Testing

Overview

In this chapter, three main ideas are introduced. They are the test plan, the scope and the features to be tested.

12.1 Test Plan

12.1.1 Introduction

Software testing is a real experience that we have to go through it to investigate the developed software. To provide real information about the quality of the product testing is an important phase. Software testing can provide an objective and independent view of the developed application to be evaluated as well as the risks of application's implementation to be maintained. Test techniques include, but are not limited to, the process of executing the application with the intent of finding software bugs. Software testing is to investigate whether the application meet the requirements that guided its design and development. Software testing, depending on the testing method employed, can be implemented at any time in the software development process.

12.1.2 Testing Types Overview

Testing is a software development process that involves checking the application with the aim of defect prevention and detection in order to reduce software deployment risks, time, and costs. There are several types of testing such as Unit Testing, Functional Testing and Acceptance testing. We will introduce each type and define the goal and main procedures of it.

12.1.2.1 Unit testing

It refers to tests that verify the functionality of a specific section of code, usually at the function level. In an object-oriented environment, this is usually at the class level, and the minimal unit tests include the constructors and destructors. The software developer or engineer performs it during the construction phase of the software development lifecycle. Unit testing aims to eliminate construction errors before code is promoted to Quality Assurance. This strategy of testing is intended to increase the quality of the resulting software as well as the efficiency of the overall development process.

Developers usually write these types of tests as they work on code. It is always called white-box style and the aim of it is to ensure that a specific function is working as expected. One function might have multiple tests, to catch invalid cases or other branches in the code. Unit testing alone cannot verify the functionality of an application, but rather it is used to assure that the building blocks the software uses work independently of each other and correctly.

12.1.2.2 Functional Testing

The testing of the functions of component or system is done using this method of testing. It refers to activities that verify a specific action or function of the code. Functional test tends to answer the questions like “can the user do this” or “does this particular feature work”. This is described in a requirements specification or in a functional specification.

Testing functionality can be done from two perspectives: Requirement-based testing: In this type of testing, the requirements are prioritized depending on the risk criteria and accordingly the tests are prioritized. This will ensure that the most important and most critical tests are included in the testing effort. In addition, business-process-based testing: In this type of testing, the scenarios involved in the day-to-day business use of the system are described. It uses the knowledge of the business processes.

12.1.2.3 Acceptance Testing

Acceptance Testing involves running a suite of tests on the completed system. Each individual test, known as a case, drills a particular operating condition of the user's environment or feature of the system, and will result in a pass or fail outcome. There is generally no degree of success or failure. The test environment is usually designed to be identical, or as close as possible, to the predicted user's environment.

These test cases are accompanied by test case input data and/or a formal description of the operational activities to be performed.

Acceptance Tests are typically created by customers and articulated in a business domain language. They are high-level tests to verify the wholeness of a user trials. These tests are created preferably through collaboration between business customers, business analysts, testers, and developers.

12.1.2.4 System Testing

Once the entire system has been built then it has to be tested against the Software and Hardware Requirement Specification and System Specification to check if it delivers the features required. System testing can involve a number of specialist types of test to see if all the functional and non-functional requirements have been met.

12.1.3 Our Test Plan

According to the discussion above, we intend to make functional testing.

12.2 Features and Scope to be Tested

We will test both some of the functional and the nonfunctional requirements. In each case study, the default scenario and the alternative paths are to be tested.

12.2.1 Functional:

- Attendees Login
- Organizer's Create a New Event

12.2.2 Non-Functional:

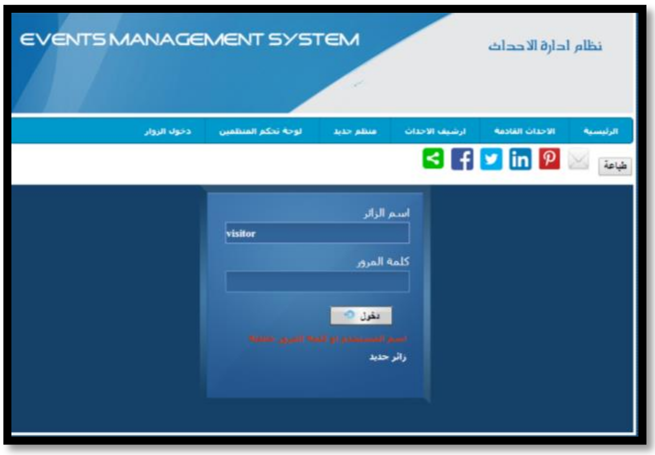
- GUI
- Usability

12.3 Test cases

In this section, we will show the test cases that we planned and implemented

12.3.1 Attendees Login

In this case study, we will follow the steps to login. The user enters valid user name and the password. If any of the data are missing or the data are invalid, error message appears and the use is kept in the login page.



