Dept. of Computer Science
Central University of Tamil Nadu
Thiruvarur, Tamil Nadu - 610005

Project Title

A Study and Development of Mobile App for Fisherwomen in Nagapattinam District to Reduce Complexities for Selling of Fishes

Project Agency

Tamil Nadu State Council for Science and Technology (TNSCST)

Scheme

Student Project Scheme 2019-2020.

Project Title: (Product)

Project Grant:

Rs.0.075 Lakhs

Duration

March' 2020 to June' 2020

Project Students:

K.Ahalya, G.Mounika, V.S.Arjun Raj and P.Pasupathi

II-year M.Sc Computer Science (2019-2020)

Project Guide:

Dr.A.Martin, Assistant Professor, Dept. of Computer Science, Central University of Tamil Nadu

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Lr.No.TNSCST/SPS/AR/2019-2020

18.03.2020

To
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Sir/Madam,

Sub: TNSCST – Student Project Scheme – 2019-2020 – approval intimation–grant release- reg.

With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. You are requested to adhere to terms and conditions such as submission of UC and Seminar Paper in Time.

Herewith enclosed the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest

Kindly send the utilisation certificate (format enclosed) and seminar paper (ref.T&C-no.5&6) on completion of the project.

Thanking you,

Yours faithfully,

18/3/20
Member Secretary.

18/3/20

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b) Format of Utilisation Certificate (UC)
c) Cheque for Rs.7500/-   No: 852888 dt.18.03.2020

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| Dr. A. Martin
Assistant Professor
Dept. of Computer Science
Central University of Tamil Nadu
Thiruvarur - 610 005 | A Study and Development of Mobile App for Fisherwomen in Nagapattinam District to Reduce Complexities for Selling of Fishes | K. Ahalya
Gangapatla Mounika
V.S. Arjun Raj
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TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

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CERTIFICATE

This is to certify that **Ms. K. Ahalya, Central University of Tamil Nadu, Thiruvarur – 610 005** has successfully completed the project titled *"A Study and Development of Mobile App for Fisherwomen in Nagapattinam District to Reduce Complexities for Selling of Fishes"* in the Sector **COMPUTER SCIENCE ENGINEERING** under **STUDENT PROJECT SCHEME** sponsored by the Council during the academic year 2019-2020.

No.CSF-045/2020

Chennai-600025

18.12.2020

DR.R.SRINIVASAN
Member Secretary

A Study and Development of Mobile App for Fisherwomen in Nagapattinam District to Reduce Complexities for Selling of Fishes

K. Ahalya, Gangapatla Mounika, V.S. Arjun Raj, P. Pasupathi

Dept. of Computer Science, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu

Abstract

Nagapattinam is one of the main places for fishing and exporting in Tamil Nadu. For local market, fish sales are carried out by fisherwomen. A fisherwoman who sells the fishes in streets as well as selling of fishes from one house to another house is called as street selling fisherwomen. These street sellers face different kinds of difficulties such as arrangement of transport facility, risky travel with fish basket, challenges in fish selling during sickness of fisherwomen and so on. In order to overcome these difficulties this project develops a mobile app in both Tamil and English language to simplify the different process involved in fish selling. The special features like adding of fishes detail using images, voice based search to make different searches about market condition, location tracking for delivery of fish, daily freshness of fishes using image gallery and so on will definitely help them to reduce the complexity of fish selling. This mobile app in future will help fisherwomen to boost their economy and improves the quality of life.

1. Introduction

Fisherwomen in Tamil Nadu dominate in marketing of fish (89%) and Nagapattinam is one of the important fish catchment areas in Tamil Nadu. Fisherwomen are selling fishes in two ways such as either through fish market or through selling fishes house by house. This project identifies difficulties faced by street selling fisherwomen and develops a mobile application to simplify the fish selling process.

Figure 1. Fishing harbour at Karikal near to *Nagapattinam: the loaded fish baskets of fisherwomen*

2. Motivation

The different difficulties faced by the fisherwomen are described as follows.

