1. INTRODUCTION
This paper addresses the problem of teaching Arabic alphabets ($\mathbb{H}$) as a course project for young children aged 5 to 7, by developing a computer-based application incorporating playing throughout the learning processes. The importance of such applications stems from making reading activity easy and fun and, consequently, accelerating knowledge acquisition cycle. In addition, such systems will encourage and motivate the spirit of self-learning in young children, and consequently, promote child’s self-confidence and independence.

2. PROBLEM DEFINITION
In these days, working moms are facing difficulties in the processes of teaching their children the alphabet due to their busy daily schedules and high levels of stress. Teaching children letters, how to pronounce them and how to write them, requires a relaxed environment and a lot of patience. Enlighten their children’s minds with new knowledge in a joyful environment where moms can spend quality time with their children and have fun together is the challenge that we are trying to overcome.

3. PROPOSED SOLUTION
Children love to play, this is a known fact; therefore, we tried to make use of this fact to make children acquire a new knowledge and skills unconscious. E-story is employed as learning medium where characters play the role of letters. The letters (characters) are introduced, pronounce them-self and explain how they can be written down for the children in series of short stories with mom’s participation in their learning processes. Stories will begin with the simplest thing possible such as, recognizing one character and be able to pronounce and write it correctly, and whenever the child reach a level of progress by reading the story the more he/she acquires knowledge, and hence, increases his/her own accumulative information as a natural result of progress in the post. Parents will find their children empowered from reading altogether, not only that, but also that the stories will be charged a variety of situations of moral and public information and will empower the child to learn new things by him/her self.

4. RESEARCH METHODOLOGY
The adopted research method consists of two phases: analytical and developmental. In the analytical part, structured and non-structured interviews were conducted on a group of (mothers and a teacher), in addition to a close observation for 5 children in their learning environments. Based on the analytical phase outcomes, the developmental phase was launched following a User-Centered Design (UCD) [1]. In this phase, first, a tentative conceptual model was drawn and tested. This pilot application revealed some challenges and considerations, which were addressed in the final version of the model. The methodology of the model is based on (letter to word) model instead of (word to letter) model, which is currently implemented for teaching alphabets for children. Furthermore, the model uses “Anthropomorphism”. [2] in order to make the interaction more attractive since it is compatible to children perception. The model consists of chapters, each of which contains story and games dedicated for a letter of the Arabic alphabets. This is to accommodate the variation of children’s reading levels that range from children who some are familiar with the alphabet while others are not proficient with reading. This prototype is developed using Microsoft Expression Blend tool.
5. OBSERVATION

The observation took time between 3 October and 8 October. We conducted 4 experiments involving children participation in different situations and activities. We observed one of the children (6 years old) learning the Arabic alphabet from some cards. In each card the child learns new word start with the new letter. For example, the letter (تاء) comes with the word (تكأ) and it was so frustrating to the child because he didn’t recognize the entire letter since he just learned (باء).

We saw that using (word to letter) method was a breakdown. So, after asking an educator and discussed with her about what could be the best for children education, we decided to use (letter to word) method in our application. And that means, the kid will learn many letters at first, then a word with all these letters. For example, the child will learn the letter (باء) then the word (بتكأ).

Our second experiment had 3 children involved in it (5, 6, 6 years old), it wasn’t a planned experiment it was an observation that made us realize that reading stories in a group reading together helps them to learn the alphabet faster in a fun and enjoyable way. This was a great design opportunity. In our program we depended on learning the alphabet in a story form, each letter will have a story told by the mother to his/her child. This way attracts the child to learn the letters of the alphabet in a fun way and help child to learn the letters easily. One of our observations was a child (6 years old) trying to write the letter “ب” in his notebook, and to know if he did it correctly, he showed his mother. We used this as a design opportunity. Our program depends on teaching the child the alphabet under the supervision of his/her mother (optional) to learn the alphabet in correct way. So, if the child saw the letter and tried to write it or pronounce it, his/her mother helps him and guides him to the correct answer.

