Database	:	MySQL
Hardware requirements:		
Processor	:	Intel Pentium 4
RAM	:	256 MB
Hard Disk	:	40 GB

3.4. SECURITY REQUIREMENTS

The basic security blocks are Verification, Permission, Reliability, and Accessibility Management.

Authentication: To assure that data originates from a particular party. Authorization: It is the procedure of deciding if someone or something is allowed to have entry to assistance or a resource.

Integrity: It is the procedure of preventing, discovering improper adjustment of data during or after transit.

Confidentiality: To help protect a visitor's identity or data from being read.

Access Control: It is a much more typical way of talking about controlling entry to a resource.

3.5 FEASIBILITY REPORT

Introduction:

A feasibility research is a high-level pills edition of the whole System research and Design Process. The research begins by identifying the issue description. Practicality is to figure out if it's value doing. Once a popularity issue description has been produced, the specialist develops a logical style of the system. A search for solutions is examined carefully. There are three parts in feasibility research.

Technical Feasibility:

Evaluating the specialized feasibility is the hardest part of a feasibility research. This is because, presently, not too many detailed style of the system, creating it difficult to get access to problems like efficiency, expenses on (on consideration of the kind of technological innovation to be deployed) etc. A number of problems have to be regarded while doing a specialized research. Understand the different techniques engaged in the suggested system before beginning the venture we have to be very clear about what are the techniques that are to be needed for the growth of the new system. Find out whether the company currently possesses the needed techniques. Is the needed technological innovation available with the organization?

Operational Feasibility:

Proposed venture is beneficial only if it can be turned into computer that will meet the organizations managing requirements. Basically, this evaluate of feasibility asks if the system works when it is developed and installed. Are there major limitations to Implementation? Here are concerns that will help evaluate the operating feasibility of a project:

Is there sufficient assistance for the venture from control from users? If the present system is well liked and used to the extent that persons will not be able to see reasons for modify, there may be level of resistance.

Are the present business techniques acceptable to the user? If they are not, Customers may welcome a modify that will bring about a more efficient and useful techniques.

Have the individual been engaged in the preparing and growth of the project?

Early involvement decreases the chances of level of capacity the system and in typical and increases the likelihood of effective venture.

Since the suggested system was to help decrease the problems encountered. In the current manual system, the new system was regarded to be efficient feasible.

Economic Feasibility:

Economic feasibility efforts 2 weigh the expenses of creating and applying a new system, against the advantages that would collect from having the new system in position. This feasibility research gives the top control the financial justified reason for the new system. An easy financial research which gives the real comparison of expenses and advantages are much more meaningful in this situation. In addition, this proves to be a useful reference factor to compare real expenses as the venture moves along. There could be various kinds of intangible advantages due to automated. These could consist of increased customer assistance, improvement in product excellent better creating decisions timeliness of data, speeding up activities, improved accuracy of functions, better documentation and documentation, faster collection of data, better employee spirits.

Chapter 4

SYSTEM ARCHITECTURE

4.1. SYSTEM ARCHITECTURE

The system is consisting of a LoggingFramework and a Log Analyzer system. The former, depending on the AJAX technological innovation, records and records all of the learners' connections with the e-testing system interface (running in the Web browser). It can be instantiated in any e-testing system and is further consisting of a client-side and a server-side factor. The latter is a stand-alone system that examines the records to be able to sketch out information from them and to graphically signify it.

4.1.1 The Logging Framework

The purpose of the Logging Structure is to collect all of the student activities while surfing around websites of the evaluate and to shop raw information in a set of log data files in XML structure. The framework is consisting of a client-side and a server-side factor. The former factor is responsible for "being aware" of the activities of the student while s/he is surfing around the test's WebPages and for sending information relevant to the taken activities to the server-side factor. The latter gets information from the consumer and creates and stores log data files to the hard drive. Despite the needed interaction level, due to the availability of AJAX, it has been possible to implement the client-side part of our framework without creating plug-ins or exterior segments for Web ie. JavaScript has been used on the consumer to catch student connections, and the communication between the consumer and the hosting server has been applied through AJAX technique calls. The client-side programs are included to the e-testing system WebPages with little attempt by the designer. The occasion facts are gathered on the Web internet browser and sent to the hosting server at regular durations. You should note that the presence of the JavaScript segments for getting activities does not prevent other programs packed in the site to run effectively. The server-side factor has been applied as a Coffee Servlet, which gets information from the consumer and keeps them in an XML papers that is published to the hard drive when the student sends in the evaluate. The Logging Structure can be instantiated in the e-testing system

and then enabled through the configurations. The information Model used for the log facts are quite easy and is proven in Fig. 6. The facts are organized per student evaluate period. At this level, the username (if available), IP address of the student, period identifier, and agent information (browser kind, edition, and managing system) are logged. A period factor contains a history of occasion components. Your information regarding individual connections are the following:

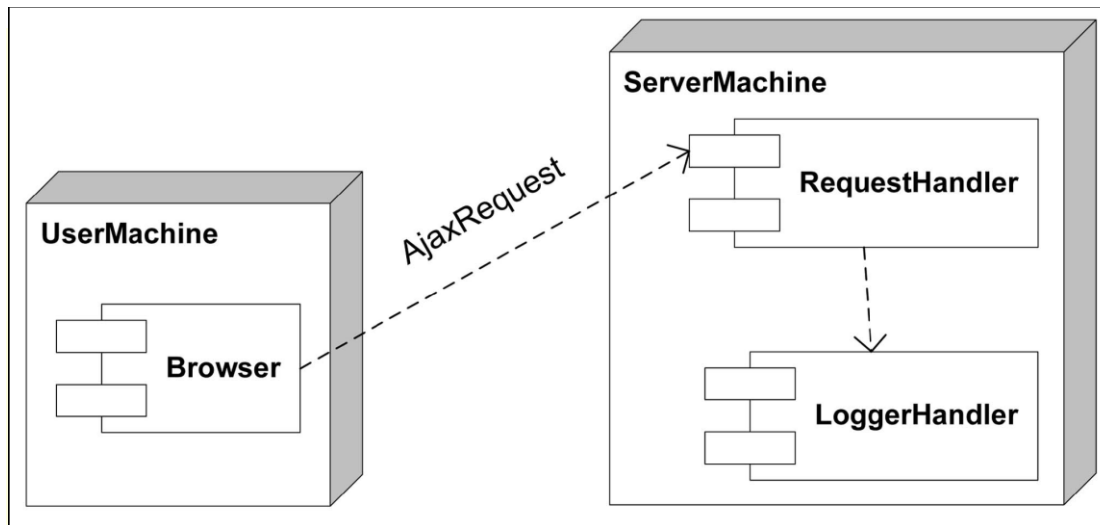
- event kind,. HTML resource product engaged in the occasion (if present),
- mouse information (pressed option and coordinates),
- timing information (time stamp of the event), and
- more information particular of the occasion, i.e., for a “response” occasion (a reaction given to a question),the concern and option identifiers with the indication of whether the reaction was right or wrong are recorded.

