Web-Based Automated Business Permit and Licensing System for OpenLGU

A Special Problem Presented to the Faculty of the
Institute of Computer Science
University of the Philippines, Los Baños

In Partial Fulfillment of the Requirements for the Degree of
Bachelor of Science in Computer Science

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Faculty of Institute of Computer Science of the University of Los Baños accepted this
Special Problem entitled

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by

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BIOGRAPHICAL SKETCH

Cristina Amor Corpuz Gatbonton is the only child of Orlando Gatbonton (deceased) and Nieves Corpuz(deceased). She was born on August 18, 1989 at Sta. Mesa, Manila. She grew up living with her relatives in Manila and Cavite.

In her elementary education, she graduated as the class valedictorian in Shalom Learning Center, Inc. She finished her secondary education in Gen. Mariano Alvarez Technical High School with an honorable mention in 2006. After two months, she was admitted to the University of the Philippines Los Baños to take up Bachelor of Science in Computer Science.

Cristina is a proud member of two organizations: UPLB Computer Science Society (UPLB COSS) and Gamma Sigma Sorority (UP Red Scorpions).

She has a passion for creating application programs, technology, singing, dancing, games, and sleeping.

CRISTINA AMOR CORPUZ GATBONTON

ACKNOWLEDGEMENTS

ABSTRACT

The OpenLGU Business Permits and Licensing System Module is an open-sourced web-based automated system which unifies the processing of business permits and licenses. To standardize the handling of permits and licenses requests, to ease the management of relevant documents, and to smoothen the coordination between LGUs and registrants are the primary aims of this study.

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I. INTRODUCTION

A.   Background of the Study

Businesses are substantial aspects in the improvement of our economy. A business helps in garnering revenues that are beneficial to our nation. In order for a business to be established, it needs to be authenticated and recognized by our government. This is done by acquiring permits and licenses that are needed to run the business. Issuance of business permits and licenses is managed by our local government units or LGUs. Business owners must go to the municipal office and secure an application form for the establishment of new businesses or renewal of permits and licenses of already existing businesses. The form and process for new businesses and for renewals are usually almost the same, only differing in the requirement files. After filling up and submitting the application form and the requirement files, the documents will then be assessed. Once assessed, the business owner must pay the fees, taxes, and charges needed in securing business permits and licenses. A site inspection is then conducted by other government agencies. After the business passed the site inspection, documents will then be sent to the mayors office or to the delegated signatory for signing of the release of the business permits and licenses. This system is called Business Permit and Licensing System (BPLS).

With these tedious works, a Joint Memorandum Circular no. 1 of Series 2010 by the DTI (Department of Trade and Industry) and the DILG (Department of Interior Local Government) was created to unify the systems used by our LGUs and also, reduce the processing time of business permits. [1]

B.   Statement of the Problem

Currently, most of the LGUs are processing the business permits and licenses manually. This manual processing of the application forms and requirements is tedious especially for the government

employees handling it. Too much paperwork and personally going to the local offices to check the status of a request is a bother. Also, delays and errors due to the inefficiency and unreliability of the manual system cause the business owners great inconvenience. Some LGUs in the country are already using automated systems to aid in the processing of business permits and licenses. Even though such systems already exist, the forms and procedures undertaken by these systems are not uniform and most of these systems are not easily accessible through the Internet or by the registrants themselves.

C.   Significance of the Study

With the flourishing of technology, web-based automation of systems and procedures are a great advantage. Managing the workflow for the processing of the permits and licenses will be easier, faster, and uncomplicated. Collation and coordination of the offices in processing the business permits and licenses will be convenient and will cost less especially if the system is standardized, web-based, and is established as open-source.

D.   Objectives of the Study

The general objective of this study is to develop a standardized web-based system that will automate the processing of business permits and licenses. This study particularly seeks to:

• Develop a standardized (a 5-step process) [1] web-based system that will administer the processing of documents.

