Department of Computer Science and Engineering

Jain Global Campus, Jakkasandra Post, Kanakapura Taluk, Ramanagara District, Pin Code: 562 112

2022-2023

A Project Centric Learning (PCL) Report on

"BLOOD BANK MANAGEMENT SYSTEM"

Submitted in partial fulfilment for the award of the degree of

BACHELOR OF TECHNOLOGY IN COMPUTER SCIENCE AND ENGINEERING

Submitted by

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CERTIFICATE

This is to certify that the project Centric Learning (PCL) work titled **"BLOOD BANK MANAGEMENT SYSTEM"** is carried out by **SHATRUDHAN CHAUDHARY (21BTRCS270) PRASHANT JHA (21BTRCS251) BIBEK KR. SHAH (21BTRCS248) HARSH KUMAR (LATERAL ENTRY) RAHUL KR. SAH (21BTRCS259),** a bonafide students of Bachelor of Technology at the Faculty of Engineering & Technology, Jain (Deemed-to-be) University, Bangalore in partial fulfillment for the award of degree in Bachelor of Technology in Computer Science & Engineering, during the year **2022-2023**.

Dr.Mahesh T R Program Head Dept. of CSE, Faculty of Engineering & Technology, Jain (Deemed-to-be) University Date:12-12-2022	Dr. Geetha Ganeshan Dean - CSE Dept. of CSE, Faculty of Engineering & Technology, Jain (Deemed-to-be) University Date:12-12-2022
Dr. Satpute B Designation Dept. of CSE, Faculty of Engineering & Technology, Jain (Deemed-to-be) University Date: 12-12-2022	Dr. P. T. Siva Sankar PCL Coordinator Dept. of CSE, Faculty of Engineering & Technology, Jain (Deemed-to-be) University Date: 12-12-2022

Name of the Examiner Signature of Examiner

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DECLARATION

We, **Shatrudhan Chaudhary (21BTRCS270) Prashant Jha (21BTRCS251) Bibek Kr Shah (21BTRCS248) Harsh Kumar (LATERAL ENTRY) Rahul kr Sah (21BTRCS259)** are students of fifth semester B.Tech in **Computer Science & Engineering**, at Faculty of Engineering & Technology, **Jain (Deemed - to-be) University**, hereby declare that the project Centric Learning (PCL) titled **" BLOOD BANK MANAGEMENT SYSTEM"** has been carried out by us and submitted in partial fulfilment for the award of degree in **Bachelor of Technology in Computer Science & Engineering** during the academic year **2022-2023**. Further, the matter presented in the project (PCL) has not been submitted previously by anybody for the award of any degree or any diploma to any other University, to the best of our knowledge and faith.

Signature

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Signature of Students

ABSTRACT

Blood Bank Management System (BBMS) is a browser based system that is designed to store, process, retrieve and analyze information concerned with the administrative and inventory management within a blood bank.

This project aims at maintaining all the information pertaining to blood donors, different blood groups available in each blood bank and help them manage in a better way.

Aim is to provide transparency in this field, make the process of obtaining blood from a blood bank hassle free and corruption free and make the system of blood bank management effective.

The donors who are interested in donating blood has to register in the database. The software is fully integrated with CRM (customer relationship management) as well as CMS (content management system) solution.

It is developed in a manner that is easily manageable, time saving and relieving one from manual works. The process of managing the blood bag that is received from the blood donation events needs a proper and systematic management. The blood bag must be handled with care and treated thoroughly as it is related to someone's life. The development of Web-based Blood Bank Management System (BBMS) is proposed to provide a management functional to the blood bank in order to handle the blood bag. In Kuala Terengganu, East Peninsular Coast of Malaysia has only one government hospital that handles blood bank currently is using a standalone system. This web-based management system was developed to meet the requirements for Sultanah Nur Zahirah Hospital (HSNZ). Other hospital may have different ways and approach of handling blood bag. The methodology used to build this system uses the Rational Unified Process (RUP). The technology platform in implementing this system uses J2EE programming environment with Java and JSP, using MySQL for SQL database and HTML5, CSS and JavaScript for web development. It is a Web Application through which Registered Hospitals can check the availability of required Blood and can send Request for blood to the nearest blood bank or donor matching with blood requirement and can be ordered online as and when required. Blood bank can also send a request to another blood bank for unavailable blood. Person willing to donate blood can find out nearest blood banks using Blood Bank Management Android Application. The location of the blood bank can also be traced using maps. The Android application can be accessed only by the donors to search the blood donation centers and the requesting blood banks and hospitals to search the nearest blood banks and donors.