- **Fisherwomen with overcrowded transport facility -** After buying of fish the group of fisherwomen joins together and finds a transport for rental to reach their respective places (reaching only the main roads). Most of the travels are overcrowded and unsafe.

Figure 2. Tightly seated fisherwomen in typical auto bringing fish from market

- **Carrying of weighted fish basket -** To sell the fish the fisherwomen have to carry weighted basket every street until they finishes the sales.
- **Fish sales during illness of fisherwomen -** When a fisherwoman is suffering from illness, it is very difficult for her to walk around street for selling of fishes. If the illness continues for more than a week then her entire family will be get affected.

Figure 3. Fisherwoman with fish, selling door-to-door

- **Fish sales during rainy season -** During the rainy season it is very difficult for them to sell the fishes in houses and streets.
- **Losing of good rate for fishes during peak hours -** Due to any unavoidable circumstances when fisherwomen were unable to sell the fishes within the peak time, they will be losing the good business rate for their fishes.
- **Existing mobile applications for fish selling in Nagapattinam -** Specific mobile app for fisherwomen has not been developed with voice based search and image based storage features in Tamil language.

In order to provide technical solution to address the complexities of fisherwomen, an android based mobile application has been developed with the following special features.
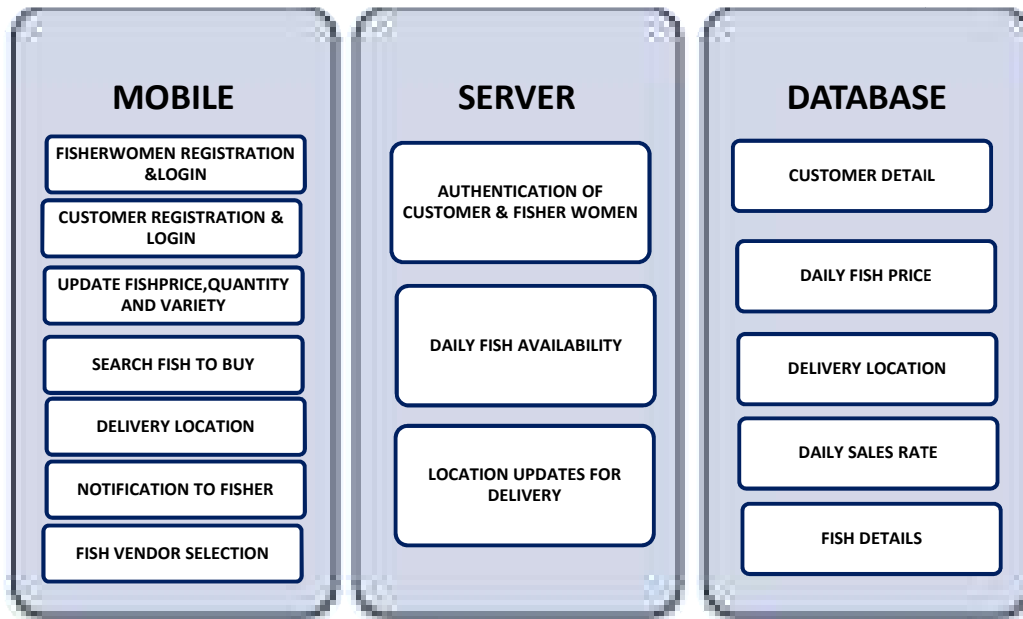
MOBILE	SERVER	DATABASE
FISHERWOMEN REGISTRATION &LOGIN	AUTHENTICATION OF CUSTOMER & FISHER WOMEN	CUSTOMER DETAIL
CUSTOMER REGISTRATION & LOGIN		DAILY FISH PRICE
UPDATE FISHPRICE,QUANTITY AND VARIETY	DAILY FISH AVAILABILITY	DELIVERY LOCATION
SEARCH FISH TO BUY		DAILY SALES RATE
DELIVERY LOCATION	LOCATION UPDATES FOR DELIVERY	FISH DETAILS
NOTIFICATION TO FISHER		
FISH VENDOR SELECTION		