اسم الزائر: visitor

كلمة المرور:

اسم المستخدم او كلمة المرور خاطئة

Figure 1 User Login Catch Errors

If the user enters the data correctly he is taken to the control panel.

12.3.3 Organizer’s Create a New Event

First, organizer login

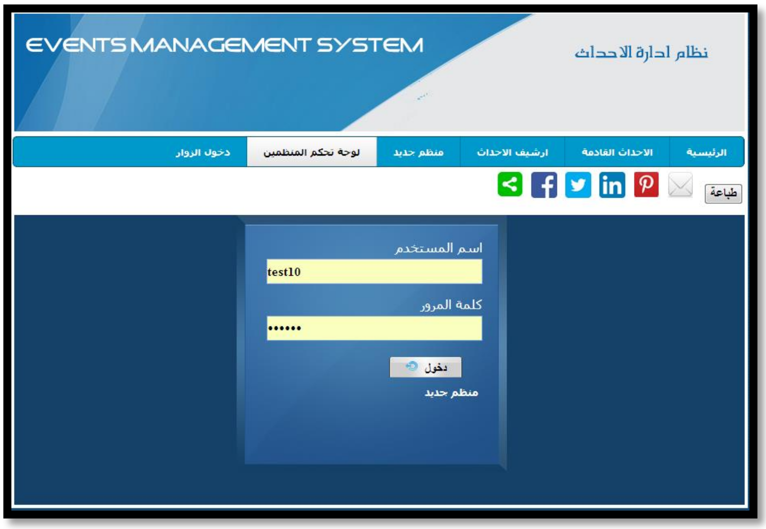


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Figure 2 Login screen for organizer

Then, go through new event link to create new event. If there are missing data, error messages are shown

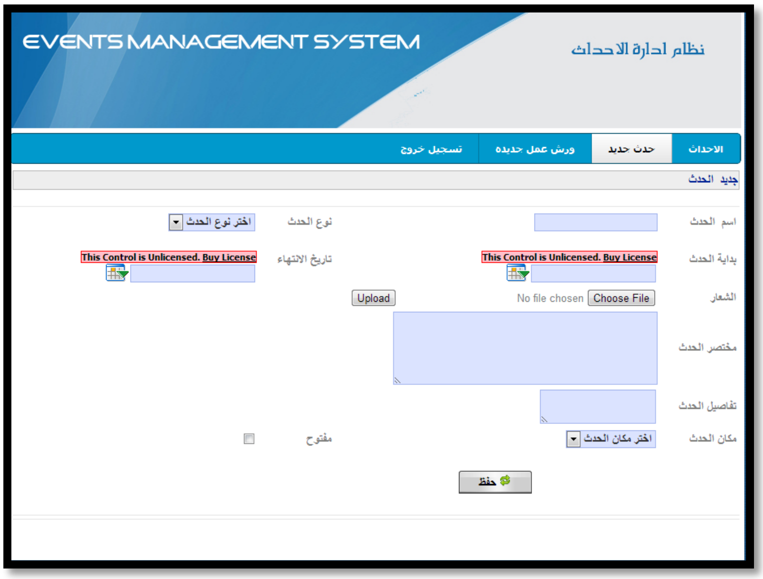

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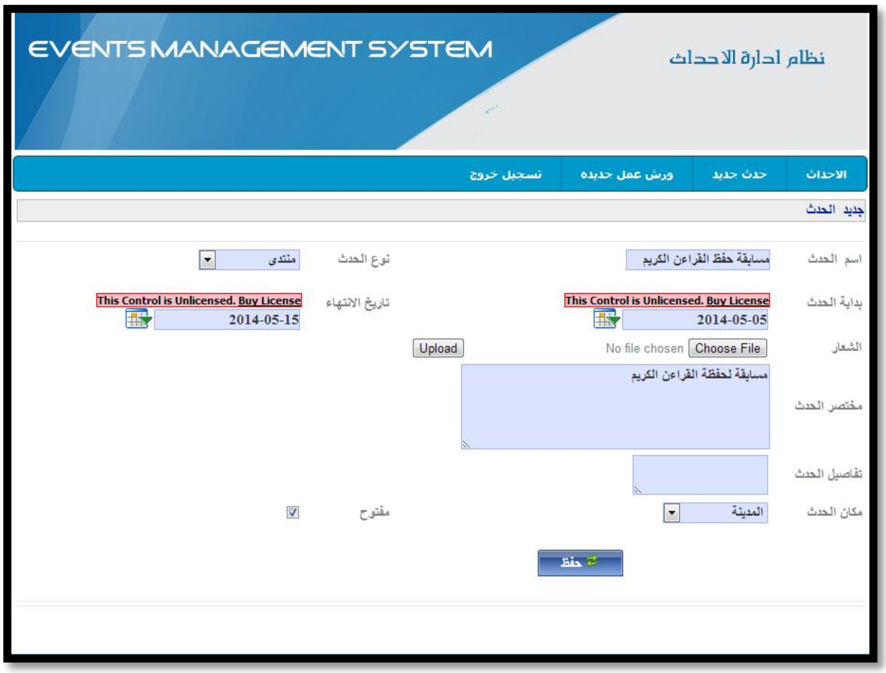
Figure 3 Create new event page catch missing data

After that, after filling the missing data, date of start and date of end and the description are entered. If the name of ending the event is prior the starting data the error is caught.



