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Q1. Design a SRS (Software Requirement Specification) Document for a Problem area of your choice by using IEEE-830 Standard template.

=>

Utsav - a sports management system

Software Requirements Specification

Version 1.0

Aniket Kumar
Software Developer

1. Introduction

It is an event management system for the sports competition of the university.

Purpose

To Provide an online platform to store all the records of the sports events, all the upcoming events and other announcements related to the events.

Scope

This Project is targeted to the Students that are interested in sports or are Participating in sports.

overview

The Software will Contain the modules for upcoming and Past events, records, registration and feedback.

2. ~~General~~ ~~Description~~

References

[1] Mastering Django - Nigel George
[2] HTML & CSS - John Duckett
[3] Django Documentation (version 3.2)

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2. General Description

Product Perspective

This Product is for the students who Play sports, sports officials, where they can view or manage registration of events, Schedules, records.

Product functions

- Schedule of events
- Registration of events
- Records Section
- feedback to the events.

User characteristics

- Users will register themselves and can see their records.

3. Specific Requirements

External interface requirements

User Interfaces

- login/signup page
- Events display page
- Records display page
- feedback form.

Hardware Interfaces

- ~~Operating System - Linux, windows, Android~~
- RAM - 2GB or higher
- CPU - dual core or higher

Software interfaces

- Operating System (windows, linux, Mac OS)
- web browser

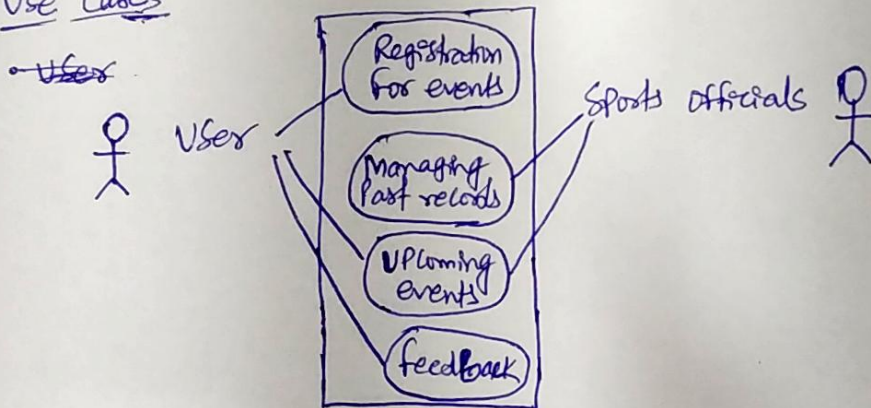Name - Aniket Kumar

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communication interfaces
- Internet (WAN or LAN)

functional Requirements
- Registration for events
  - User can register for any event.
- managing Past Records
  - User can view, filter and analyze Past records.
- Displaying of Upcoming events
  - User can view the upcoming events.
- feedback of the events
  - Users can give feedback for any event.

Use cases

User

Non-functional Requirements

Performance - The Performance of the Product should be like that the user don't face any Problem in accessing that.

Reliability - Product should be reliable and data should be secured.

Availability- The Product should be available when it is needed.

Security - The Product should be secured and unauthorized access should not be there.

Maintainbility - Product Should be easily maintained.

Portability - The Product should be easily Portable from one environment to other.

Logical Database Requirements
- The database should be relational and of master slave format.
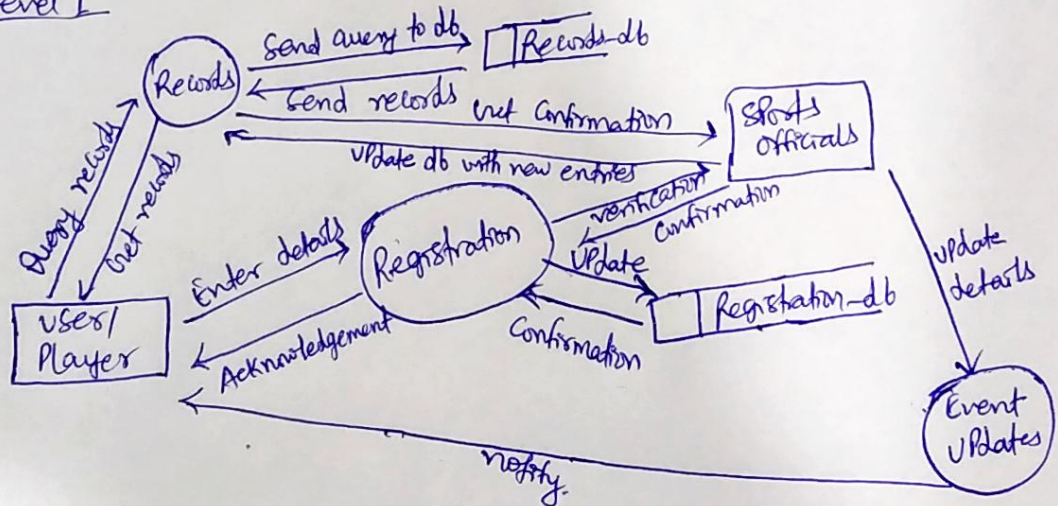
4. Analysis Models

Data flow Diagram

Level 0

5. Level 1

5. Change Management Process
- If in future, we are going to change in Product, users can Submit their issues via feedback or raise an issue in the github repository.
- These changes will be approved by a group of moderators after the review.