Figure 4. Architecture of the Fisherwoman mobile application

3. Special features of the fisherwomen mobile application

3.1. Selling of fishes through mobile app with English and Tamil language support

This mobile app developed for fisherwomen to sell the fishes with regional (Tamil) language support. Start from the login, adding the fishes into inventory using fish images, updating market situation, orders received, voice based search to check the fish availability in market, customer delivery location identification and other features can be accessed with help of Tamil language.
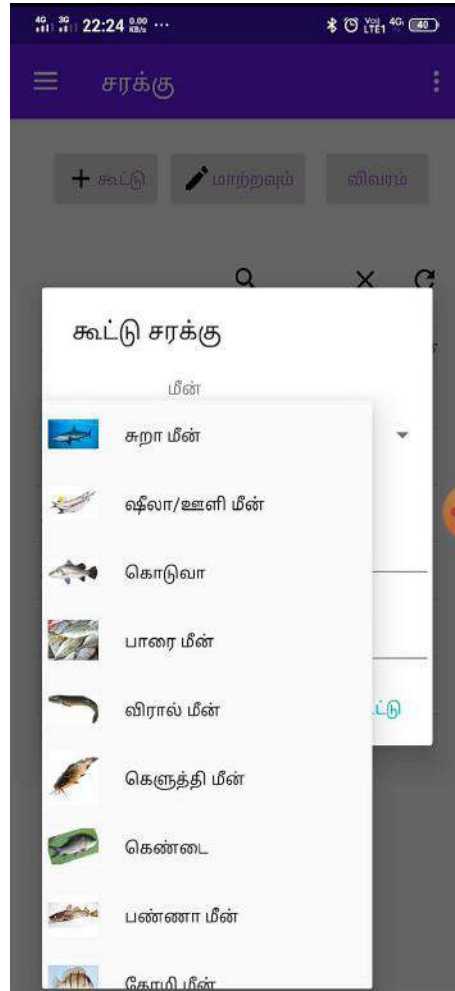
Figure 5. Adding fish to inventory using fish images
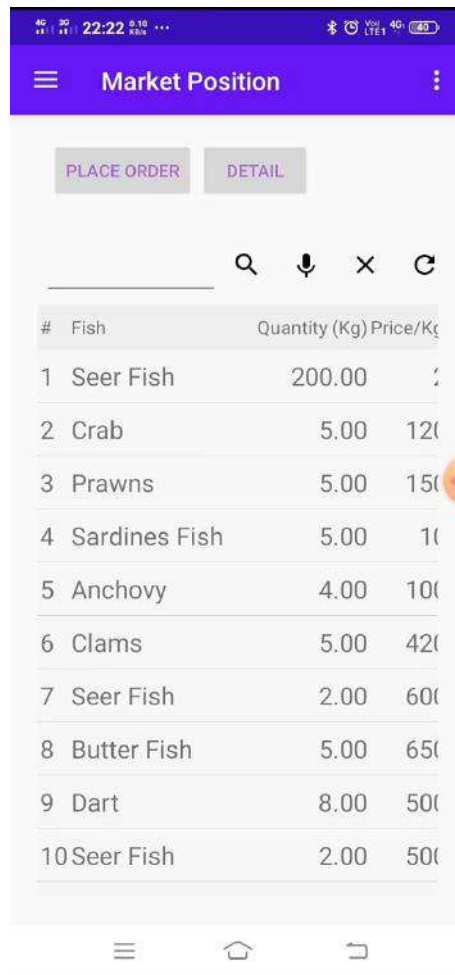
3.2. Adding the fishes into inventory using fish images

Fisherwomen can add fishes into inventory using images. A dropdown list is shown with fish images as well as fish names to store into inventory.

3.3. Voice based search to check the fish availability in inventory

Voice based search is provided in this mobile app which will help the fisherwomen and customer to know about availability of fishes. They can also do text based search to find all kind of fishes.

3.4. Market situation to customers with image gallery support

This module is very much useful to a customer to know the fish availability in the market uploaded by different fisherwomen. Also the selected fish and its captured images and availability of fisherwomen with respect to distance are shown to the customers.