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نوع الحدث: منتدى

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مكان الحدث: المدينة

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Figure 4 Create event catch dates mismatch error

If all of the errors are corrected, the default scenario of creating a new event is completed and a confirmation message appears.

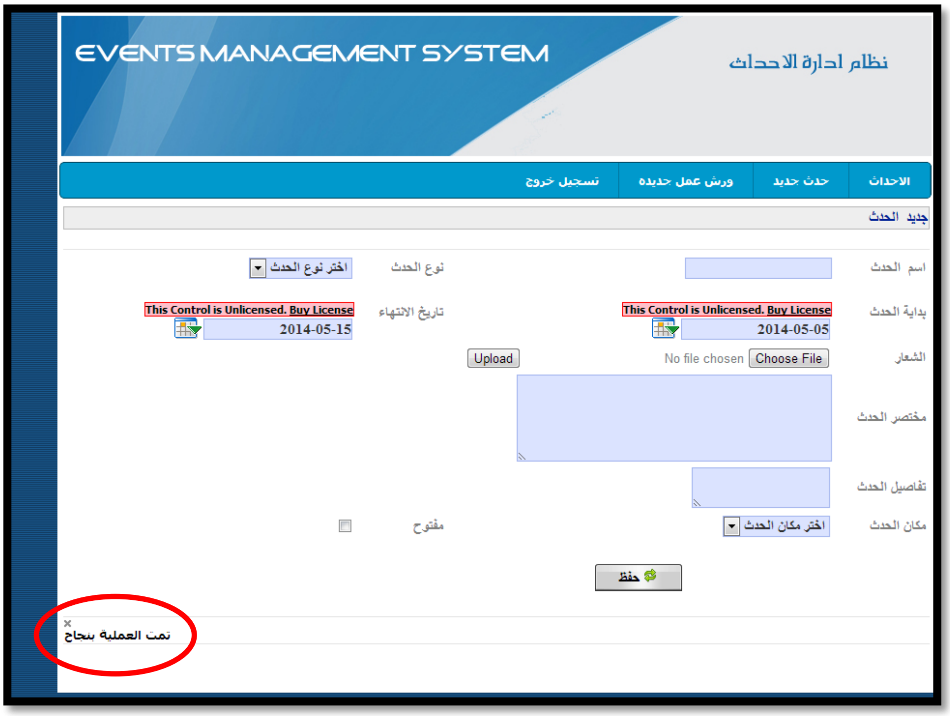

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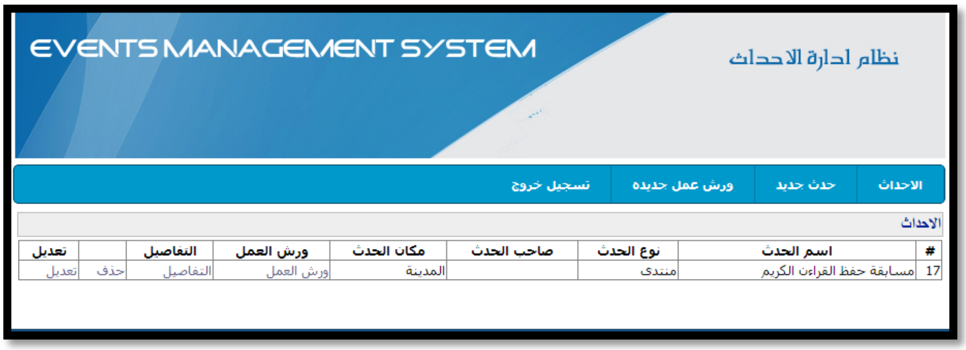
Figure 5 Event Creation Confirmation Message

Now if we check the events created by that organizer the newly created event appeared



الاحداث

#	اسم الحدث	نوع الحدث	صاحب الحدث	مكان الحدث	ورش العمل	التفاصيل		تعديل
17	مسابقة حفظ القراءن الكريم	منتدى		المدينة	ورش العمل	التفاصيل	حذف	تعديل

Figure 6 the New Event is Added Successfully

12.3.4 Usability

In usability testing, the testers assess the ease with which the user interact with the proposed application. It tests whether the application built is user-friendly or not. It reveals whether users feel comfortable with the application or Website according to different parameters, which are the flow, navigation and layout, speed and content especially in comparison to similar applications. Usability Testing checks how it easy is to use the system, easy to learn it, and how convenient for end user. Usability Testing is a black box testing technique.

