Memoirs: Reliving memories with loved ones

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Abstract
People living away from their friends and families in places with cultural and linguistic barriers suffer pangs of social isolation. Research studies have shown that emotional memories help these people adapt better to these unfamiliar environments. This paper presents *Memoirs,* a mobile application that fulfills the emotional needs of these people by facilitating them to relive the memories associated with objects of high emotional value

Author Keywords
Social isolation, augmented reality, memories, emotions, cultural estrangement.

ACM Classification Keywords
Design, Human factors.

Introduction
Social isolation is the *"state of having minimal contact and integration with others and a generally low level of involvement in community life"* [1]. It may occur due to lack of communication, wilful avoidance of contact with others, superficial interaction or social unacceptance. Cognitive disabilities like autism, cerebral palsy and down syndrome, linguistic or cultural estrangement, inability to use modern-day technologies and relocation to an unfamiliar environment lead to lack of communication and in turn social isolation.

Persona

Sagar has recently shifted to New York from Nasik, India. He is an animal lover and used to spend most of his spare time with his pet dog at home. Although he has been in New York for a month now, he has still not adapted to the changed surroundings. Also, he has found it hard to make new friends owing to his shy nature. When he is alone at his room, often feels lonely. During such times he misses his dog the most and thinks to himself " If only my dog was here, it would have made me happier.

Staying away from their friends and family make people feel isolated [2,3]. This isolation is enhanced if they are relocated to a place with cultural and linguistic barriers. In such a situation, taking advantage of emotion-modulated memories helps in fast adaptation rates [4]. Studies show that adults display deep emotional attachments to material objects [5].

Memoirs puts into use augmented reality to simulate the emotion-modulated memories related to material objects real-time, thereby utilizing their adaptive powers.

Methodology

Goal-oriented design approach [6] was followed as a part of methodology. Literature research [7] was carried out to identify the domain of social isolation. Through this, questions like what is social isolation, why does it occur and who are affected by it were answered. As it turned out, social isolation affected a

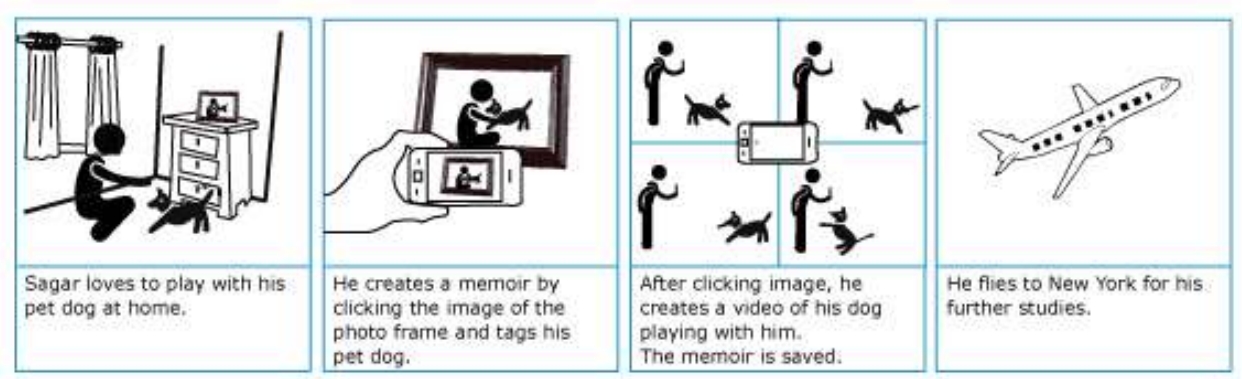


Figure1: **Scenario Formation -** Depiction of one of the many possible use cases of the Application

wide spectrum of user groups. Further, people living away from their homes were identified as the final target group during the brainstorming session. Thereafter, contextual enquiry [8] was conducted with 8 adults, 5 males and 3 females belonging to age group 20 to 23 years who stayed in foreign countries for a span of two or more than two months. Each interview