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Q2 Enlist the major functionalities of E Commerce Platform like amazon.com, flipkart.com, Jabong.com, myntra.com, Snap-deal.com and design test cases to implement behavioral test of any five functionalities.

⇒ Major functionalities of amazon.com

- **Detailed Product descriptions**
  - The interface provides detailed description of products, apart from its important features, which may include quality and dimension of the Product, brand information, model number, manufacturer details and other additional details.

- **Related Product Details**
  on amazon, if we view any Product, a similar Products area is also available.
  we can also have recommendations based on that.

- **Search and filter**
  It also has a unified search box to search any kind of Product as well as sorting and filtering options are also available.

- **order management**
  # we can easily add items to cards and Place orders by giving address details and Paying the amount.

- **Payment module**
  How easily the Payments can be made and what are the modes available for the Payment.

- **Delivery and returns management**
  It stores all the delivered and ordered Products from any time as well as the return Procedure.

Test Cases

Test Case id	Test Case name	Test Case desc	Test Steps			test Case status	test status (P/F)	test Priority	test defect severity
			Step	expected	actual				
Desc 01	validate Correct info	to check whether the info displayed is correct	click on desc button and then click away.	Information is displayed or collapsed	as expected	design	P	high	low

Test Case id	Test Case name	Test Case desc	Test Steps			test Case status	test status (P/F)	test Priority	defect Severity
			Step	expected	actual				
Rel 01	validate recommendation	to check whether the related items are properly displayed	click on any Product	related Products displayed	Most Products were related	design	P	medium	low

Test Case id	Test Case name	Test Case desc	Test Steps			test Case status	test status (P/F)	test Priority	defect Severity
			Step	expected	actual				
filter01	validate filter	to check the filter is applied properly.	select sort from min. Price to max Price	displayed results should be in ascending order of the Price	as expected	design	P	medium	low

Test Case id	Test Case name	Test Case desc	Test Steps			test Case Status	test status (P/f)	test Priority	defect Severity
			Step	expected	actual				
order01	validate order	to check quantity of Product in cart can be increased	Click on the Plus button after quantity to increase it.	quantity increased	quantity decreases	design	f	medium	high

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Q No.2

Test Case id	Test Case name	Test Case date	Test steps			test Case Status	test Status (P/F)	test Priority	defect severity
			Step	expected	actual				
Payment01	validate failed Payment	If payment failed, is the order Placed	intenti-onally fail a Payment	order not Placed	order Placed	design	fail	high	critical

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Q3. write a technical article on white box testing and its methods.

→ **White Box Testing**

- It is a technique or approach of testing using which, a tester can inspect and inner behaviour and working of a software system, that are code, infrastructure and how the integration is done.

- In white box testing, test is performed to examine the inner workings of the code.

- It is also known as clear box or open box testing as the source code is accessible to the testers.

- It is performed in two major steps - first is understanding the code provided, and second is creating test cases and executing them.

Methods for white Box Technique

- **Statement Coverage**
  - In this method, we try to traverse all statements in the code at least one time.
  - This assures that all of the code is tested.
  - It is calculated by -

$$\frac{No.\ of\ executed\ State}{Total\ Statements} \times 100$$

- **Path Coverage**
  - It is concerned with linearly independent paths through the code.
  - In this approach, the testers writes unit tests to execute as many paths as possible.

Name - Aniket Kumar

Registration no - 12108348

Roll no. - RD2112B81

- • It is calculated by - $\dfrac{\text{Total Paths exercised}}{\text{Total no. of Paths in Program}} \times 100.$

- Condition Coverage.
  - • In this method, we make Sure that all conditions are covered in the code.
  - • It is calculated by - $\dfrac{\text{No. of executed operands}}{\text{Total no of operands}} \times 100.$

- White box testing is done to discover these type of bugs.
  - • Logical errors
  - • Design errors
  - • Typographical errors
  - • Syntax errors.

Advantages
- • It has Simple and Clear rule to let the tester know when the testing is done.
- • The technique is easy to automate.
- • It helps in removing parts of the code that are not essential to the functionality of the program.

Disadvantages
- • If any part of the code is redesigned and re-written, testers need to write the test cases again.
- • Requires a large effort to automate.

- Some white box testing tools are - JS Unit.net, CPP Unit, vera-code, JUnit, etc.
- Thus, the white Box testing is a valuable approach to do the Software testing. _____