IMPLEMENTATION of ELECTRONIC SYSTEM PARTICULARLY to CANDIDATES APPLYING for ADMISSION to PEASS COLLEGES

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Abstract— Evaluators in tests committees at the colleges of physical education and sports science (PEASS) are facing a great efforts at beginning each academic year, in the subject of the special acceptance for students applying for admission in the Iraqi colleges PEASS. As well as to the high increase in the number of candidates students to reserve a seat in the field of sport education. There are many tests conducted for each student, where the standardized scores calculated accordance to manual methods, then extract the number required for admission, this work faced many problems, through a difficulties of showing the results accurately and quickly, and many errors it can happen dramatically with the large number of candidates and the lack of time, in addition to the discrimination or preference some than others. This research aims to solve this problem through shifting from manual work to an electronic work, it has been using visual basic.net to build this system, where the system calculates and find standardized scores for each student for many activities, the system contain main database installed in a central server computer, a series of distributed computers in many locations are connected to the server, the system works from the moment of registration in web, and contain many specialized windows for various committees, all tests conduct and inputs electronically. The system calculates values for each student and then the declaration of acceptance results given quickly and with high accuracy with the show a lot of charts and reports.

Keywords: physical education and sports science, physical tests, skills tests, Admission tests, Medical tests.

1. INTRODUCTION

Administrative concept “e-management” is an integrated electronic system designed to transform the administrative work from manual management to improved electronic-management used computer application within an organization, to reduce administrative working costs and upgrade performance achievement, and overcome the problem of geographical and temporal dimensions, addressing bureaucracy, bribery. In other words, to reforms administrative structure of society and the development of working mechanism and keep up development. Moreover, to overcome the daily business problems with informatics infrastructure safe and strong and compatible with each other. Management involves identifying the mission, objective, procedures, rules and the manipulation of the human capital of an enterprise to contribute to the success of the enterprise. E-System is one of the mutations the scientific and technological development.

The electronic administration and management is concentrated on the branches of the E-Systems, in additional to this development is the availability of computers and provides Internet are integrated these factors to help the prosperity of the E-administration and E-management Administration is ‘the effective management of the coordination and control of business.
processes and the electronic information they create’. This definition has two main objectives: first increase the efficiency of administrative processes within institutions and second lessen the administrative burden faced by all staff during this process [1, 2].

1.1 E- MANAGEMENT
Nowadays electronic management or online management provides applications in the developed countries, in addition, developing countries and those countries in the stage of economic transition period in the market begin to apply this concept [3].

1.2 DIMENSIONS OF ELECTRONIC MANAGEMENT
There are many dimensions related to e-management mentioned below [4]:

i. Management Paperless.
ii. Remote management.
iii. Real-time management.
iv. Management anytime, anywhere.

The e-management is the most important applications of information technology. Therefore this electronic system should support the electronic management. Implementing the e-Management brings changes within the universities, predominantly within their culture. Interested in network management is essential in providing services via the “Internet” as the key in the exchange of information and communication, and provide solutions, consults and document in the best of the management mechanisms. An important issue is to understand the concepts of e-environment including e-management and it is important to focus on the feasibility of the great benefits that will be get via the application of this environment. [5]

2. RESEARCH PROBLEM
The deal with the students’ tests and obtaining the values of these tests manually is difficult for many committees annually during the tests for many reasons, including:

A. timetable of the tests
B. great increase in the number of applicants
C. effect of subjective or personal bias in selective process
D. Many mistakes that happen in account the standard grading tests
E. Enormous amount of paperwork and files that behaved in the tests and the space occupied
F. Provide a large number of teaching staff to conduct these tests

3. RESEARCH HYPOTHESIS
The use of e- management means paid to the following research questions:

A. Is it possible to design an electronic system to avoid falling into these problems?
B. Is it possible to get the job done as quickly and required accuracy?
C. Does the system have the ability to save data (files, students and documented)?

4. The RESEARCH AIMS

The research aims mainly to:

1. Improve Services by developing an electronic system to manage committee’s tests automatically and avoid falling in the previous mistakes, reduce paperwork, reduce movement and Easy access to information.
2. Accuracy and speed of completion of the test results
3. Student data electronically documented in the database for use later
4. Eliminate personal bias and apply principle of transparency.