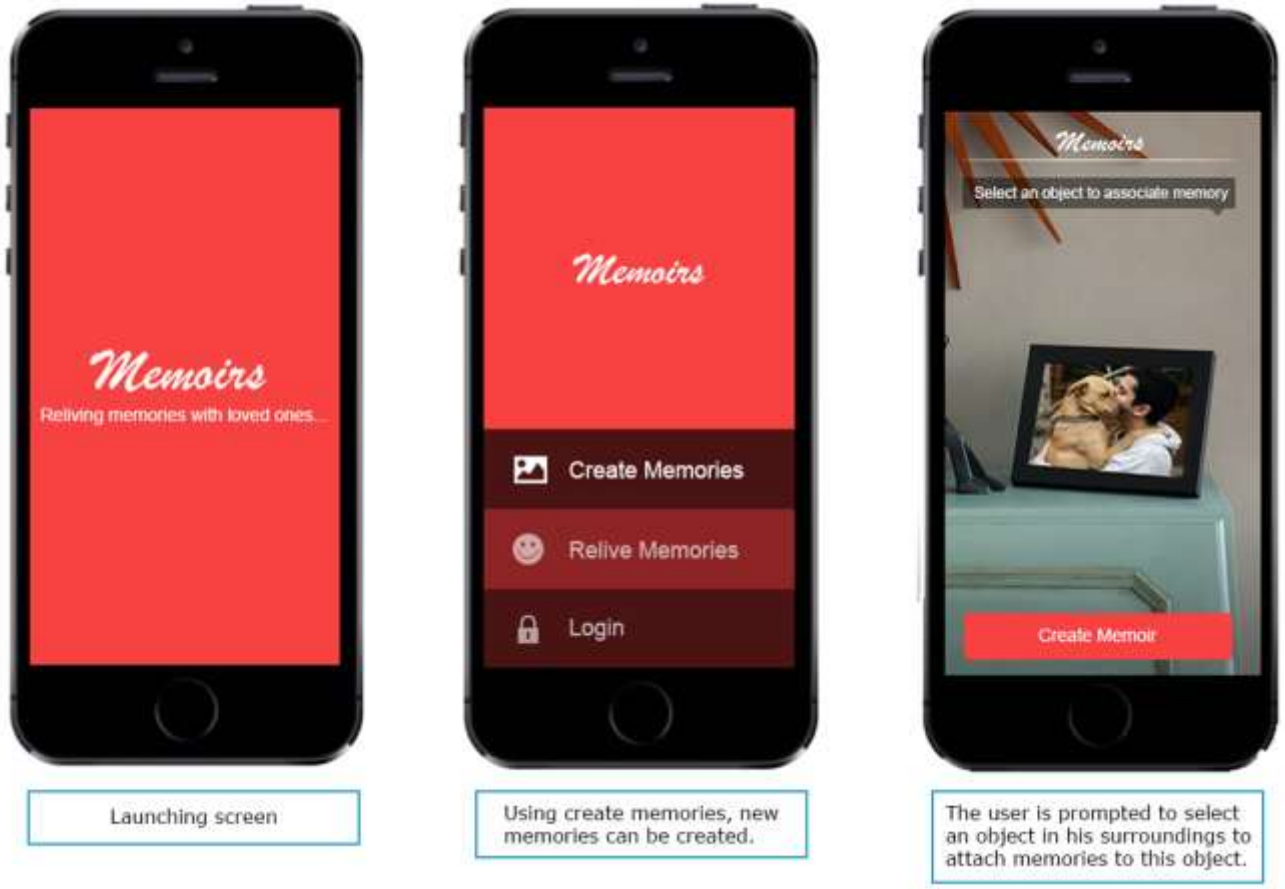