After examining the screens showed in section 11.2 which is the I/O screens of the system, different features are illustrated to prove the usability of the application.

- The webpages have consistent layout. The logo is always on the top. The menu is always on the left. If the user understand the main screen, no more learning is needed as the other webpages follow the same schema.
- According to the login of the user, he/she is directly forwarded to the control panel. It has only the functionality that are associated with the login credentials of the user. He/she has not to worry about other functions, which are not related.
- For the subsections such as the workshop. The user can add a workshop first then associate it to an event to make the create event screen eaisier especially if the event has several workshop associated with it.

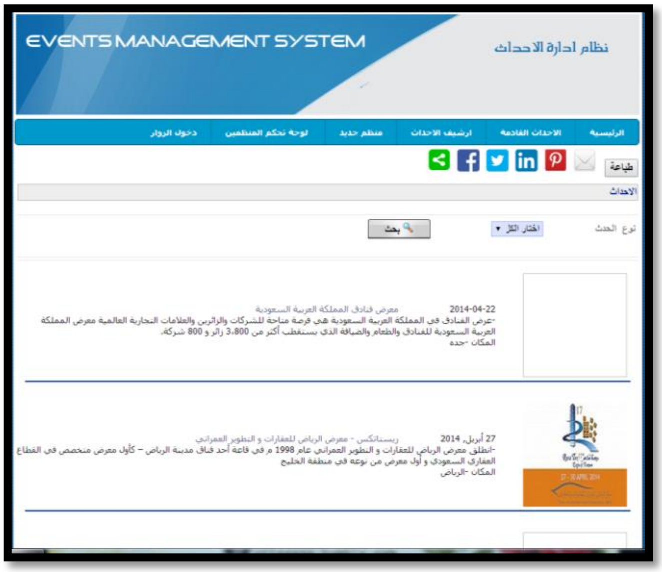
12.3.5 GUI

GUI, Graphical User Interface testing is the process of testing a product's graphical user interface to ensure it meets its written specifications. It includes testing the order. To test a certain function, the test case follow a path through the GUI where the operations are performed in a specific order.

After examining the screens showed in section 11.2, which is the I/O screens of the system, different features are illustrated to prove the good GUI of the application.

- In order for an organizer to create an event, he/she goes through a definite course. He/she has to login first, then the control panels appear. After that, he/she can choose to create an event.
- The systems is easy to use as each user has a control panel of the needed functions. He/she does not have to navigate through different places to find the needed function.
- The menu of links is changing according to the user state. For example, for non-logged in user it has several links including links about general

information such as the latest created events. For the organizer for example, he has a special menu for his function



2014-04-22 معرض فنادق المملكة العربية السعودية
-عرض الفنادق فى المملكة العربية السعودية هى فرصة متاحة للشركات والزائرين والعلامات التجارية العالمية معرض المملكة العربية السعودية للفنادق والطعام والضيافة الذى يستقطب أكثر من 3،800 زائر و 800 شركة.
المكان -جده

27 أبريل, 2014 ريستاتكس - معرض الرياض للعقارات و التطوير العمراني
-انطلق معرض الرياض للعقارات و التطوير العمراني عام 1998 م في قاعة أحد فناق مدينة الرياض – كأول معرض متخصص في القطاع العقاري السعودي و أول معرض من نوعه في منطقة الخليج
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Figure 7 GUI_ Customized Menu _1

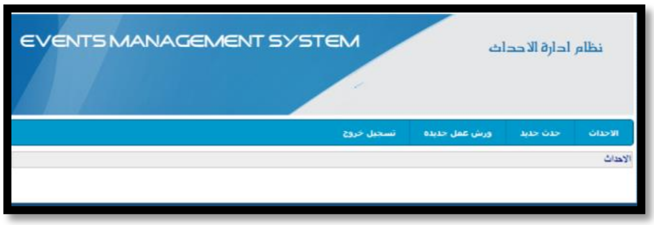

Figure 8 GUI_ Customized Menu _1

Conclusion

In the previous sections of this chapter, we tried to validate the correctness and suitability of the proposed application with the system requirements. We started with an overview of the types of available applications test. Then we choose the functional testing method to follow. We have tested some of the functional and the non-functional requirements. For the functional requirement's we have tested the user login and the organizer is creating new event scenarios. For the nonfunctional requirement's we have choose the testing of usability and the GUI. After examining the test cases, it is clear that the system passed the conducted tests. It really fits the functions it is made for. This is considered a successful application.