• Provide significant information regarding the status of business permits and licenses.

• Furnish user-friendly interfaces for the government employees and business owners to use.

II. REVIEW OF RELATED LITERATURE

In this fast-paced era, the use of the Internet is very convenient for our development. Efficient and effective organization of information is critical for gaining improvement in our work.[2] In 2010, the DTI and the DILG began the countrywide reformation of BPLS. Guidelines in homogenizing the steps in processing business permits and licenses were released. [3] eBPLS (Electronic Business Permit Licensing System) was launched by NCC to further improve the streamlining of BPLS. This system automated the processing of business permits and licenses requests.[4] Though eBPLS was created, NCC decided to replace it, together with other systems that the government uses, with OpenLGU. [1]

III. METHODOLOGY

A. Technical Requirements

The minimum hardware requirements and software packages that were used in developing the system are as follows:

Minimum hardware requirements

- Operating System: Linux (Ubuntu)

- Processor: Pentium IV

- Random Access Memory: 512MB

Software packages

- Yii (Yes It Is!)

- postgreSQL

• Apache web server

B.   Functional Requirements

• Registration and Renewal of Businesses

• Upload of Required Documents

• Assessment of Fees

• Payment Records

• Approval and Issuance of Business Permit

• Generation and Download of Business Permit

• Email notification to taxpayers of business permit's approval

C.   System Design

Registrants and LGU employees can have access to the system through the Internet.

• *Login Page*

Unregistered users will not be able to access the system. There are six types of users:

REGISTERED, BPLO, ASSESSOR, TREASURY, LCE (Local Chief Executive), and

ADMIN.

• *Taxpayer Registration*

A Taxpayer(guest) can register an account in the system.

• *Business Registration*

A registered taxpayer can register a business for approval.

• *Search Business*

This function allows LGU employees to search for a business and view its data. They

can also view the taxpayer's profile of the said business.

• *Upload Documents*

A registered taxpayer can upload the required documents needed for the processing of the business permit.

• *Assessment*

The assessor can issue an assessment of fees for the business.

• *Payment Record*

The treasury department can set due dates of fees and save records of the payments made by the taxpayer for each business owned.

• *Approval*

The LCE can approve the business permit request and issue the business permit.

• *Issuance*

Upon issuance, a PDF copy of the business permit is generated and can be downloaded.