An essential concern in signing is the log size. If a try things out has a large set of students and the evaluate is consisting of many concerns, log data files can reach big styles. A configurations system, including the following configurations settings, has been designed to be able to decrease log sizes:

- list of activities to catch,
- subset of features for each occasion,
- sections of the websites (divs or desk cells) to be monitored as occasion resources,
- time interval between two data signals from the consumer to the hosting server, and
- sensitivity for rabbit motions (short motions are not captured).

On the consumer part, everything can be done in the Web internet browser. The JavaScript segments for occasion getting are dynamically produced on the hosting server according to the configurations settings, are downloaded, and run in the internet browser translator. Information is

sent to the hosting server through an AJAX request. On the hosting server part, a factor known as RequestHandler gets information and sends them to a factor known as LoggerHandler, which arranges the XML papers in memory and eliminates it to the hard drive whenever a student evaluate period finishes. The structure of the framework is graphically represented in Fig. .



4.1.2 The Log Analyzer Application

The data research and evaluate creation functions are conducted by a Web-based stand-alone system, optionally organized on the same hosting server of the Logging Structure, which requires as feedback the XML log data files. The Log Analyzer Application is consisting of two modules: the Question Website and the Data Turbine. The Question Website factor performs concerns on the log data files to be able to obtain the desired data as an instance of information style. Since the log data files are in XML structure, the concerns necessary to execute the above operation have been indicated in the XQuery terminology and have been conducted on the log data files by using an efficiency of the JSR 22—XQuery API for Coffee. Once information in the structure proven in Fig. 6 is acquired, these are given as feedback to the Data Turbine factor. This factor has been applied through a Coffee Servlet, which requires the identifier of the student whose evaluate is going to be examined as a parameter. The factor dynamically produces the

chart and returns it in the PNG structure. To produce the maps, the Conventional Gadget Tool set (SWT) API has been used. The option of dynamically constructing maps decreases the space necessary for the storage of the images: for caching purposes, only pictures acquired within the internet browser period are saved on the hosting server and are removed at the end of the period. With this strategy, the calculations necessary to construct each imagined chart is implemented once per evaluate research period, even when the same chart is imagined more times during the same period

Chapter 5

IMPLEMENTATION

A venture is a sequence of activities that aim at fixing particular problems within a given period of your energy and energy and in a particular location. The activities consist of time, money, human and material resources. Before accomplishing the goals, a venture goes through several levels. Implementation should take position at and be incorporated into all levels of the venture cycle.

Implementation is the level where all the planned activities are put into action. The most crucial level in accomplishing a new effective system and in giving confidence on the system for the customers that works wisely.

The system can be applied only after through examining and if it is found to execute according to the specification. It contains meticulous preparing, investigation of the present system and its constraints on efficiency.

A system applying the suggested strategy. The system records all the connections of students with the e-testing system user interface. In particular, it records the event of concern surfing around and responding to activities by the students and uses these data to visualize maps containing a date evaluation of tests. Other than determining the most frequently employed techniques, the teacher can figure out their effectiveness by correlating their use with the ultimate

evaluate scores. Moreover, the suggested system helps instructors to identify connections among questions: if a concern contains a suggestion to solve other concerns, this is made quickly visible in the maps. Last, we give a first glance at the way our system can be used for discovering illegal habits from the students, such as being disloyal by watching on others' screens and gaming-the-system efforts. The system is Web centered and relies on the AJAX technological innovation to be able to catch all of the learners' connections with the e-testing system user interface (running in the Web browser). The system is consisting of a signing framework that can be instantiated in any e-testing techniques and a stand-alone system that examines the records to be able to sketch out information from them and to graphically signify it.

Instantiation of the Logging Structure :

The Logging framework has been instantiated in an current Web-based e-testing system, named OnlineTest, which is used for assessing the learner's understanding by creating (the tutor) and getting (the learner) online tests depending on multiple-choice concern kinds. OnlineTest switches into the traditional three-tier structure of the most typical J2EE Web applications. The Jakarta Struts framework has been used to back up the Model 2 style model, a variation of the classic Model Perspective Operator (MVC) strategy. Struts provides its own Operator factor and communicates with other techniques to offer the Model and the Perspective. In our style option, Struts works with JSP for the Perspective, while it communicates with Hibernate, a highly effective framework for object/relational persistence and query assistance in Coffee, for the Model. The system is completely available through a Web browser: no plug-in set ups are needed, since it only delivers completely available HTML value and the engaged client-side programs conform to the normal ECMAScript terminology. You should note that the system has been tested on recent versions of most typical ie (i.e.,Internet Explorer, Netscape Gps, FireFox, and Opera). The incorporation of the Logging Structure in the OnlineTest system has been rather easy. For the incorporation of the server-side factor, the Coffee Archive (JAR) file containing the framework sessions has been brought in as a library in the system. Furthermore, an alteration to the body's implementation descriptor has been necessary. For the incorporation of the client-side factor, it has been necessary to consider the structure of the OnlineTest system user interface. The evaluate

is launched in a child internet browser screen of the system website. This screen shows a timer to inform the student of enough time left to complete the evaluate and contains the manages to flow (forward and in reverse buttons) between the concerns and the option to submit the evaluate. The system and the type containing the options are packed in an iframe screen placed in the center of the site. The JavaScript segments for getting the activities have been engaged in both the exterior screen and the internal iframe, while the segments for interacting with the hosting server have only been engaged in the main web page. To be able to identify the resource factor of the activities, the HTML value of the OnlineTest user interface has been slightly customized by adding HTML factor identifiers to several components (form interactive components such as labels and radio buttons).

5.1 LIST OF CLASSES AND INTERFACES USED

1. AddQuestionAction
2. FinishExamAction
3. GetAllQuestionsAction
4. GetAllstudentsAction
5. GetGraph
6. LoadQuestionAction
7. MonitorTestAction
8. QuesmanagementAction
9. StudentLoginAction
10. StudentLogoutAction
11. StudentRegistrationAction
12. HibernateSessionFactory

13. StudentDbDAO

5.2. METHODS USED

1. createDataset

```
XYDataset createDataset(Vector<Vector<String>> map, Vector<Double> fvec)
```

2. createChart

```
String createChart(final XYDataset dataset, Sequence unname)
```

Chapter 6

TESTING

A main purpose of examining is to identify application failures so that problems may be discovered and repaired. This is a non-trivial pursuit. Testing cannot identify that a product functions effectively under all circumstances but can only identify that it does not function effectively under particular circumstances. The opportunity of current application examining contains examination of value as well as efficiency of that value in various circumstances as well as examining the excellent factors of code: does it do what it is supposed to do and do what it needs to do. There are several different levels of examining that are done throughout the application growth procedure. These are outlined in the desk below:

6.1. Forms of Assessments Used

TEST TYPE	DESCRIPTION	WHITE/BLACK BOX
Unit	Tests the connections of little segments of a system.	White Box