5. PREFACE of the SYSTEM
This system represents a great importance for PEASS colleges that depend on principle of competitive tests for admission, through the elimination of manual work and shift to automate the testing operations to avoid past mistakes, so in the light of recent developments and the need to shift to modern electronic methods. As a result of the considerable effort being done by staff of PEASS colleges through the work in the committees of the tests each year and increase steady in the number of students in order to complete the tests and the calculation of their results, which are the standard scores calculated for each test according to the traditional computational methods. By reference to the a table the Commission should identify the student degree after comparing with the corresponding values in game table, to be then extract the required number of students according to their
scores, and this produces many problems through the difficulty of taking out the results accurately and quickly, error and omissions incoming, so instead of referring to paper records which are sometimes prone to damage or arson or other reasons already mentioned, and the errors that may occur because of it. So it has been building electronic system that serves as the work of these committees, where the system is saved in a central computer containing a database and linked by a group of Distributed Computing of where tests are conducted, the system works from the moment of the electronic registration of the student in the tests performed for each student and ends with the final outcome of students admitted, Where the system calculates the standard grades and grading equivalent and finding the arithmetic mean and standard deviation and coefficient of sprains and then send the results of the tests to students, the system applied in the year 2015 and worked properly without making mistakes in addition to document all the data in database and export the records of admitted students to the registration unit for the purpose of registration at the college.

6. SPECIAL ADMISSION TESTS

Admission tests in the PEASS colleges classified into four multiple groups are:

6.1 Medical Tests
There are many medical tests, as clear in the diagram (1), the student must be passed, and that the failure of one of the tests refuses to accept and cannot complete the rest of the subsequent tests, and needs in the work of the committees into many devices such as Restameter and Skinfold Calipe and Weighting Scales or by look, the tests of specialized committees and ingenious in this area include these tests:

6.1.1 Height Measurement Test: the student is subject to examination by a length Restameter device, you must pass the minimum limits for length.
6.1.2 Weight measurement Test: According Weighting device is subject to examination of the thresholds and higher.
6.1.3 Feet. Test: examines the student’s feet in accordance with the measurement of natural considering painting.
6.1.4 Body Test: examines the student physically, if there are abnormalities in the spine or upper limbs or lower and given examination.
6.1.5 Optometry Test: through the gauge plate natural look.
6.1.6 Body Hull Test: examines the student through the curvature of the body forward, raise your arms, and see the consistency of the arm.

![Diagram (1) represent medical tests](image)
6.2 Physical Tests

Physical tests divided into five basic tests are, as see diagram (2), higher degree assessment is forty degrees:

6.2.1 (Run 60 Meters) Test: is the test to measure the maximal speed for each candidate.
6.2.2 (Run 540 Meters) Test: in this test is to measure carry-out of competitors speeds.
6.2.3 Broad Jump Test Of Fortitude: the explosive power of the legs measure and record the jump distance.
6.2.4 Drag On The Horizontal Bar Test: find out of the power of the arms and record the number of each one of the candidate.
6.2.5 Abdominal Exercise Test: find out the power of the abdominal muscles and record number of each rider.

6.3 Skill Tests

Skill tests divided into five basic tests are, as shown in the diagram (3), the total degree of the Supreme evaluation of these tests are (twenty degrees) five degrees per game as rule out an assessment of the competence of which game they take other value:

6.3.1 Testing skills in a handball game.
6.3.2 Testing skills in a volleyball game.
6.3.3 Test skills in the football game:
6.3.4 Testing skills in a gymnastics game.
6.3.5 Test skills in a basketball game.
6.4 Personal Interview & Theoretical Exam

The total degree evaluation of this test is ten degrees for interview and ten degree for exam. The last two of these tests, the first test of types is the theoretical test are written test designed to identify the advanced level of the student in the theoretical level of Physical Education, and the second test is a personal interview. Its purpose to find out the student's personal knowledge and efficiency. As mentioned previously, as in the diagram(4), the committees personal interview and theoretical exam call each student individually and check his character and his name and then know this ability by asking questions and then grades obtained by the student in front of the inclusion of each test field.

7. Implementation of the System (Some Windows of the System)

7.1 System Login Window

At the beginning of implementation, the special security window will appear to the user, see Fig (1). It is a private Steering authorized to work in it, there are multiple competent authorities according to the tests committees, and divides the work to administrative that manages the work and contribute to solve the problems that may occur in the system and have done a specific and only when needed, in addition to other committees Members that operate within the tests. Where you cannot log in to the system only after the availability of the conditions of entry, namely, (the authorized employee and his password), otherwise the system will send an alert to the user messages, as in Fig (2).
7.2 Special committee’s window

The distribution of work committee’s tests through the following window, as shown in Fig (3), where it starts by clicking on the name of the test committee then other security window appears, especially to serve members of this committee for the specificity of the work of each committee. The Special Committee window is not allowed to enter the page without the password of its. The system designed to be a multi-input and multiple interfaces according to the respective test details.