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Chapter 1

INTRODUCTION

The project blood bank management system is known to be a pilot project that is designed for the blood bank to gather blood from various sources and distribute it to the needy people who have high requirements for it.

The software is designed to handle the daily transactions of the blood bank and search the details when required.

It also helps to register the details of donors, blood collection details as well as blood issued reports.

The software application is designed in such a manner that it can suit the needs of all the blood bank requirements in the course of future. Blood banks collect, store and provide collected blood to the patients who are in need of blood. The people who donate blood are called 'donors'. The banks then group the blood which they receive according to the blood groups. They also make sure that the blood is not contaminated. The main mission of the blood bank is to provide the blood to the hospitals and health care systems which saves the patient's life. No hospital can maintain the health care system without pure and adequate blood. The major concern each blood bank has is to monitor the quality of the blood and monitor the people who donates the blood, that is 'donors'. But this a tough job. The existing system will not satisfy the need of maintaining quality blood and keep track of donors. To overcome all these limitations we introduced a new system called 'Blood Donation Management System'.

The 'Blood Bank Management System' allows us to keep track of quality of blood and also keeps track of available blood when requested by the acceptor. The existing systems are Manual systems which are time consuming and not so effective. 'Blood Bank Management system' automates the distribution of blood. This database consists of thousands of records of each blood bank. By using this system searching the available blood becomes easy and saves lot of time than the manual system. It will hoard, operate, recover and analyse information concerned with the administrative and inventory management within a blood bank. This system is developed in a manner that it is manageable, time effective, cost effective, flexible and much man power is not required.

Chapter 2

AIM AND OBJECTIVES

The percentage of people donating blood is increasing day by day due to awareness to donate blood for those needed. The blood received have to be managed thoroughly so that there will be no negative effect to the blood receiver once they received blood. From the observations and interview conducted that have been made during the user requirements phase, it was found out that there is no interaction medium between HSNZ and the public to announce their blood donation schedule. The blood donation event schedule is normally advertised to the public so that they are aware of the blood donation campaign period. At the blood house unit, the staffs and nurses only are informed about the blood donation schedule for each month on the whiteboard at the blood house. So they are using manual way in informing the schedule.

The problem arises when the space provided is not enough. The medium used to inform the staff about the schedule of the month is using whiteboard and it is written by using whiteboard marker. Therefore, the writing tends to become unclear. The public did not have knowledge about blood donation. There are brochures distributed to the donor but not to the public because they only available at blood donation house. Hence, the public are not getting any details information about blood donation unless they go to the blood donation house. To oversee these, the BBMS interface will be constructed to cater for the blood house staff to post about the blood donation events. These details can be viewed by the public so that they know and they can allocate some time to go and donate their blood. To ensure that the blood donation event schedule is informed among the blood house staff, there will be an interface for staff to be able to fill in details and list of location of the blood donation events for each month. The data inserted will be displayed to the other blood donation staffs such as nurse so that everyone can be notified about the blood donation event schedule even though the staff's are not available at the HSNZ. One of the factor of the public afraid to donate their blood is they believe in myths. The myths that they always believe are, if they donate their blood they will become fat and if they donate their blood, their blood will become less in total of amount and they will become pale. This BBMS should provide more information in order to educate the public so that they know blood donation will not give bad effects. By giving awareness to the public, this will increase volunteers to donate their blood.

- It is a application to simulate the database management for blood bank having daily transaction..
- The project blood bank management system is designed for the blood bank to gather blood from various sources and distribute it to the hospital and needy people who have high requirements for it.
- It consists of four main modules: Administration, Donor, Receiver and activities.
- Scarcity of rare blood group.
- Unavailability of blood during emergency.
- Less awareness among people about blood donation and blood transfusion.
- Deaths due to lack of blood during operations.
- The Blood Bank Management System project aims to make all the procedures automated and therefore with computer system it can be more fast and accurate.
- This project is a high quality software to manage all these cumbersome jobs.