Figure 6. Market position: fish availability and pricing

3.5. Delivery location of customer and updating the present location of fisherwomen

The delivery location of the customer as well as current position of the fisherwomen is updated using Global Positioning System (GPS). Android Geo coder API in Google, latitude and longitude coordinates is applied to identify the customer and fisherwomen location and distance.

Figure 7. A fisherwoman using the mobile application to confirm fish orders

3.6.Customer orders, new user registration, profile and password management

The different fishes added to the customer cart are shown using customer orders module. The new user registration for both fisherwomen as well as customer is carried out using new user registration. Profile and password management helps to manage the both profile and password.

Figure 8. Cash availability is a key issue for street selling fisherwomen

4. Conclusion

This is the first kind of mobile app developed for fisherwomen in Nagapattinam district of Tamil Nadu in their regional language. The project demo was conducted to fisherwomen in Nagapattinam district. This mobile app definitely help them to boost up their economy as well as it will reduce their business timing start from the leaving from home, buying, selling of fishes, preserving of fishes and returning to home. In long term, the quality of life, children education and satisfaction of work-life balance of fisherwomen will definitely improve.

Guide: Dr.A.Martin, Assistant Professor, Dept. of Computer Science, Central University of Tamil Nadu, Thiruvarur, Tamil Nadu – 610 005.

Publications:

1. Aruldoss, M., Kannan, A., Khan, K. K. A., Travis, M. L., & Venkatasamy, P. V. (2022). Mobile Computing in the Developing World: A Case Study of the Fisherwoman App in Tamil Nadu, India. In *Handbook of Research on Digital Transformation, Industry Use Cases, and the Impact of Disruptive Technologies* (pp. 73-91). IGI Global.

2. A.Martin, K.Ahalya, A Study and Development of Mobile App for Fisherwomen in Nagapattinam District to ReduceComplexities for Selling of Fishes, Adalya Journal, ISSN No.: 1301-2746, Volume 9, Issue 2, February 2020 DOI:16.10089.AJ.2020.V9I2.285311.6898

3. A news article about this project was published in The Hindu Newspaper dated 28/09/2021.

   Links:
   - https://www.thehindu.com/news/cities/Tiruchirapalli/now-a-mobile-app-for-fisherwomen/article36699561.ece
   - https://www.thehindu.com/news/cities/Tiruchirapalli/

Chapter 5

Mobile Computing in the Developing World:
A Case Study of the Fisherwoman App in Tamil Nadu, India

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ABSTRACT

Nagapattinam is one of the main places for the catching and export of fish in Tamil Nadu State, in the south of India. In the local markets, fisherwomen buy fish, which are then sold in the streets as well as door-to-door. These "street selling fisherwomen" face various difficulties, including means of transport, carrying heavy fish baskets, and challenges in fish selling during sickness. To overcome these problems, a project was set up with support from the Tamil Nadu State Council for Science and Technology to develop a mobile app with native (Tamil) language to simplify the different processes involved in fish selling. Special features, like adding fish detail using images, voice-based searches on market conditions, and location tracking for the delivery of fish, are helping the fisherwomen to reduce the complexity of the selling process. This chapter provides detail on this project, examines the benefits, and discusses the difficulties encountered in the adoption of the mobile app, which is enabling fisherwomen to boost their revenues and improve their quality of life.

INTRODUCTION

Tamil Nadu has a coastal length of 1076 km stretching along the Bay of Bengal, the Indian Ocean, and

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A Study and Development of Mobile App for Fisherwomen in Nagapattinam District to Reduce Complexities for Selling of Fishes