IV. RESULTS AND DISCUSSION

The software packages needed to develop the program were successfully installed and were collaborated properly. Business instances were created under a registered user's account and were able to have their business permits. Every business registered shows up on the LGU employee's list while every taxpayer sees only his/her owned businesses. The pdf copy ofthe business permits were successfully generated and is downloadable.
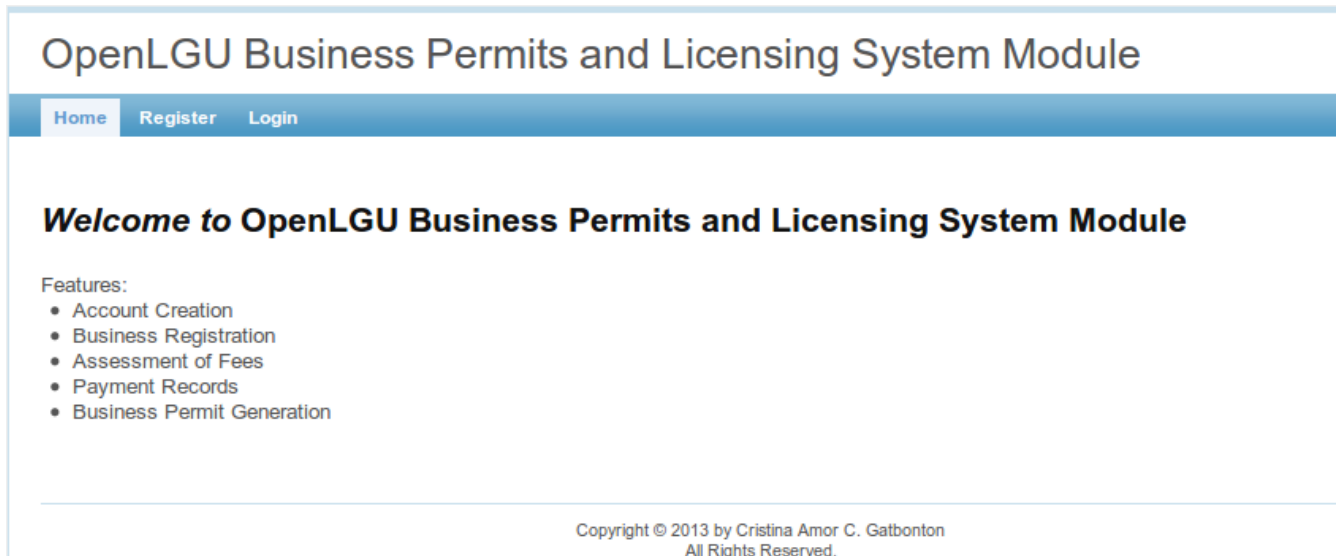
Figure 1: OpenLGU BPLS Home Page
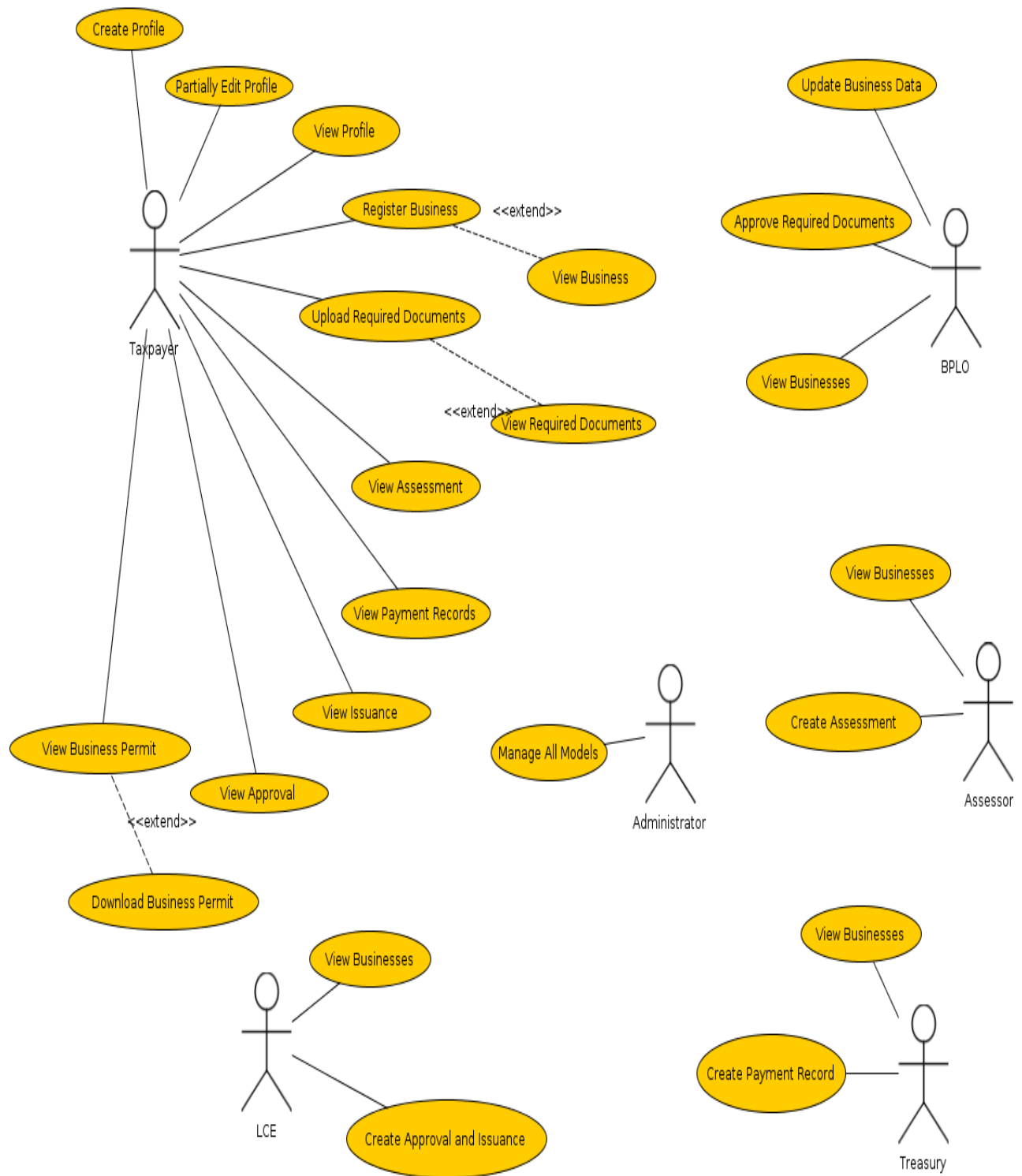