Integration	Tests the connections of little segments of a system.	White or Black Box
Acceptance	Testing conducted by a individual to verify that the system meets the popularity criteria.	Black Box
Regression	Tests new efficiency in a system. Regression examining is done by operating all of the previous device tests published for a system, if they all complete, then the new efficiency is included to the value base	White Box
Functional and System	Verifies that the whole application system meets the requirements	Black Box

6.2. TEST CASES

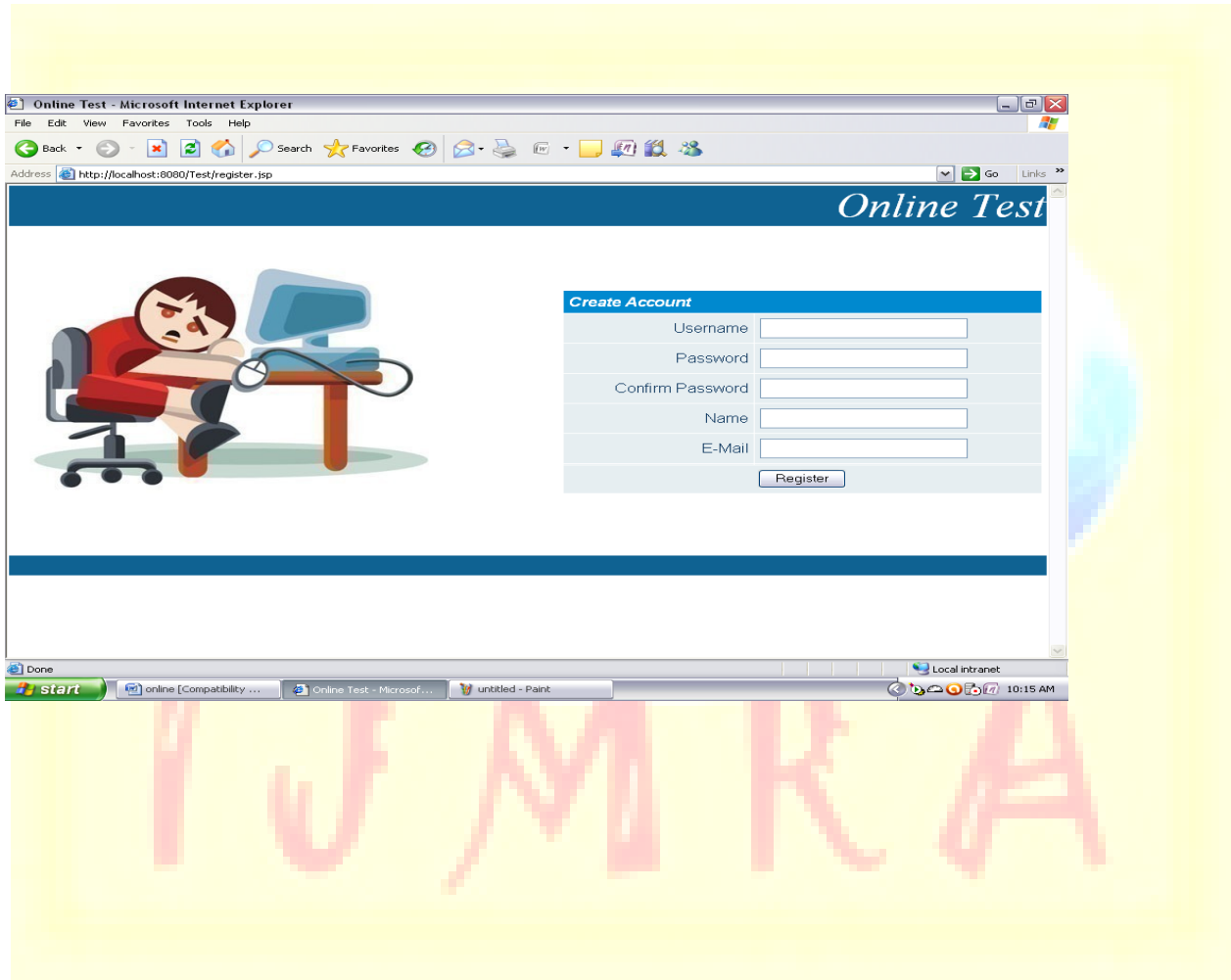
In typical a evaluate situation is a set of evaluate data and evaluate programs and their expected outcomes. A evaluate situation in application technological innovation normally consists of a unique identifier, requirement references from a style specification, preconditions, activities, a sequence of steps (also known as actions) to follow, feedback, outcome and it validates one or more system requirements and produces a complete or fall short.