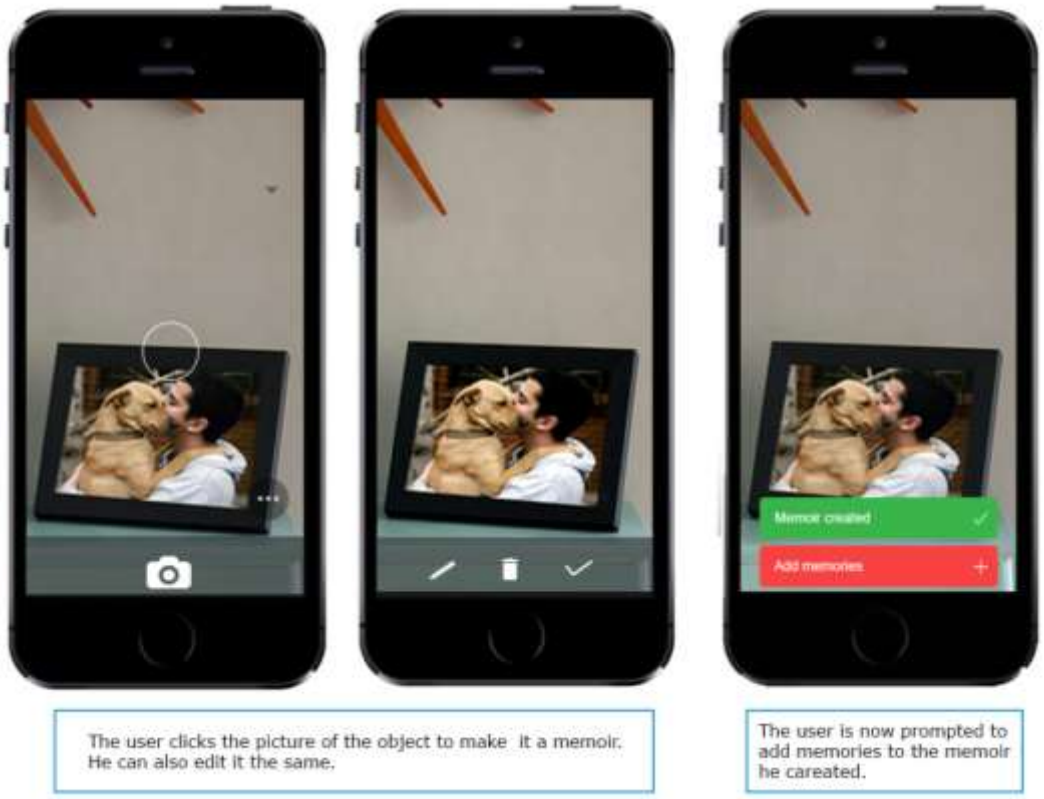