Chapter 3

LITERATURE SURVEY

“Blood Bank Management Information System in India” introduces the evaluation of features, merits, and demerits furnished through the present Web-based Information System for Blood Banks.“The Benefits of Management Information System in Blood Bank” describes the advantages of control records structures in blood banks. It discusses the beneficiaries of the blood financial institution control records system. “ Blood Bank”describes the android software which well timed updates the records concerning donors where the admin accesses the entire records approximately blood financial institution control system.

The app presents a listing of blood banks relying upon the user’s location. In “ Optimization of Blood Donor Information and Management System by Technopedia” It provides blood donors with an efficient and reliable information and management system based on GIS, which has been integrated into the Android mobile application. The services provided by the proposed system are critical to the health sector, and to their health, because blood quality is viewed from the perspective of patient safety through the systematic processes performed by the blood management system. “A Study on Blood Bank Management System” is an information control machine that facilitates to manipulate the facts of donors and sufferers at a blood financial institution.The machine will permit the legal blood financial institution officer to login the usage of a mystery password and easily manipulate the facts of the blood donors and the sufferers in need of blood.

In “MBB: A Life-Saving Application” they have proposed a machine so that it will hyperlink all donors.

They give a charge to the person or patient that is in needs of blood. However, the money that they collected is not for the profit for them but for recover the expenses incurred in recruiting and educating donors. This is also to ensure that the blood transfusion is as safe as possible. In Lions Bank & Research Foundation, They will make sure the availability of blood stock in their blood bank. They also published the current status of blood stock in their website homepage. This is for them to keep the website visitor especially donor informed about the needs of blood. They also inform the donor and the public where and when is their next event. However, this blood bank does not provide any facility for the donor and the patient. Therefore, they cannot know how many times that they have donated their blood. As for the donor, they cannot know their blood screening result for each time they donate their blood. Without having this function in the system, the donor cannot monitor his or her health condition. This will make the donor become unaware of their health condition. The website for Blood Bank is a website that provides the facility for the donor to register by him or herself as a blood donor. It also provides a feature where a person or hospital can request the blood bag or blood stock from the Blood Bank .

Chapter 4

METHODOLOGY

My blood bank project is to provide services to people who need blood with the help of donors who are interested in donating blood to people. The project mainly describes the following modules:

- Donor Registration
- Modifying Donor Information
- Donor Search Life Saving Contacts (in major cities)
- Mobilink Paging Services

- **Donor Registration** - A web-based donor registration system which store donor information and having a secure login system for donors.
To capture and store donor demographic information, including name, address, date of birth, blood type, health history, and contact information to verify the accuracy of the donor information and generate donor cards to generate reports on donor information . To send email notifications to donors and track donors and donations to assign a unique donor ID to each donor.

- **Modifying Donor Information** -The registered donor best is capable of alter his info; no different individual can alter his info as there has been a login form which restricts others from getting into the username and password supplying high safety for the info given via way of means of the donor. If at all of the donor desires to alter his info, he become compelled to give his username and password to go into in. After giving the username and password it assessments for the donor whether he's an present donor or now no longer and if the username and password matches, he can then capable of alter his overall info. If the username and password do now no longer exist then he receives a message as 'Wrong ID and Password Entered, Try Again'.

- **Donor Search Life Saving Contacts** - Contacting local organizations and asking them to help spread the word about the need for donations by Using online platforms such as social media, websites, and online forums to reach out to potential donors. Contacting local hospitals, universities, and other healthcare providers for active participation. Contacting local religious organizations and asking them to help promote our blood bank's need for donations.

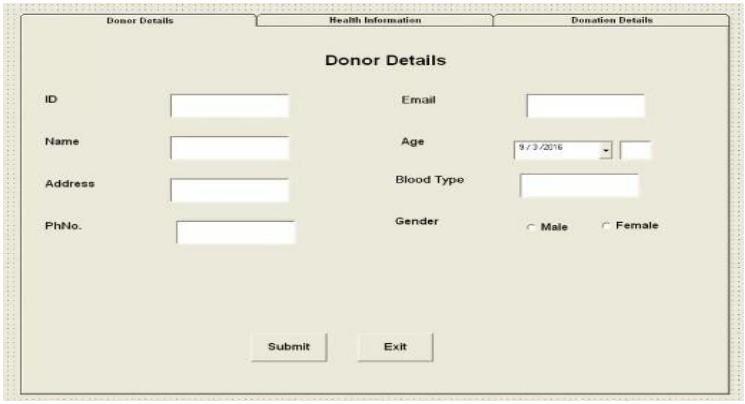
● **Mobilink Paging Services** - If at all of the individual looking for blood has determined any hassle in contacting the existence saving contacts i.e. the touch persons, he changed into supplied with a provider called 'Mobilink Paging Service'. The individual looking for blood changed into given a 'Mobilink' India's Largest Paging Service range such that the individual who changed into looking can name the paging provider range and may inform them the blood institution wished and the entire info from in which they are contacting. Then the 'Mobilink' will broadcast a message at the pagers in their Subscribers showing the Blood Group required, the Name of the Hospital, Contact Number, Patients Name, etc.