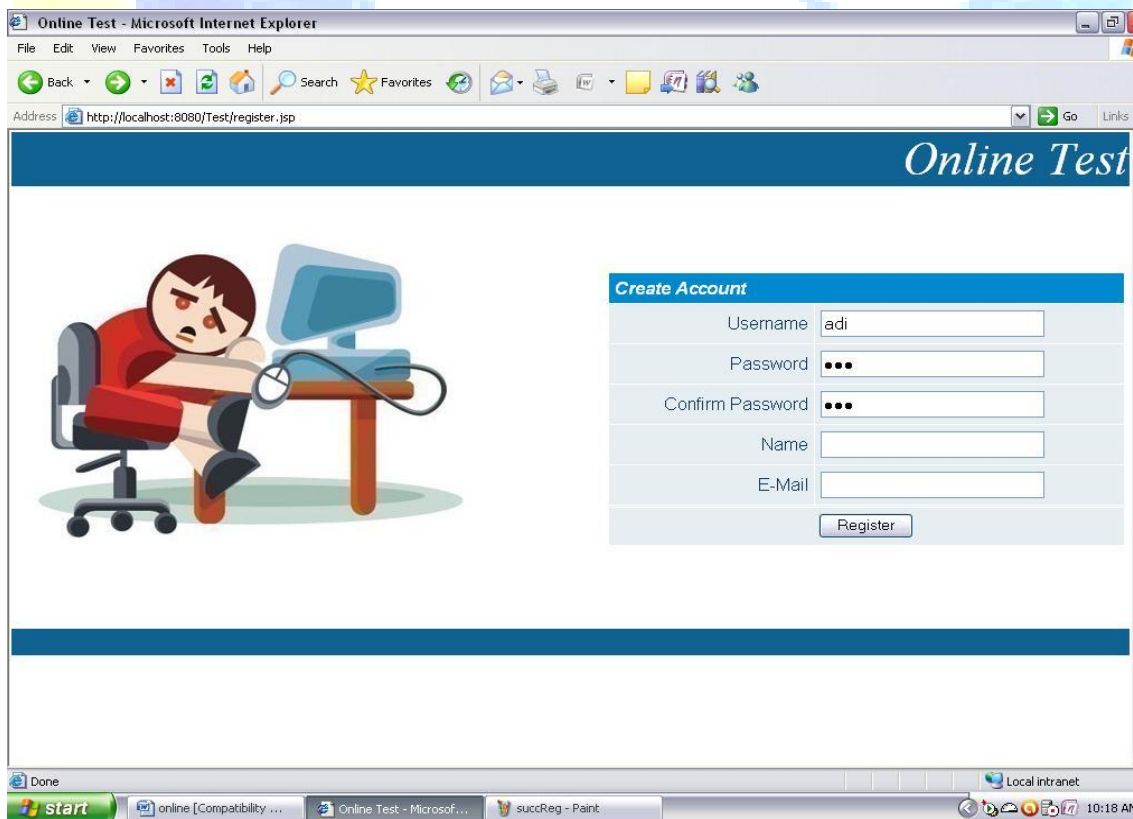
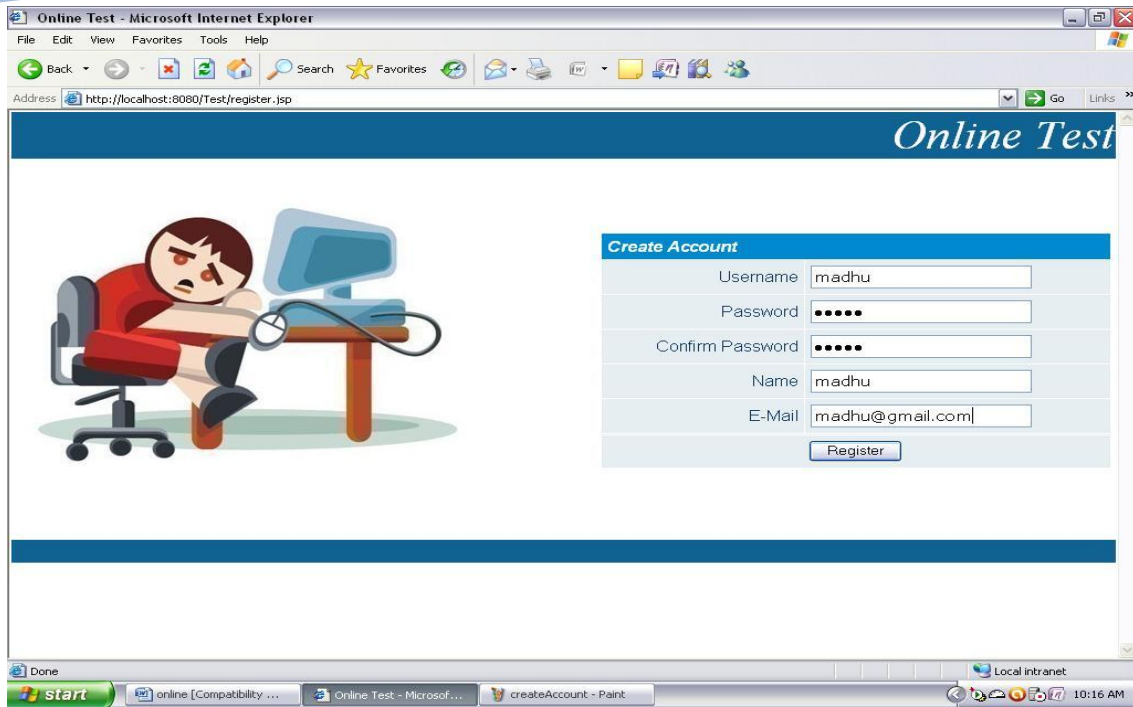
Test Case 1

