ABSTRACT
Diabetes is a chronic disease that hits humans at all age and can manifest itself as early as the age of two. The occurrence of diabetes increases when there is a history of it in the family. Early monitoring helps delay its manifestation or manage it. Diabetes is not a curable disease and needs to be managed all through the lives of patients. There are ways to delay its effect on patients by maintaining a healthy lifestyle, controlling diet and regularly checking sugar blood levels.
Diabetes is a growing health concern in the world, in the Middle East and in Qatar in particular. This project examines how information technology could be used in order to help raise awareness amongst population at risk about diabetes, how it develops and how it is possible to delay it and detect it. In the first part, the situation of diabetes in Qatar and the gulf region is described. The target audience is then presented. The solution as well as its feasibility was described in detail.

Categories and Subject Descriptors
[iPod/iPhone Application]: iPod/iPhone games and application in order to create awareness about Diabetes.

General Terms
Measurement, Documentation, Performance, Design, Reliability, Human Factors,

Keywords
Application, Diabetes, Game, iPhone, iPod, Kids, Teenager,

1. INTRODUCTION
The prevalence of diabetes in Qatar is alarming; so much as it is around the world. According to the Qatar Diabetes Association [4], 40% of Qatari kids suffer from diabetes and the cause is mainly life style. In a 2007 survey, the international diabetes federation ranked the UAE as the second highest in diabetes prevalence around the world, followed by many gulf countries [5].

2. AWARENESS OF DIABETES
There are many factors that cause diabetes. In addition to age, drug induced, infections, sex, hypertension and serum lipids and lipoproteins, diabetes may be caused by hereditary or Inherited Traits, poor diet (Malnutrition Related Diabetes), Obesity and Fat, sedentary lifestyle [2].

Hence, the management and treatment of diabetes always includes eating a balanced diet. Food raises blood sugar levels. People with diabetes have the same nutritional needs as anyone else, that is to say, a well-balanced diet based on body weight that spreads carbohydrates, and adequate protein intake for about 40 to 60% of total energy throughout the day. Regular exercise lowers blood sugar. Like insulin, it also helps the body use its blood sugar efficiently. It may also help insulin work more effectively. Exercise will also help to lose weight.
It is important to monitor blood sugar levels (using a personal blood sugar meter) and to regularly take insulin. Other ways to care for diabetes are described in [3].
This description of management and treatment of diabetes clearly indicates that diabetic patients need to lead a healthy life, exercise and monitor their blood sugar levels.

2.1 TARGET AUDIENCE
In this project we focus on ways in which Patients can be empowered with the use of ICT to help them achieve the same: lead to a much healthier lifestyle and prevent the disease. The project aims at raising awareness on diabetes amongst teenagers and particularly in Qatar. This age population was chosen because the prevalence of diabetes and overweight are noticeable amongst this population. As indicated in [1], the prevalence of diabetes increases with overweight. Prevention at an early age may help foster a better quality of life.

3. THE SOLUTION
Onigiri is a solution that aims at educating teens & kids about the side effects of Diabetes through a game. It is well known that teenagers are addicted to electronic games. Using something that is close to their universe can help to reach out to them more easily. The game is intended to help them understand why it is important to prevent Diabetes. The solution is based on the idea that ‘prevention is better than cure’. Creating awareness about the disease may slow its progression. This solution is educational but also recreational, in that it is learning through play. Onigiri is a game that can be played on iPod and iPhone. Through the game, the players learn on the importance of balanced diet to lead a healthy life.

3.1 Onigiri
‘Onigiri’ means ‘Rice ball’ in Japanese. The character that we will be using in this game is named Onigiri and it looks like a round shaped of rice. Onigiri is an overweight pet that is affected by diabetes and needs to be taken care of. Onigiri will not be a game just for the kids to have fun with but it can also be educational. Random facts will be generated on the loading page so that the kids and teens will know the important facts about Diabetes. The random facts will include statistics about the Diabetes and also tips on balanced diet.
3.1.1 Gameplay
The game player will be helping Onigiri to exercise and eat healthy food to keep its blood sugar level acceptable. The player will also be giving Onigiri its insulin shots when needed. The player can also make Onigiri sleep from time to time. Onigiri will also lose weight if he exercises more. Through the game, the player learns how the life of a diabetic patient looks like and can understand the proper ways on how to manage Diabetes.

3.1.2 Technology
The game is intended to be developed as an iPod touch and iPhone application. It uses the iPod’s accelerometer technology for some functions of the game. Accelerometer allows iPod to detect when you are rotating iPod from portrait to landscape. One of the functions that allow the player to use the accelerometer technology is that the player can make Onigiri exercise without pressing the exercise button. Onigiri will automatically exercise if the player shakes or tap-and-tilt the iPod. For example, when the player is jogging and the Onigiri application is active, Onigiri will automatically exercise due to the iPod’s accelerometer. This functionality can encourage the player to exercise and enjoy the game at the same time.

4. Feasibility
We expect the game to be adopted by teenagers easily as they like downloading and playing on their iPods. Here in Qatar, the cost may not be an issue. An iPod or iPhone game will be a good way to create awareness about Diabetes. Teens and kids are usually not interested in finding out more about Diabetes since they are not aware of how serious Diabetes actually is. In order to get their attention, we need to come up with a solution that can easily attract them and make them more interested in finding out more about Diabetes. By developing Onigiri application, we can easily attract them and create a fun environment for them to learn more about Diabetes.

5. ACKNOWLEDGMENTS
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6. REFERENCES