Test result conduct in accordance with synchronized times or asynchronous, and on more than one computer attached to the network where the system allows working on many computers at the same time, to exploit the resources and the rapid completion of the tests as per the Committee could divide its work on more than one person, and each one window is controlled by the inputs, see fig (4).

the supervisor of the test call each candidates according to customized windows committees tests to determine the identity and number of the competitor student to enter data obtained after each test, then supervisor enters a code of student or a name of student to the system, which system will automatically fetch the student’s enrollment for the supervisor to enter competitions values (time, number, distance, ..) within the custom field to preserve part of the database, later, the system will calculate the standard grades for each rider. Conduct its own skills contenders specialized committees in all game tests and on more than one computer attached to the network, as shown in Fig. (5).
Where it can implement the system linking the halls, which will conduct the tests at the same time and through the many windows committees tests, if possible, the supervisor of football skill tests to test the students according to their own symbols and enter their data into the system, as in Fig (6), and at the same time supervisor of basketball skill or handball can begin to test on students and thus, the system saves all data at the same time and each student in the database.

## Discussion

In order to analyze the results and discuss the researcher schedule data that has been obtained, and through processed in the system results it appeared as follows, table (1), show the values of (standard deviations, coefficient of torsion, the percentage of the standard error) of the tests, and special values to accept students applying To reserve seats on the faculties of PEASS, where it was noted that all standard deviations values less than Arithmetic mean and all torsional modulus values ranging between $(± 1)$

![Fig. (5) Football skill Test Window](image)

![Fig. (6) Final Student Report](image)
this shows that the sample grades are distributed naturally, proving adequate tests to the level of the amount of the sample (342), this provides for us to continue to work according to scientific conditions to extract standards and incorporated in prepared for the acceptance of the system.

Table (1) Arithmetic mean, standard deviations, and coefficient of torsion and the percentage of the standard error of the sample tests to the number of members

<table>
<thead>
<tr>
<th>Test class</th>
<th>Test type</th>
<th>Standard of Errors</th>
<th>Torsion modulus</th>
<th>Standard deviation</th>
<th>Arithmetic mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Tests</td>
<td>RAN 60m</td>
<td>0.421</td>
<td>-0.715</td>
<td>0.56542</td>
<td>8.1355</td>
</tr>
<tr>
<td></td>
<td>RAN 540m</td>
<td>0.421</td>
<td>-0.598</td>
<td>0.13046</td>
<td>1.3516</td>
</tr>
<tr>
<td></td>
<td>Jumping</td>
<td>0.421</td>
<td>0.565</td>
<td>21.8327</td>
<td>200.00</td>
</tr>
<tr>
<td></td>
<td>Drag on horizontal bar</td>
<td>0.421</td>
<td>-0.360</td>
<td>8.88626</td>
<td>38.0323</td>
</tr>
<tr>
<td></td>
<td>Abdominal exercise</td>
<td>0.421</td>
<td>0.665</td>
<td>6.39489</td>
<td>13.1935</td>
</tr>
<tr>
<td>Skill Tests</td>
<td>basketball</td>
<td>0.421</td>
<td>-0.027</td>
<td>1.31901</td>
<td>3.1613</td>
</tr>
<tr>
<td></td>
<td>football</td>
<td>0.421</td>
<td>0.284</td>
<td>1.72474</td>
<td>.9839</td>
</tr>
<tr>
<td></td>
<td>volleyball</td>
<td>0.421</td>
<td>-0.447</td>
<td>.92545</td>
<td>3.3387</td>
</tr>
<tr>
<td></td>
<td>handball</td>
<td>0.421</td>
<td>-0.017</td>
<td>1.30919</td>
<td>2.7742</td>
</tr>
<tr>
<td></td>
<td>gymnastics</td>
<td>0.421</td>
<td>-0.999</td>
<td>1.23131</td>
<td>2.8710</td>
</tr>
<tr>
<td></td>
<td>Special game</td>
<td>0.421</td>
<td>-0.700</td>
<td>1.12904</td>
<td>7.9839</td>
</tr>
<tr>
<td></td>
<td>Theoretical Exam</td>
<td>0.421</td>
<td>-0.614</td>
<td>4.39207</td>
<td>15.0968</td>
</tr>
<tr>
<td></td>
<td>Personal Interview</td>
<td>0.421</td>
<td>-0.464</td>
<td>2.40832</td>
<td>8.0000</td>
</tr>
</tbody>
</table>

9. Reports
Reports window, includes many of the keys, each key outputs the particular report, and these keys are arranged by the test, jurisdiction, type of study, the final results, including what is special to all students or as a result of certain or test individual as a result of student given or to print the student file complete the paper form or document the process in paper format, as in the fig. (7,8).
10. Conclusions

1. The system is applicable to all available data for the students of the PEASS colleges.
2. Speed, high accuracy in the completion of work compared to manual work through multi-input system across a distributed computers
3. Eliminate errors that occur manually.
4. The system is designed with graphical windows and dialogue boxes easy to use and do not require a lot of experience provides.
5. The system produce many documents in less time (such as admissions names, grades of students in a particular test, an individual report for a particular student and the value of grades obtained.
6. Document all the data in a database in order to retrieve when it needed.