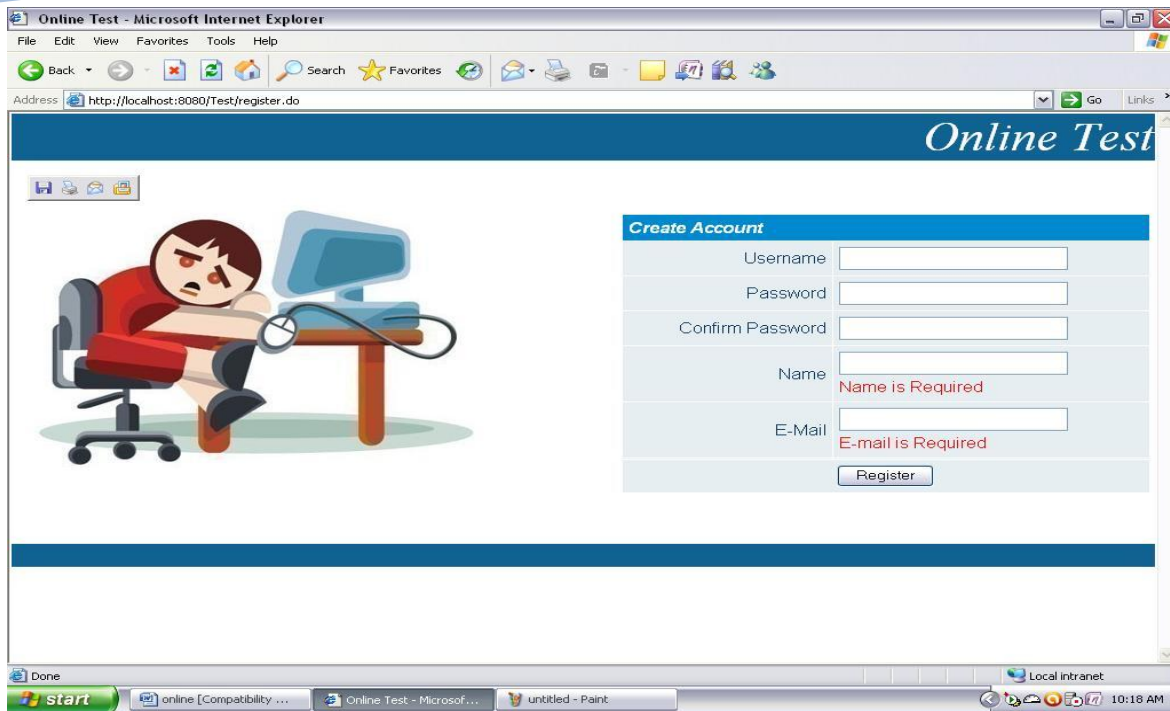
Test Objectives: User Registration

ITEM NO	TEST CONDITION	INPUT SPECIFICATION	OUTPUT SPECIFICATION	PASS/FAIL

1	Create User if all fields are valid	<ol style="list-style-type: none"> 1. Enter all details 2. Missing any fields 	<ol style="list-style-type: none"> 1. Create User 2. System Displays Error Message 	<p>PASS</p> <p>PASS</p>
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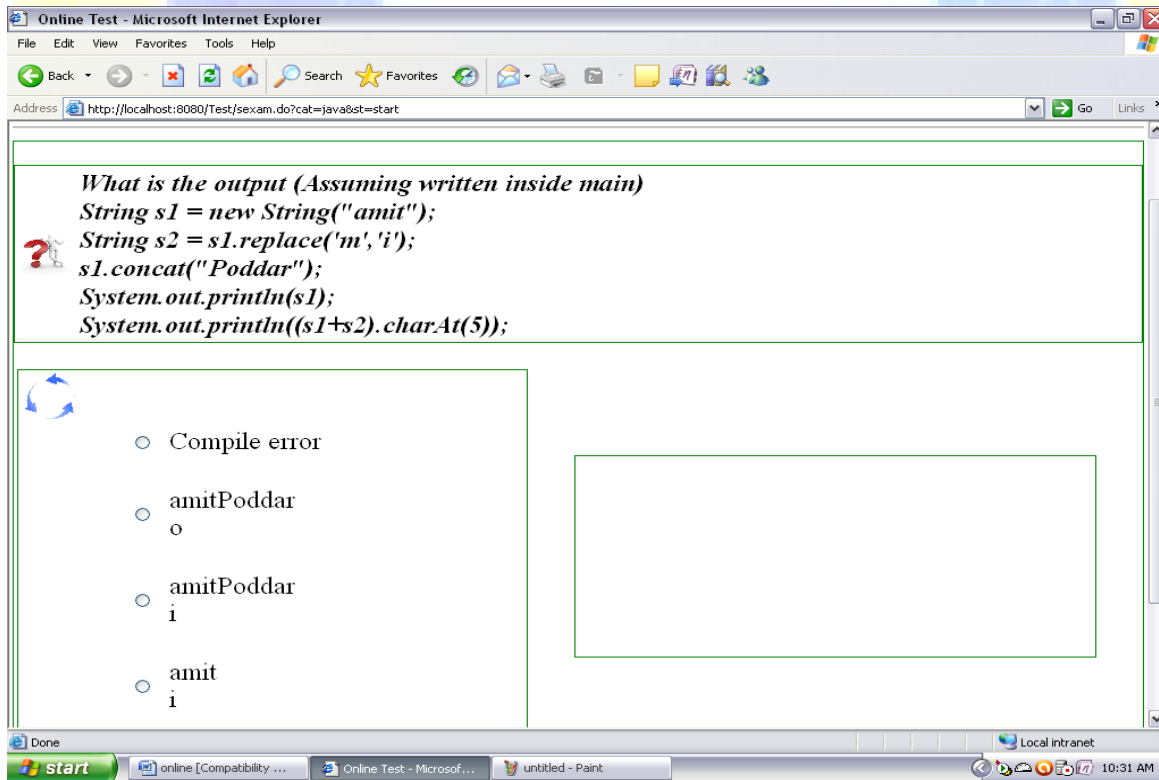
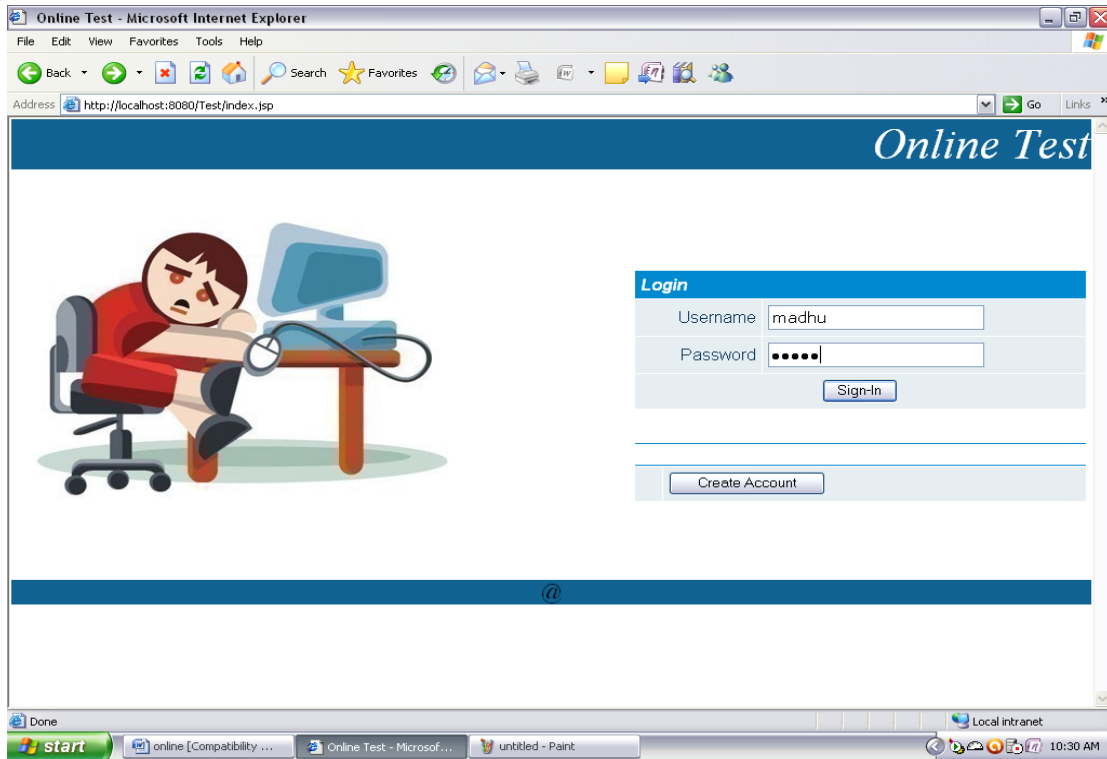


Conclusion: Here we evaluate individual signing up. If all areas are legitimate then outcome is complete otherwise shows error concept here also outcome is complete.

Test Case 2

Test Objectives: User Sign in and getting test

ITEM NO	TEST CONDITION	INPUT SPECIFICATION	OUTPUT SPECIFICATION	PASS/FAIL
2	User login and taking test	1. valid login details 2.invalid login details	1.Test page 2.System Displays Error Message	PASS PASS



Online Test - Microsoft Internet Explorer

Address: http://localhost:8080/Test/endexam.jsp

Online Test

Welcome madhu [Logout](#)

Thank You...

Your Results...

