**FYP**

|  |  |
| --- | --- |
| Paper Title | Using Mnemonic Techniques as Part of pictorial interface for self-identification of illiterate villagers |
| Author Names | Danish S.Katre |
| Publication Date | 2004 |
| Publisher Name |  |
| Journal/Conference |  |
| Organization | Agriculture college campus, Bangalore, India |
| Description | Centre of development of Advanced Computing (C-DAC) |
|  |  |
|  |  |
|  |  |

**Summery Table:**

|  |  |
| --- | --- |
| **Title** | **Description** |
| Goals | 1. To provide uniquely self-identification for illiterates |
| Keywords | Visual literacy, Illiteracy, Pictorial Identity, pictorial signature, Touch screen Kiosks, Interface metaphor, visual imagery mnemonic, Mnemonic Techniques, Mental model, Self-Identification Pass faces |
| Literature | Indian Government want to provide services to Illiterate farmers.  Failure of Kisan Credit Card in 1998.  Villagers were unable to use computers at Ahmedpur.  400 million people are illiterate in India, 2001.  300 languages are being spoken by the Indian population.  Unaffordable finger print scanning tech for large country like India. |
| Targeted Audience | Poor farmers of villages, either semi or complete illiterates. |
| Constraints/Strengths | 1. Lack of Process orientation. 2. Lack of fine motor skills. 3. Large population. 4. Illiterates, don’t know to read and write. 5. Have the visual literacy, can be used for self-identification. |
| Proposed Solution | Using a set of selected pictures stored in the database, user should be able to select a set of 4-8 pictures as User name and similarly 4-8 pictures for password. |
| Challenges | 1. Which type of pictures will be used? 2. How many max and min number of pics will be used? 3. Recalling of the picture, if not able to recall, then what? 4. How will they browse for pics? 5. Number of unique names, at least 2000 in this case. |
| Findings | Task:1   1. Select a series of seven pictures from a set of 50 pictures, recall after a gap of 15 minutes, subjects were able to succeed. 2. Literates prefer to select pics of cars, motorbikes, airplanes etc. 3. Illiterates prefer to select pics of cows, buffalo’s, tractor etc. 4. Many of them from both the groups were able to call the pictures after the gap, some of them called on the basis of size and shape. 5. Failure to recall specially the second series by the illiterates was very high. 6. Set of 50 pics is very large and confusing.   Task: 2 Here we modified the selection system, by designing the interface in such a way that the user could see the selected pictures and their sequence, and the person’s picture is considered as user name.   1. Difficult for the villager to find out his/her pic from a large list of pics.   Task: 3 Use of sequential peg screens, 4 screens. Selection of only a series of seven pictures, 3(Pictorial identity), 3(pictorial signature), 1(color)   1. This is now very easy to only select 6 unique pictures and one color for both pictorial identity and signature. 2. Selection will be from four frames one picture from one frame in case of pictorial identity. |
| Major Achievements | Proposed system will provide 9\*9\*9\*9= 6561 unique picture set of 4 pics. Which is 3 times greater than the average Indian population of adults, which is 2000.  Achieving Location mnemonics, classification mnemonics, personification mnemonics, and succession mnemonics all in this side by side. |
| Results | Author has achieved the solution to uniquely identify illiterate population of one Indian village, approx. having 2000 people, by offering them to learn only 7 pictures.  Pass faces, where faces of humans are used instead of pictures have a lot of limitations and is not suited. |
| Limitations | Large population can’t be covered, globalization is not possible. |
| Conclusion | Sequential peg screens are very helpful in registering the pictures in the mind of villagers. Proposed solution is very cost effective and secured. |
| Future Work | The author wants to enhance this work in near future and wants to make an application for children learning scripts, gender based choice of pictures and testing different theme of pictures on villagers. |
|  |  |
|  |  |
|  |  |
|  |  |

**Summery Paragraph:**

In this paper the author is proposing a solution for unique self-identification of illiterates other than that of finger print scanning technology. As the target population of the author is rural Indian farmers and poor people, including women who works at households. These people can’t read and write. Several governmental and non-governmental departments wants to provide some facilities to this category of people, especially to farmers by the agriculture department, but they fail because the target population can’t identify themselves uniquely. Failure of Kisan debit card scheme has disappointed a lot to the government but that was the actual turning point to think over the situation, that how is an illiterate able to use kiosks without self-identification. This category of Indian population doesn’t suite holding the debit card while wearing *Dhoti*, and bear chested personality.

According to author of this paper, these people don’t have the ability to even take care of such electronic cards and they don’t have fine motor skills which are indeed needed to use kiosks, they even can’t use the keyboard. India is having the second largest population in the world, and about 400 million people are illiterate, and the country is also passing through the developing era, so on one side we are in crucial need of secure kiosks all around the country for such people and on the other hand we can’t afford the finger print scanning devices at such a large scale, so we need to solve this problem in rather more systematic and cost effective way. For that we are proposing a pictorial interface by defining their pictorial name (Log in Name) and pictorial signature (password), where using multiple number of pictures. We have to address some issues relating to the use of pictures, like what type, strength and collection of such pictures that would become easy for the villager to recall them all and learning the sequence? This idea is a metaphorical idea because only the related and concerned pictures will only be allowed so that villager can easily learn the sequence of pictures.

In the first experiment we provided a set of 50 non-identical pictures and asked them to select two series of seven unique pictures and then repeat them with a gap of 15 minutes. We saw that people selected only those pictures relevant to them and only a group of literate people have selected cars, airplanes etc. First series was recalled successfully by both villagers and literate people, but in the second recall many villagers got failed. In the second experiment we have changed the style of selecting the pictures, now by using the villager’s photograph is now taken as the pictorial identity and seven pictures from the collection will then be selected as a pictorial signature. But later on we realized that it would almost be impossible for the villager to select his/her picture from a collection of hundreds of other villagers so we decided to represent identity of villager also as a set of pictures. In the third experiment we have used 4 peg screens, each screen containing 3\*3 = 9 distinct pictures, while 3 have pictures and one contains distinct colors. Length of pictorial identity will now be only 3ppictures and one color and similarly pictorial signature will be containing only 3 pictures and one color will be the same for both the cases. So villager will only have to remember 7 distinct pictures where 6 of them will be pure pictures along with one color. In this way we can make 9\*9\*9\*9= 6051 unique pictorial names so as for the purpose. When these modifications were tested on the target community and the results were in accordance to our expectations. Villagers were able to recall the whole sequence of pictures.

At the end author says about his findings that villagers selected a variety of mnemonic techniques. So the pictures we use here should also be fulfilling all of those mnemonic techniques. These includes location mnemonics, shape, size and color mnemonics like they chose pictures from this prospective as well like shape, size and color of the picture and similarly classification mnemonics, personification mnemonics and succession mnemonics where pictures should represent different classes of things like bunch of cattle, their belongings and the stages of an activity. At the end we presented that pass faces instead of pictures wouldn’t be successful because remembering the faces of persons is a bit difficult task so these can’t work, rather pictures of film and TV stars and famous sports players and political persons can be used but that also be not much effective. We should only provide the villagers only the pictures that are relevant to their life style. We can also distribute these pictures according to the field area of the villager so as to make him more domain. We can continue this work in future to make gender based choice of pictures and the children learning scripts.