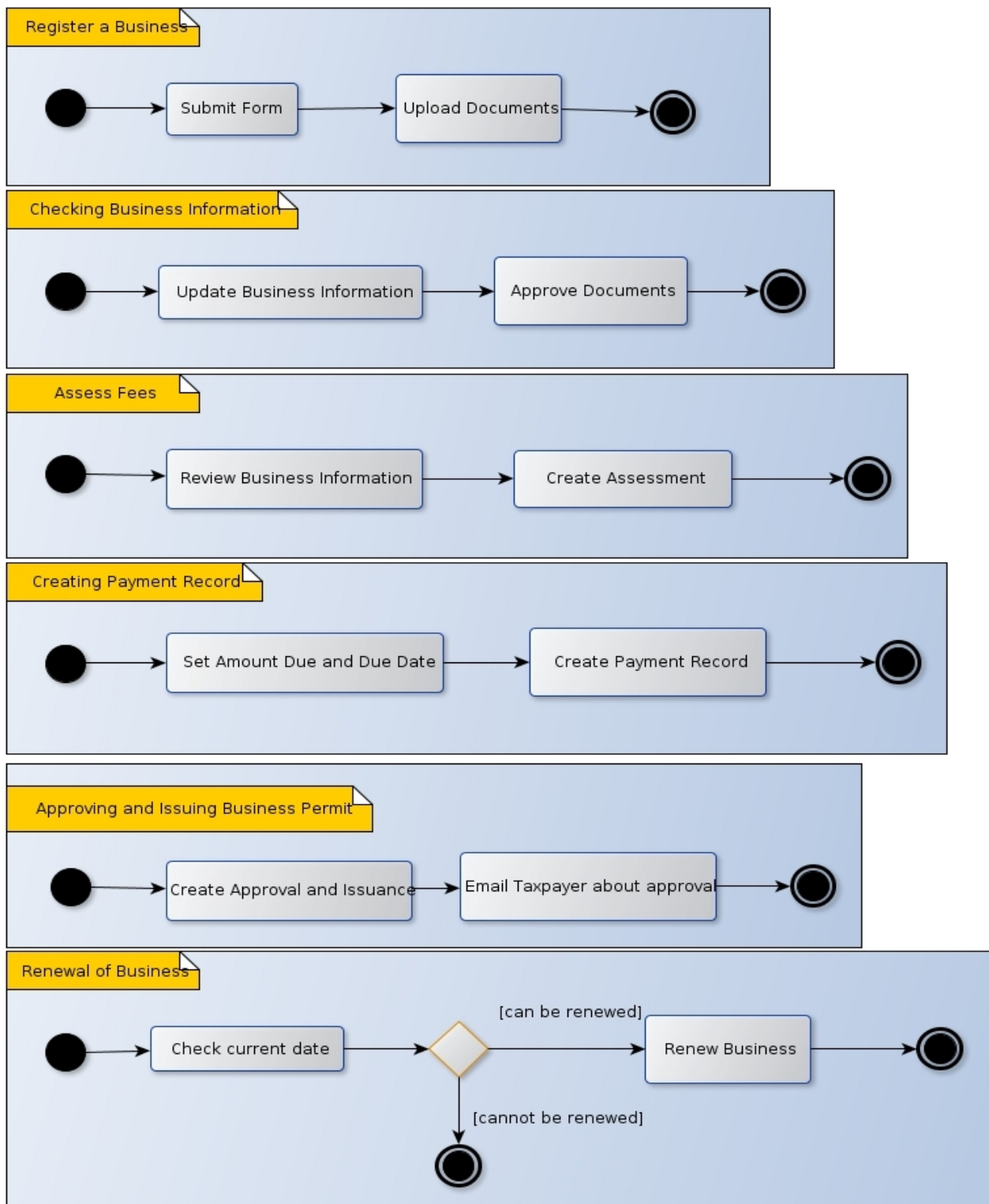*Figure 2: OpenLGU BPLS Business List (REGISTERED User)*