Correct Answered [3], Question Numbers: [4, 9, 11]
Wrong Answered [9], Question Numbers: [1, 3, 5, 6, 8, 10, 12, 13, 15]
Not Answered [3], Question Numbers: [2, 7, 14]

Done

start online [Compatibility ...] Online Test - Microsof... untitled - Paint Local intranet 10:34 AM

Online Test - Microsoft Internet Explorer

Address: http://localhost:8080/Test/login.do

Online Test

Login

Username:

Password:

Login Failed

Done

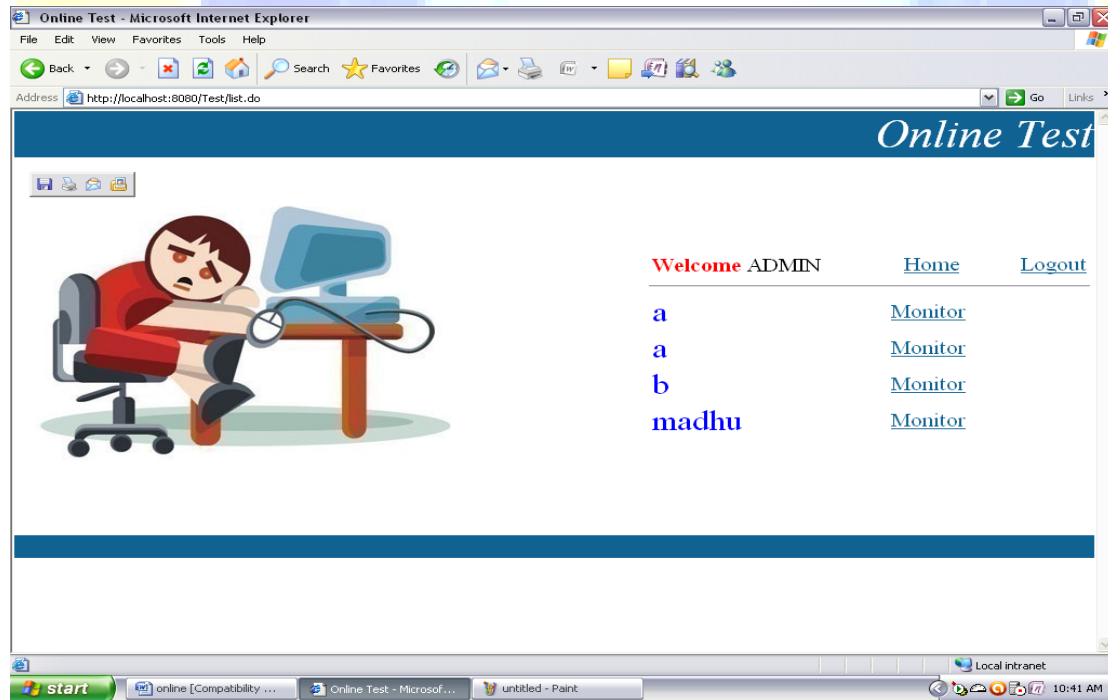
start online [Compatibility ...] Online Test - Microsof... untitled - Paint Local intranet 10:35 AM

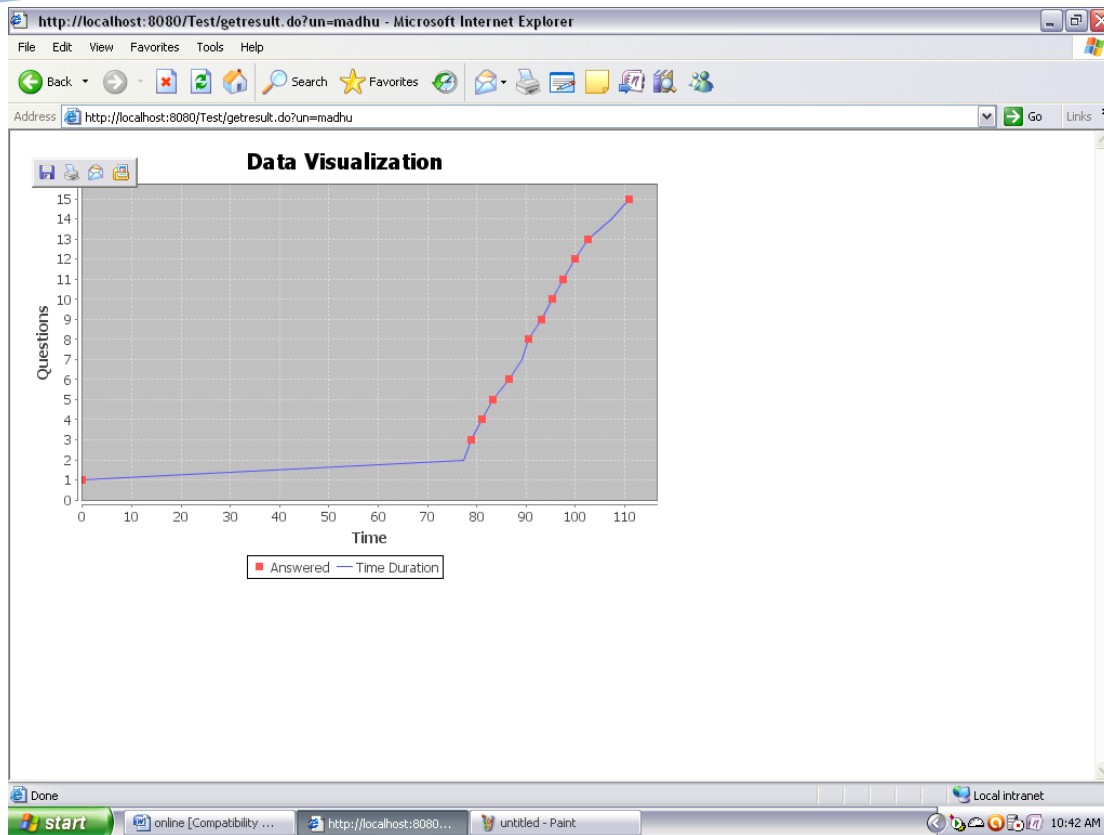
Conclusion: Here we evaluate if individual is legitimate, he can take evaluate and enjoy his outcome. Otherwise, System shows Mistake Message. .

Test Case 3

Test Objectives: Instructor Analysis

ITEM NO	TEST CONDITION	INPUT SPECIFICATION	OUTPUT SPECIFICATION	PASS/FAIL
3	Graph on user's test	Dataset collected by system while monitoring the test	Graph that can be used for analysis	PASS