Figure 2: **High-fidelity Mock-ups**



lasted between twelve and fifteen minutes. The findings from the interviews were analyzed through Affinity mapping [9] to identify the crucial pain points which included inability to adapt to the new surroundings, loneliness and homesickness. Consequently, personas were defined and scenarios were created to identify the solution and define the primary touch points between the persona and the system, a mobile application. A high-fidelity prototype was then created to depict possible interactions of the user with the application.

Figure 3: **Adding Memories-** The memories can be added in the form of pictures or videos. The user can tag these memories by names or events. Any number of memories can be added to the memoir.

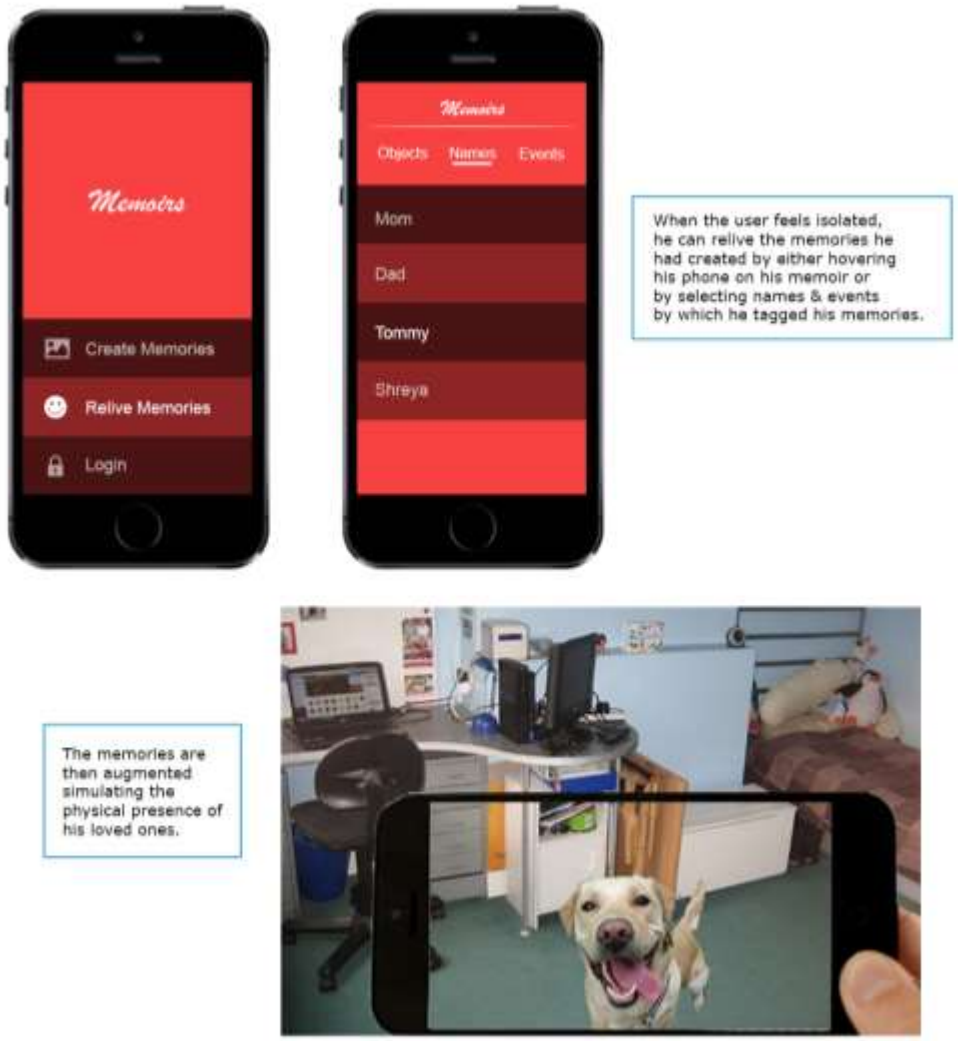


Figure 4: **Reliving the memories-** The virtual figure of dog is augmented into the current surroundings of the user.

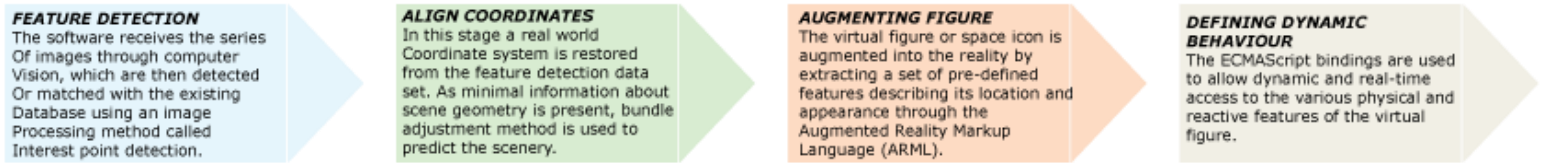


Figure 5: **Technological Block Diagram**: Explaining the augmented reality based technology

Discussion

Memoirs is an application that facilitates users to create memories related to material objects that they are emotionally attached to and relive those memories when needed. *Memoir* is an object which the users want to associate memories with. These associations are in the form of photographs clicked and videos recorded with their loved ones.

To relive the memory, the mobile's camera is pointed at the *Memoir* which is recognized by the camera through image processing. Also, the user can select the memories sorted on the basis of persons tagged or events associated with them. The application then augments a virtual figure of the loved one into their reality. The reactions and behavior of this virtual figure are defined based on the data points collected from the pictures and videos taken earlier by the user. This simulation of someone they love into their reality satisfies their immediate emotional needs and also helps them to tackle loneliness and social isolation.

Conclusion and future work

The paper presents a design intervention in the form of a mobile application that addresses the problem of social isolation in people living away from their families in unfamiliar environments by augmenting a virtual figure of their loved one into their reality. This concept can be further extended to include artificial intelligence wherein the virtual figure can also emotionally interact and talk to the user real-time exactly like their loved one would have. The behavior of this virtual figure can be defined based on the telephonic conversations, personal messages and their social networking profiles. Such an extension of this proposed application will help in tackling the social isolation of people living away from their loved ones to a large extent.

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