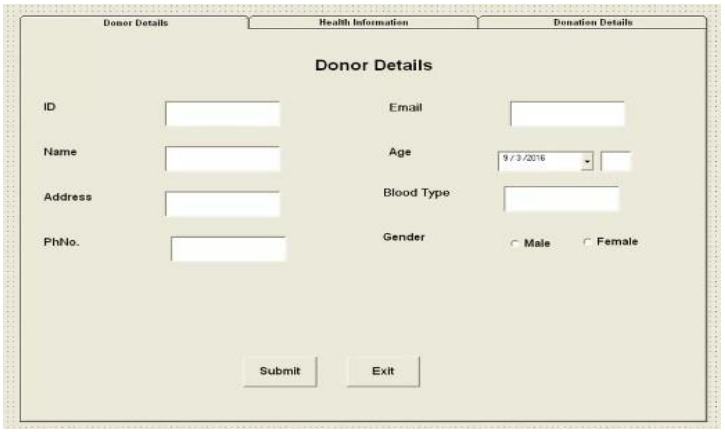
Chapter 5

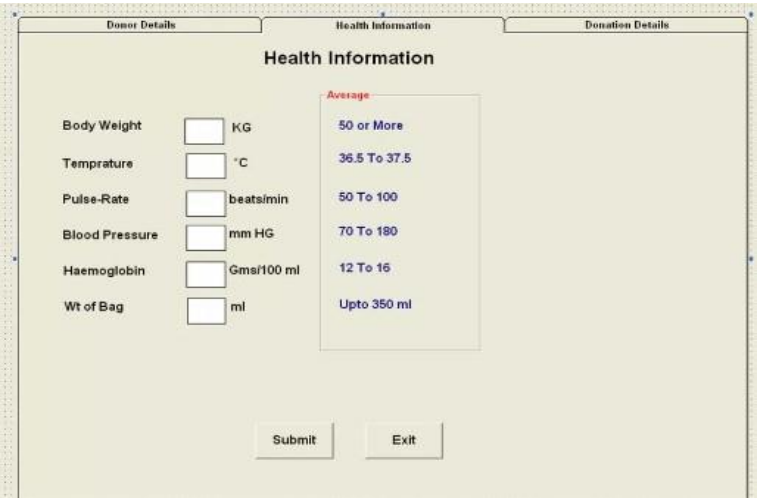
Future Works

- For the future work we would like to make mobilink(website) and deploy the application online so that it can be accessible to anyone globally using MySQL Data Base Management System.
- And increase the scope of the applications by adding more branches to it.