Our last experiment or observation was with a child (5 years old) playing with his iPad, he was playing with an application that teaches numbers in a fun way, when the child downloaded this application from the app store, he downloaded it as a game to play with, and with only few days, his parents were amazed with how much he learned in such a little time and without any effort from his mother or his big sister to teach him. In this way (learning with a game) would be considered as a design opportunity that we could adapt in a teaching spelling to children in a fun way. By teaching children using games, we for sure will save time and effort trying to convince the child to go and learn in a tradition way (using a piece of paper and a pencil), he will go by himself to learn. We did engaged fun with the learning process.

6. RESEARCH FINDINGS

The main findings of the research can be summarized on the following observations:

- A child in earlier age needs to be with someone old to learn better.
- Children are active and when it comes to learning they feel bored fast, so they need something to make them focus more and enjoy what they learn.
- Mothers need a new-easy way to teach their children.
- Children need to listen, touch, feel, and write the alphabets in order to learn and memorize them.
- Children need to understand the game instructions using images, audio, and lights instead of text based on the aforementioned observations.

General characteristics of the proposed system are outlined as following:

- Helpful: To ease learning alphabets for children.
- Motivating: To build software that motivate kids and let them explore and learn by games.
- Fun & Exciting: To make learning alphabets fun, by using games, videos, images, and audio as learning tools.
- Enhance Sociability: To enhance parental involvement which is important for children’s sociability.
- Challenging: Provide different stages ranging from easy to hard.

Consequently, a system is developed with the following aspects:

- Use (Letter to word) approach to make it easy for children to learn alphabets.
- Short funny lessons each one focus in one new letter or word.
- Provide the software with audio to show the child how to pronounce the letters.
- Repeat the letter spelling/pronouncing several times on many different ways till the child remember them.
- Redirect the child to a higher level when he/she recognizes the letters in many different games.
- Display how letters are written within a word.
7. DESIGN PHASE
The design phase was the most challenging phase in our project where we were between two choices: either to choose famous cartoon characters loved by children and designing the environment of the program based on the chosen character, or between the option of creating new characters and create a new environment for these new characters. We did choose the second option. For designing the whole environment we first designed our first character the letter (ل) and then we made the letter (ل) the mayor of the alphabetical town (The City Of Arabic Letters). The (ل) character presents him self to the child, the way he is pronounced and written, after that, he takes the child to the next letter (ح) and he presents him self as well, and so on with the rest of the letters. And once the child knows enough letters that can be presented in a word, the program will show him the words that could be formed from these letters, such as, after learning (ل) and (ح) the word (حلا) is presented. We created the environment based on the letters as if they were friends, neighbors, brothers and sisters. We designed a story connecting them together.

8. IMPLEMENTATION PHASE
Microsoft expression blend 4 was used in implementing our application, the course project description required implementing 2 letters and 2 words, but because of our methodology, we implemented 3 letters to produce 2 words.

9. FUTURE WORK
As a future work, we want to design the rest of the letters, add more chapters supporting the learning process, and make a version for iPad.

10. CONCLUSIONS
It was concluded that the development of interactive prototypes was effective in improving the design process in UCD cycles. Furthermore, the high fidelity prototype was effective in eliciting requirements from target user populations and conducting usability evaluations. We believe the concept of “Learning through playing” is fun and enjoyable and effective. In this case, we hit two birds with one stone; satisfying children desire to play and have fun and at the same time use the same activities for children learning by good planning and proper instructing.

11. ACKNOWLEDGMENTS
We want to first thank Allah the most merciful, without his well we could not ever reach this point. We would love to thank our families for being there for us in time of needs. We want to thank the participants in this project for giving us their precious time. Also, many thanks for our lab supervisor Ms. Hanan Waheed Al-Hindi for her support and guidance. We finally want to thank Dr. Areej Al-Wabil for believing that our project was worth to share with other colleagues.

12. REFERENCES
[1] User-centered design process (UCD) is also called human-centered design process, ISO 13407 (1999)