



King Fahd University of Petroleum & Minerals
Information and Computer Science Department
SWE 205 (121) – Introduction to Software Engineering
Term Project Description

FIFA World Cup 2014 Management Systems Requirements



FIFA WORLD CUP
Brasil

The **FIFA® (Fédération Internationale de Football Association)** has accepted your team's bid and awarded you a mega-project to develop a management system to handle the operations of the World Cup (WC) 2014 in Brazil.

The main driver of the WC is the schedule of its games. Based on the schedule of the games the following aspects are managed:

- TEAMS and PLAYERS

Teams and player profiles are created prior to the tournament and using the current stats. Stats are updated for teams and players as the games progress. There will be 32 teams. Teams are assigned hotels. Each team can choose the hotel of their choice. All players of a team must stay at the same hotel. Teams can choose different hotels in different cities. Remember that a team contains more than just player, for example coaches and medical staff. Transportation is scheduled for teams to and from stadium on game days. Transportation is also provided for teams to move between different cities. On their days off, teams or individual players can book tours of the cities if they wish.



- TICKETS

Each stadium has a certain seating capacity. There are ten stadiums that will be used each one in a different city. The cities are Belo Horizont, Brasília, Cuiabá, Curitiba, Fortaleza, Manaus, São Paulo and Rio de Janeiro. The capacity of each stadium is available online. For safety reasons this capacity should not be exceeded under any circumstances. Tickets become available to the public at full price one full year before the games begin. Fans can purchase tickets using a discount code if they have one from a participating sponsor (like a Soda Drink company). Discounts can be 5, 10 or 15%. The organizing staff can get tickets for a 50% discount using their staff ID as the discount code. Fans cannot purchase more than 6 tickets to a particular game (whether with discount or not). For each game, the tickets available to the fans are split in half, with half the tickets available for the supporters of one team while the other half being available for the supporters of the other team. Staff members are not allowed to book any tickets on events they are working on. VIP personnel get their tickets for free. VIP personnel will have special arrangements to verify that they are indeed VIP before their tickets are booked. VIP members have a reserved area in each stadium. Members of the media also get their tickets free and they too have a reserved area in each stadium. Players and team members in general who are not playing are seated in the VIP section as well (these seats are never assigned at any point just in case a player or team member requires them).

- SHOW PEOPLE

Show people are those who will perform at the opening and closing ceremonies of the games. They are registered into the system as staff members but they are not allowed any discounts for tickets.

- SECURITY

Security is vital for the success of the games. Security are assigned to protect any event. This includes the stadiums (whether or not a game is being played that day) and including the press room and the players dressing rooms. Security is also assigned to protect teams during their transportation even if it was for a leisure tour. Security is also assigned to media members during their transportation. However, media members need to request that in advance. Security for the transportation of VIP personnel is also provided upon request. Security personnel are allowed to purchase tickets at 50% but only on their days off (not working).

- STAFF MEMBERS

Staff members are the running engine of the WC. Staff members help in organizing and running almost everything. They are assigned to:

- Handle the opening and closing ceremonies.
- Process tickets of fans entering the stadium.
- Handle the field itself before, after and during the games.
- Clean and organize the stadiums.
- Clean and organize the dressing rooms.
- Clean and organize the press rooms.



- Be available at hotels to help teams and players with any specific needs.
- Accompany teams on their transportation.
- Provide help for media members and VIP.

Project Operational Guidelines

The project will be carried out in a team of 3 to 4 students (unless approved by the Professor). Each student in a group will work as a group leader for a phase and it will be rotated among the group members. The submission of the documents will **ONLY** be accepted in hardcopy (**printed**) form. **No submissions through WebCT or Email will be accepted.**

Phase 1: Software Project Management Plan

[20 Marks] Due: October 10, 2012

The Software Project Management Plan is prepared at the commencement of the project to structure the activities that must take place during the project and to provide a tool against which progress can be measured. An example document outline that can be used as a model for the Software Project Management Plan is presented as follows:

1. Software Project Introduction
 - a. Project Overview
 - b. Project Deliverables
2. Project Plan
 - a. Project Activities
 - b. Project Schedule
 - c. Project responsibilities

Phase 2: Business Requirements Specifications

[30 Marks] Due: November 17, 2012

The Business Requirements Specification is a document, which reports the finding of the project team after analysis of the client's requirements. The document specifies the project team's proposed solutions relating to the software and hardware requirements of the system that is to be developed. It should be written in terms that the customer could understand. An example document outline that can be used as a model for the Business Requirements Specification is presented as follows:

1. Functional Analysis
 - a. Product function
2. Use case Analysis
3. Domain Analysis (Conceptual Model)
 - a. Identification of components/modules
 - b. High level class diagram (domain model)
4. Data analysis
 - a. Data input/output



- b. Data storage
5. User Interface Analysis
 - a. Input Screens Format
 - b. Output Screens Format
 - c. General indication of flow of interaction

Phase 3: Design and Development

[30 Marks] Due: December 15, 2012

The software design document is prepared for programmers and future maintainers of the system, to specify the detailed architectural structure of the software. The document also includes test provisions that will be applied to the software developed. An example document outline that can be used as a model for the software design is presented as follows:

1. Object Oriented Design
 - a. High level package diagram and components
2. Refinement of the Domain Model
 - a. Define any additional objects or classes, or new internal methods or attributes.
 - b. Develop the design using Sequence Diagrams.

Phase 4: Project Presentation/Demo

[20 Marks] Week # 14 and 15

The team has spent last few weeks on the project and prototype has been developed. The aim of project presentation/demo is to summarize the project. The presentation should include the following points.

1. Introduce the team members and
2. Summary of the requirements, analysis, design and prototype phases
3. Demonstrate the functionality of the prototype application.
4. Discuss experience and issues with reference to the project.

Bonus Marks

There will be bonus marks allotted to teams who perform the following:

- Expand significantly upon the original software project requirements as long as it does not contradict with the given requirements.
- Provide a fully operational prototype towards the end of the project.