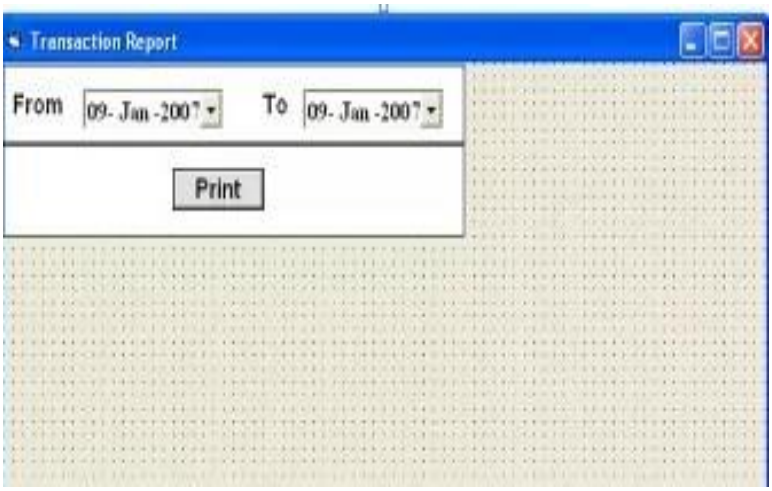
Webpage Samples






Donor Details
Health Information
Donation Details
Health Information
Body Weight
KG
Temprature
°C
Pulse-Rate
beats/min
Blood Pressure
mm HG
Haemoglobin
Gms/100 ml
Wt of Bag
ml
Average
50 or More
36.5 To 37.5
50 To 100
70 To 180
12 To 16
Upto 350 ml
Submit
Exit


Donor Details
Health Information
Donation Details
Donation Details
BloodGroup:
No Of Bags
1
Donation Date
9 / 3 /2016
Submit
Exit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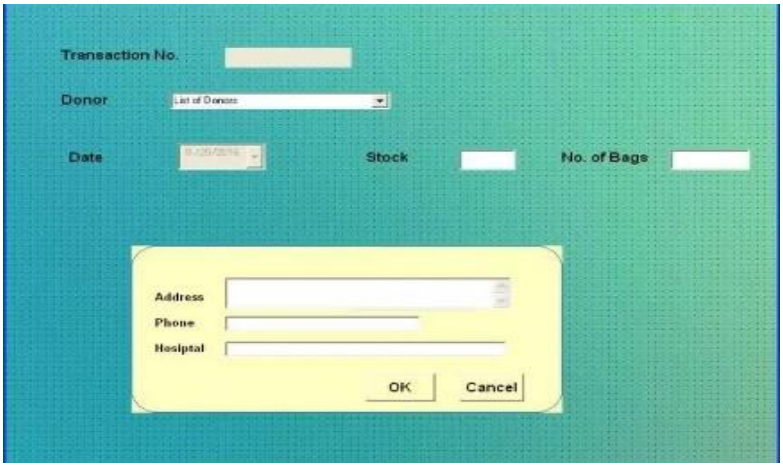
From
09- Jan -2007
To
09- Jan -2007
Print