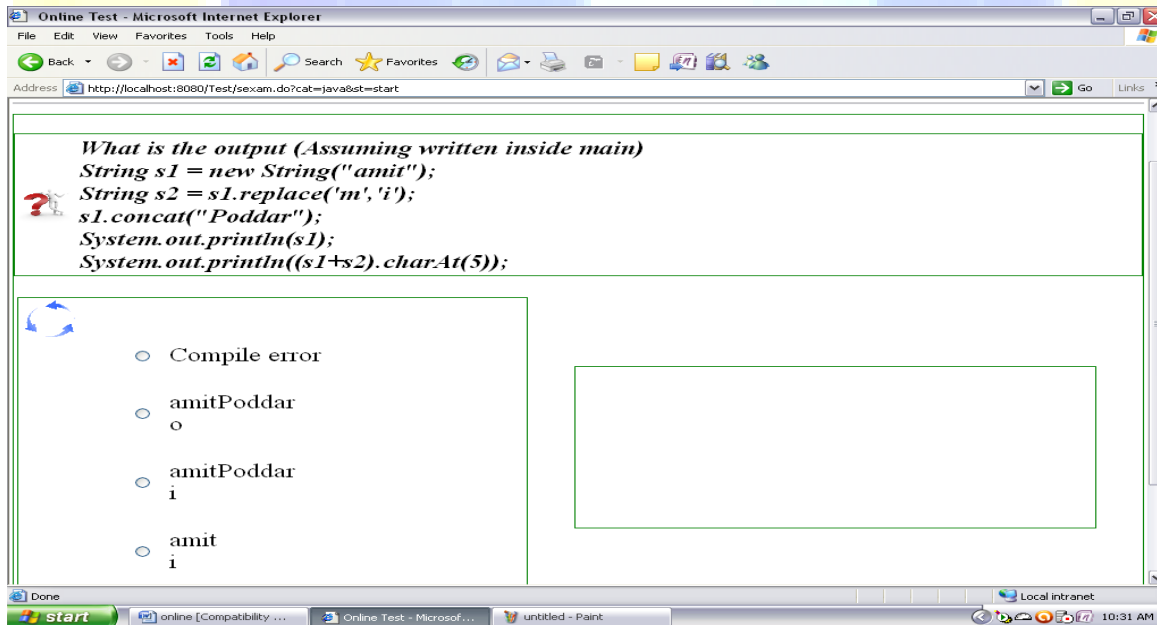
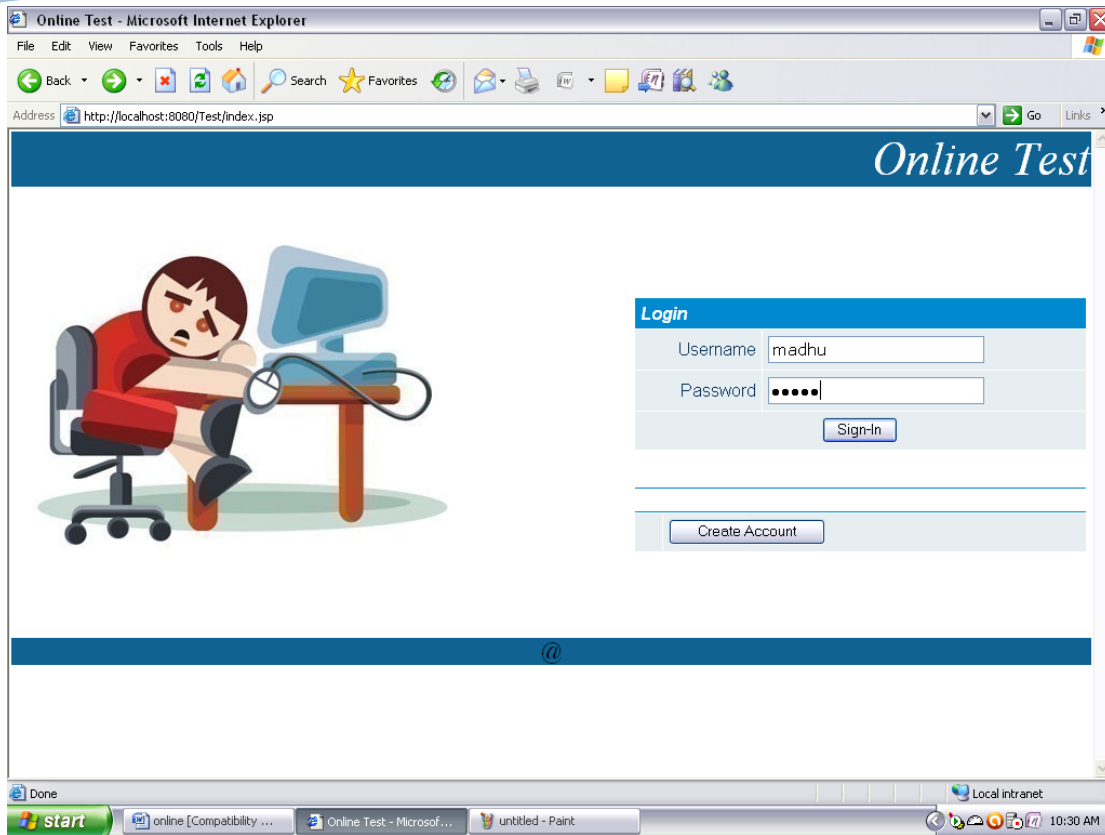


Conclusion: Here we evaluate whether system shows information illustrating student's behavior.

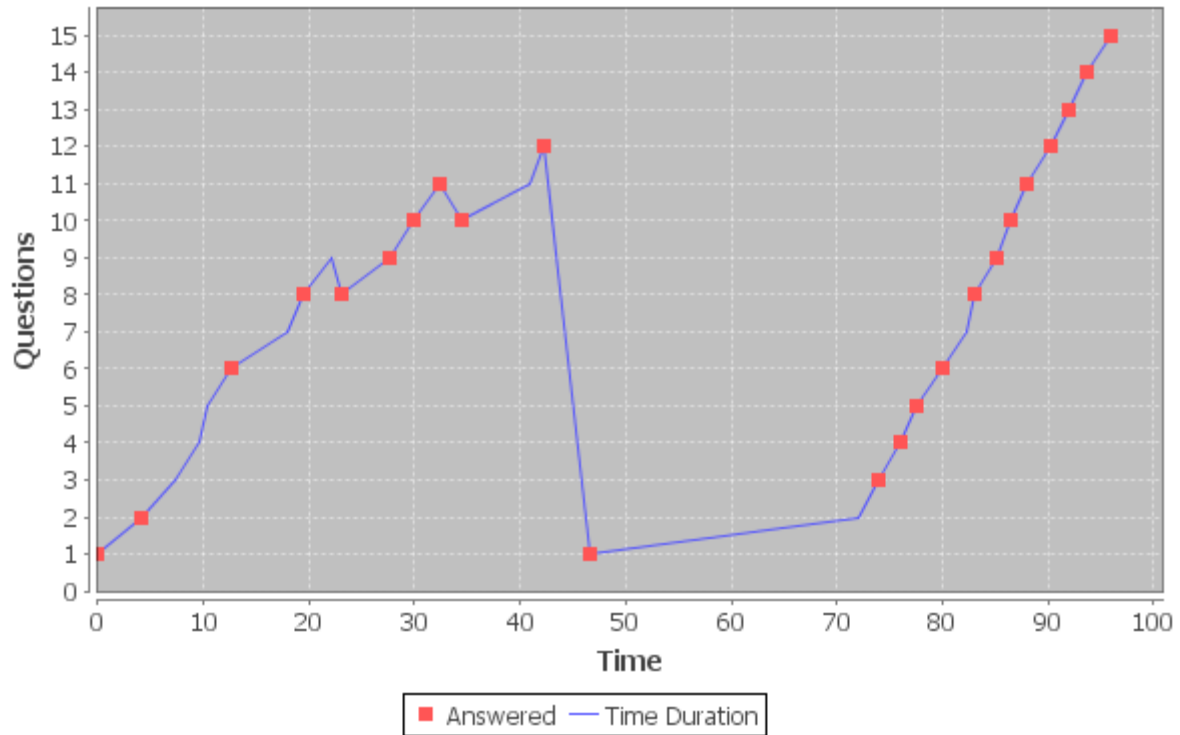
CONCLUSION AND FUTURE WORK

We have presented a strategy and a system to let instructors observe learners' techniques during online tests. The strategy uses data creation to sketch information characterizing the learner's evaluate strategy, to be able to trigger the tutor's attention and to let him/her find out formerly mysterious behavior styles of the students and conceptual connections among evaluate products. In this way, the teacher is provided with a highly effective tool that allows him/her evaluation the whole evaluation procedure and evaluate possible improvements. We have substantially used the applied system experimentally to evaluate online evaluate techniques in the courses of our staff, to be able to evaluate the whole strategy. This allows us find out several relevant styles regarding the evaluate excellent, you will of used techniques, and the effect on the ultimate score. Later on, we would like to develop new visual representations and execute further tests, possibly in combination with traditional data exploration methods.