References

[1] Qingshan Jiang, “implementing an e-administration system at Xiamen University”, Xiamen University, Chine, 2005.
### Appendix

Table (2) represents a degree of physical tests (for Male)

<table>
<thead>
<tr>
<th>Drag on the horizontal bar (Second)</th>
<th>Abdominal exercise</th>
<th>Broad jump meter</th>
<th>540 m/minutes</th>
<th>60 m/second</th>
<th>degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 up to 10</td>
<td>45-46</td>
<td>2.60-2.51</td>
<td>1.34-1.30</td>
<td>7.2-7.00</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>45-41</td>
<td>2.50-2.41</td>
<td>1.39-1.35</td>
<td>7.5-7.3</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>40-36</td>
<td>2.40-2.31</td>
<td>1.44-1.4</td>
<td>7.8-7.6</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>35-31</td>
<td>2.31-2.21</td>
<td>1.49-1.45</td>
<td>8.1-7.9</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>30-26</td>
<td>2.20-2.11</td>
<td>1.54-1.50</td>
<td>8.4-8.2</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>25-21</td>
<td>2.10-2.06</td>
<td>1.59-1.55</td>
<td>8.7-8.5</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>20-16</td>
<td>2.05-2.01</td>
<td>2.04-2.00</td>
<td>9.8-8.8</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>15-11</td>
<td>2.00-1.96</td>
<td>2.09-2.05</td>
<td>9.3-9.1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>10-6</td>
<td>1.95-1.91</td>
<td>2.14-2.10</td>
<td>9.6-9.4</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>5-1</td>
<td>1.90-1.86</td>
<td>2.19-2.15</td>
<td>9.9-9.7</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>1.85 up to</td>
<td>2.20 up to</td>
<td>10 up to</td>
<td>0</td>
</tr>
</tbody>
</table>

Table (3) represents a degree of physical tests (for female)

<table>
<thead>
<tr>
<th>Drag on the horizontal bar (second)</th>
<th>Abdominal exercise</th>
<th>Broad jump meter</th>
<th>400 m/minutes</th>
<th>50 m/second</th>
<th>degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>40</td>
<td>up to 2.1</td>
<td>Under 1.15</td>
<td>7.7-7.5</td>
<td>10</td>
</tr>
<tr>
<td>24-20</td>
<td>39-35</td>
<td>2.09-2.00</td>
<td>1.20-1.16</td>
<td>8.0-7.8</td>
<td>9</td>
</tr>
<tr>
<td>19-18</td>
<td>34-30</td>
<td>1.99-1.90</td>
<td>1.29-1.21</td>
<td>8.3-8.1</td>
<td>8</td>
</tr>
<tr>
<td>17-16</td>
<td>29-25</td>
<td>1.89-1.80</td>
<td>1.39-1.30</td>
<td>8.6-8.4</td>
<td>7</td>
</tr>
<tr>
<td>15-12</td>
<td>24-20</td>
<td>1.79-1.70</td>
<td>1.49-1.40</td>
<td>8.9-8.7</td>
<td>6</td>
</tr>
<tr>
<td>11-10</td>
<td>19-15</td>
<td>1.69-1.60</td>
<td>1.59-1.50</td>
<td>9.2-9.00</td>
<td>5</td>
</tr>
<tr>
<td>9-8</td>
<td>14-10</td>
<td>1.59-1.50</td>
<td>2.09-2.00</td>
<td>9.5-9.3</td>
<td>4</td>
</tr>
<tr>
<td>7-6</td>
<td>9-5</td>
<td>1.49-1.40</td>
<td>2.19-2.10</td>
<td>9.8-9.6</td>
<td>3</td>
</tr>
<tr>
<td>5-4</td>
<td>4-2</td>
<td>1.39-1.30</td>
<td>2.23-2.20</td>
<td>10.1-9.9</td>
<td>2</td>
</tr>
<tr>
<td>2-2</td>
<td>1</td>
<td>1.29-1.20</td>
<td>2.30-2.26</td>
<td>10.4-10.02</td>
<td>1</td>
</tr>
<tr>
<td>zero</td>
<td>zero</td>
<td>1.19 under</td>
<td>2.31 up to</td>
<td>10.5 under</td>
<td>0</td>
</tr>
</tbody>
</table>