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Abstract - **NAGAPATTINAM is one of the main places for fishing and exporting in Tamilnadu. There are two kinds of fish production taking place in Nagapattinam such as marine fish production and inland fish production. The Commissioner of Fisheries, Chennai, Tamil Nadu have estimated 77315.52 tonnes of marine fish production and more than 26520.55 tons of fishes are inlanded from Nagapattinam in the recent times. The two main regions of fish production happens in Nagapattinam are Akkaraipettai & Nambiyar Nagar. The fisher folk population in Tamil Nadu consists of Adult males 36%, adult females 34% and children 31%. When occupation is considered women outweighed men in fishing allied activities accounting about 71%. Among the major fishing allied activities, women dominated in marketing of fish (89%), peeling (87%) and curing/processing (86%). When selling of fish is considered certain numbers of fisherwomen are selling fish in market and others are street sellers. They will be visiting home by home and sells the fish. This paper addresses and simplifies the difficulties in selling of fishes by street selling fisher women.**

Keyword – **Fish selling, E-commerce, Android Studio, MYSQL, WAMP SERVER.**

I .INTRODUCTION

In today's world, where everything revolves around technology and the internet. As like organ everybody have a mobile with them. In this trendy world everyone is busy with their own jobs. And also don't have a time to go to shop and buy their needs. Everything is in their hand from their own place they can buy their products. This mobile app enhance a way for buying the fishes from the places. And fishers can sell their fishes directly to the customer buy this app. This is one kind of process in E-commerce.[9]

Online shopping has two types of process,

1. Business-to-Consumer (B2C)

2. Business-to-Business (B2B)

3.Consumer-to-Consumer(C2C)

Anybody can buy a product from this app. Vendor makes an update about the quantity appropriately. So this provide an easy way for make a shopping.

II .TOOLS FOR DEVELOPING APPLICATIONS

Android software development is the process by which new applications are created for devices running the Android operating system. Such apps can be written using Kotlin, Java, and C++ languages using the Android software development kit (SDK).For developing apps, specialized integrated development environments ,

- Eclipse
- Android Studio

A. Eclipse

Eclipse is an integrated development environment (IDE) used in computer programming.[6] It contains a base workspace and an extensible plug-in system for customizing the environment. Eclipse is written mostly in Java and its primary use is for developing Java applications.Eclipse software development kit (SDK) is free and open-source software. Later it's replaced by Android Studio because of some difficulties and problem with Eclipse.[8]

Now, a mobile App for fisherwomen

R. Krishnamoorthy

Central University team has developed the application

A mobile App has been developed by a team of researchers of Central University of Tamil Nadu (CUTN), Tiruvarur, to ease difficulties faced by fisherwomen in selling the fresh catch in the streets of Nagapattinam.

The research team has, through the App developed in both Tamil and English languages, sought to address difficulties pertaining to transport, risky travel with heavy fish basket, and sustaining income at times of sickness.

The research team - K. Ahalya, Gangapatla Mounika, V. S. Arjun Raj, and P. Pasupathi - has incorporated in the App special features such as images of fishes, voice-based search to make different searches about market condition, location tracking for delivery of fish, and daily freshness of fish using image gallery to reduce the complexity of fish selling.

This mobile App that would enable maximising returns through peak-hour sales will help fisherwomen to boost their economic conditions and improve the quality of life, said A. Martin, Assistant Professor, Department of Computer Science, CUTN, the research guide. This android-based mobile App is a first-of-its-kind developed for fisherwomen in Nagapattinam district in the local language, he said.

The fisherwomen could add fishes into inventory using images. A drop-down list is shown with fish images as well as fish names to store into inventory. Voice-based search is provided in this mobile App which will help the fisherwomen and customer to know about availability of fishes, he said. They can also do text-based search to find all kinds of fishes. The delivery location of the customer as well as current position of the fisherwomen is updated using Global Positioning System (GPS). Android Geo coder API in Google, latitude and longitude coordinates is applied to identify the customer and fisherwomen location and distance.

The different fishes added to the customer cart are shown using customer orders module. The new user registration for both fisherwomen as well as customer is carried out using new user registration. The demonstration has already been carried out, Prof. Martin said.

The mobile App will, while boosting the local economy, will help the fisherwomen selling in streets to manage their time in a better way. "It will reduce their business hours - right from leaving from home, buying, selling of fishes, preserving of fishes and returning home. In the long term, the quality of life, children's education and satisfaction of work-life balance of fisherwomen will definitely improve," Prof. Martin said.

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