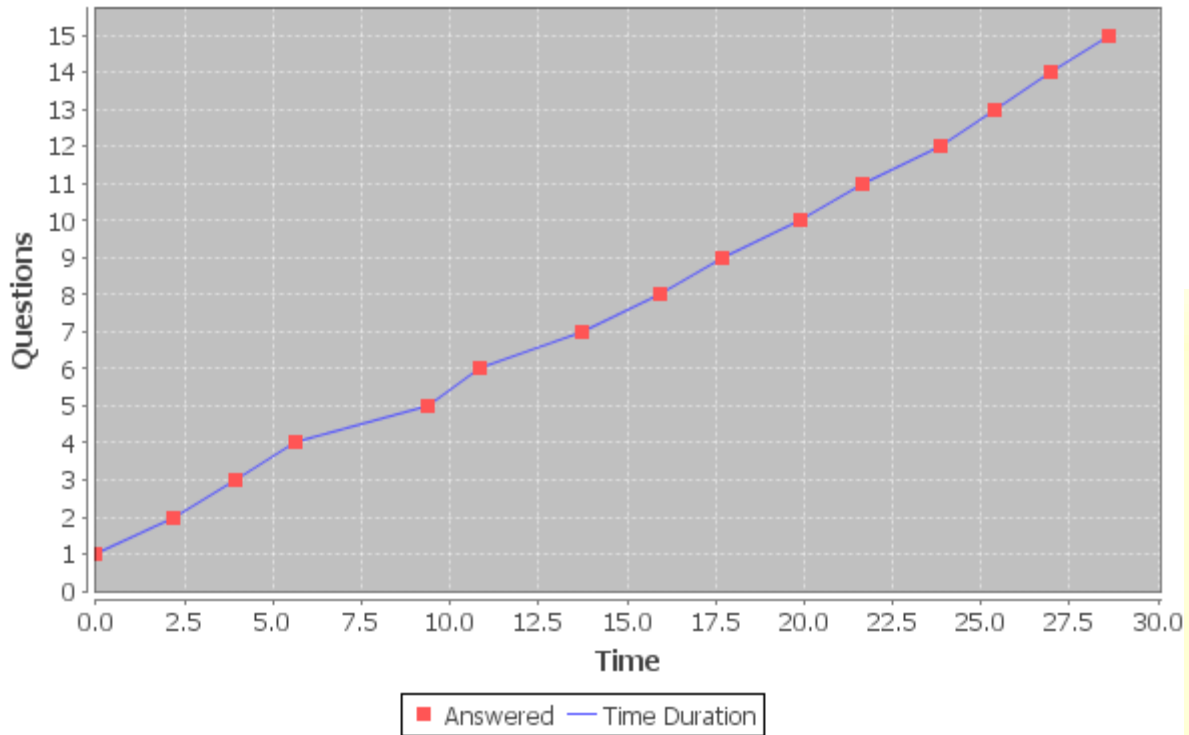
Moreover, since the strategy lends itself to the system to other system areas such as e-commerce, in the long run, we would like to evaluate its use in these situations. Finally, we wish to find more deeply the issue of being disloyal recognition, which we just treat in broad conditions here, since we believe that an strategy depending on signing and creation can be promising and effective to this aim.



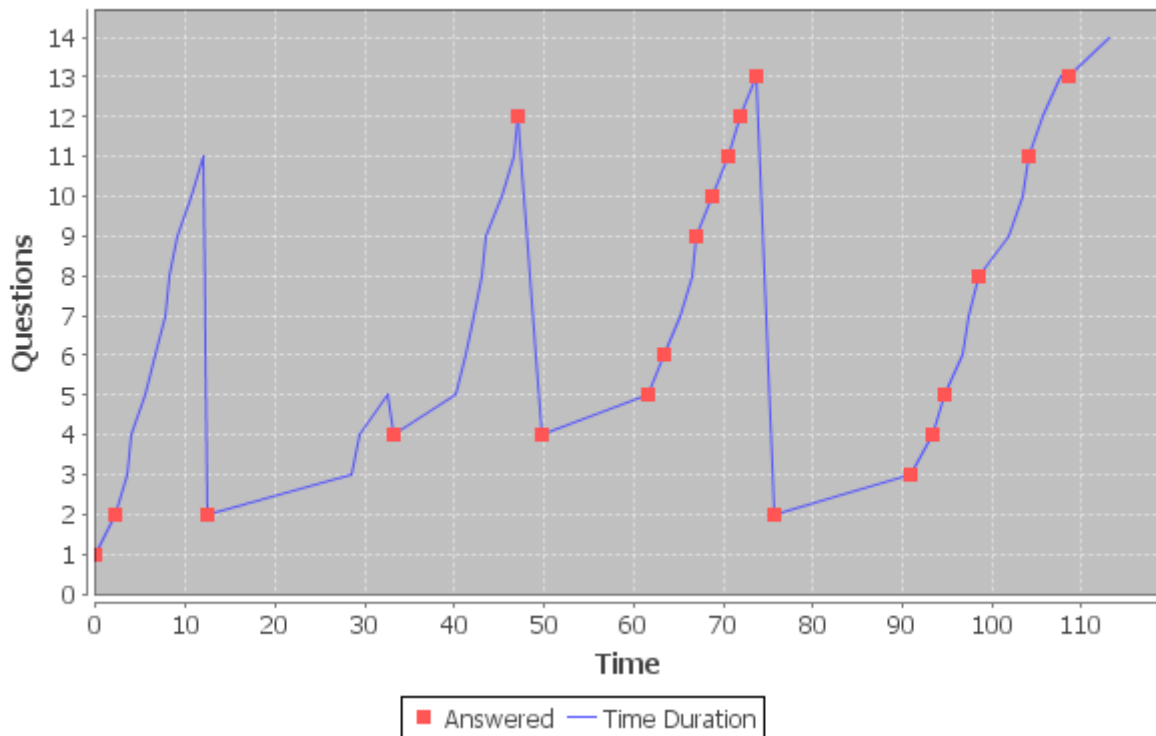
Data Visualization



Data Visualization



Data Visualization



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