Transaction No.
Donor
Date
Stock
No. of Bags
Address
Phone
Hosiptal
OK
Cancel

Block diagram

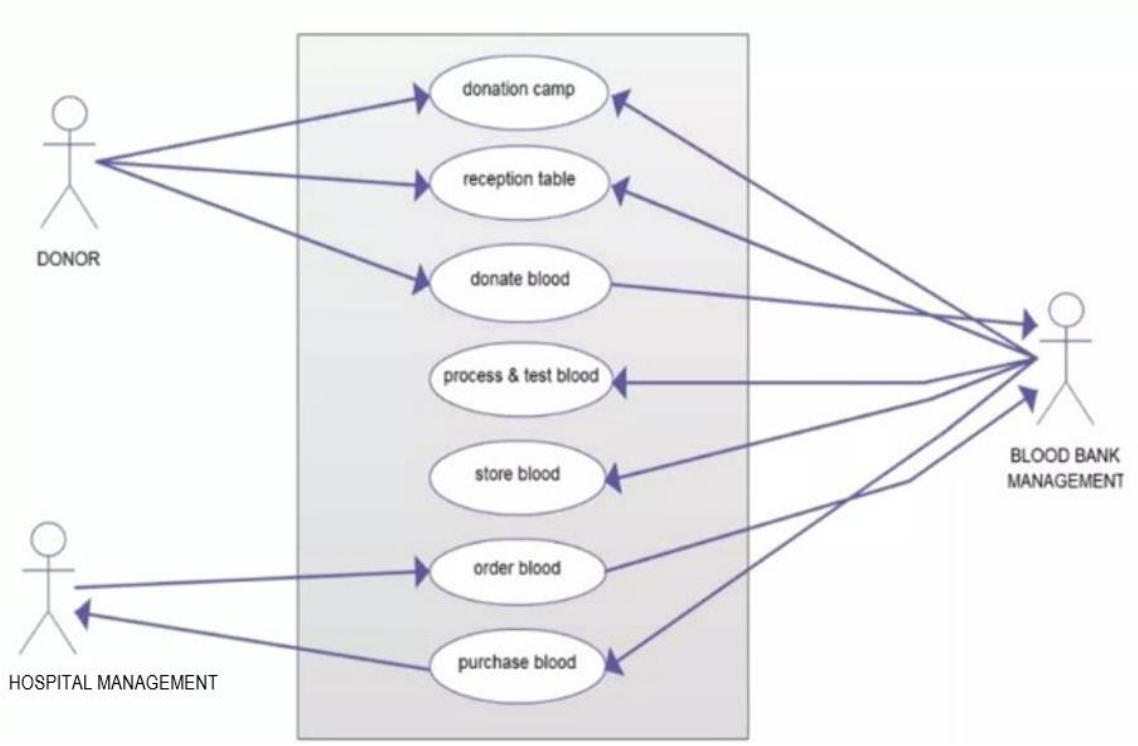


Fig-1.1 Use case of BBMS

Chapter 6

CONCLUSIONS

As the donor's data is saved in the system we can reject those who have HIV or any other infections. As we have the contact number of the donor we can contact donor whenever necessary comes. Since we have the expiry date of the packs we can have a proper storage management system. Technology is introducing new innovations day by day, thus reducing the time required to do things. The proposed system can be used to reduce the time required to deliver required blood to the needy in cases of emergency.

The Android application can be used by the people interested in donating their blood by locating their nearest blood bank. The web application provides a way of communication and synchronization between the hospitals and the blood banks. It also provides them with the facility of communicating with the nearby donors in emergency. The database is a vital aspect of the

system. The database of the hospitals and the blood banks must be checked for consistency on regular basis for smooth working of the system.

The proposed system uses Google Maps which provides the user with an efficient way of locating the nearby donors/blood banks. The Android application is developed using Android Studio which is an open source software, while the web application for the hospitals and the blood banks is also developed using open source tools, hence the system developed is quite feasible.

Chapter 6

REFERENCES

[1]. "Blood Bank Management Information System in India" by 1, Vikas Kulshreshtha, 2, Dr. Sharad Maheshwari 1, Research Scholar, 2, Associate Professor 2 1, Singhania University, Jhunjhunu, Rajasthan, India 2, Government Engineering College Jhalawar, Rajasthan, India

[2]. "Benefits of the Management Information System in Blood Bank" by 1, Vikas Kulshreshtha, 2, Dr. Sharad Maheshwari 1, Research Scholar, 2, Associate Professor 2 1, Singhania University, Jhunjhunu, Rajasthan, India 2, Government Engineering College Jhalawar, Rajasthan, India

[3]. "Android Blood Bank" by Prof. Snigdha1, Varsha Anabhavane2, Pratiksha lokhande3, Siddhi Kasar4, Pranita More5 Lecturer, Information Technology, Atharva College of Engineering, Mumbai, India 1 Student, Information Technology, Atharva College of Engineering, Mumbai, India 2,3,4,5

[4]. Vikas Kulshreshtha, Sharad Maheshwari. (2011)."Blood Bank Management Information System in India", International Journal of Engineering, 1,2, 260-263. Rational Unified Process, Best Practices for Software Development Teams. (2012).

[5].CoreWorkflowsRetrieved from www.ibm.com/developerworks/rational/.../1251_bestpractices Noushin Ashrafi, & Hessam Ashrafi. (2008). Object Oriented Systems Analysis and Design, Pearson Higher Ed USA. Lions Blood Bank & Research Foundation. (2012).

[6]. Retrieved from http://www.lionsbloodbank.net/ Blood Bank India. (2012). Retrieved from http://www.bloodbankindia.net

[7]. VikasKulshreshtha, Dr. SharadMaheshwari, “Blood Bank Management Information System in India”, Government Engineering College Jhalawar, International Journal of Engineering, Research and Applications (IJERA) ISSN:2248-9622, url:www.ijera.com Vol. 1, Issue 2, pp.260-263

[8].AndroidLocationAPIusingGooglePlayServiceshttp://www.androidhive.info/2015/02/android-locationapi-using-google-play-services

[9]AndroidLoginandRegistrationwithPHP,MySQLandSQLite<http://www.androidhive.info/2012/01/android- login-and-registration-with-php-mysql-and-sqlite/>

[10]Markers|GoogleMapsAndroidAPI<https://developers.google.com/maps/documentation/android-api/marker# code_samples> [12] Android Studio Installation <https://developer.android.com/studio/install.html>