Figure 3: Use-Case Diagram

Figure 4: Activity Diagram

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LOB
- code VARCHAR
- description VARCHAR

Contact_Reference
- contact_id INT
- user_id INT
- type VARCHAR
- detail VARCHAR
- sys_entry_date DATE

Address
- address_id INT
- user_id INT
- unit_num VARCHAR
- street VARCHAR
- subdivision VARCHAR
- barangay VARCHAR
- full_address VARCHAR
- sys_entry_date DATE

Taxpayer
- user_id INT
- email VARCHAR
- password VARCHAR
- application_date DATE
- first_name VARCHAR
- middle_name VARCHAR
- last_name VARCHAR
- suffix_name VARCHAR
- full_name VARCHAR
- dob_month VARCHAR
- dob_day VARCHAR
- dob_year VARCHAR
- dob_full DATE
- civil_status VARCHAR
- gender VARCHAR
- tin VARCHAR
- role VARCHAR
- sys_entry_date DATE

Business
- business_id INT
- user_id INT
- name VARCHAR
- trade_name VARCHAR
- president_name VARCHAR
- org_type VARCHAR
- ein VARCHAR
- tin VARCHAR
- lob_code VARCHAR
- lob_desc VARCHAR
- capital_amount DOUBLE
- tel_num VARCHAR
- website_url VARCHAR
- bldg_num VARCHAR
- bldg_name VARCHAR
- unit_num VARCHAR
- street VARCHAR
- subdivision VARCHAR
- barangay VARCHAR
- property_index_num VARCHAR
- has_lessor VARCHAR
- lessor_business_id INT
- business_area DOUBLE
- employee_count INT
- sss_ref VARCHAR
- sec_ref VARCHAR
- dti_ref VARCHAR
- cda_ref VARCHAR
- fsic_ref VARCHAR
- application_barcode VARCHAR
- barangay_barcode VARCHAR
- zoning_barcode VARCHAR
- sanitary_barcode VARCHAR
- occupancy_barcode VARCHAR
- others_one_barcode VARCHAR
- others_two_barcode VARCHAR
- others_three_barcode VARCHAR
- others_four_barcode VARCHAR
- tax_payment_type VARCHAR
- status VARCHAR
- full_address VARCHAR
- pay_mode VARCHAR
- postal_code VARCHAR
- sys_entry_date DATE

Emergency_Contact
- emergency_id INT
- user_id INT
- first_name VARCHAR
- middle_name VARCHAR
- last_name VARCHAR
- suffix_name VARCHAR
- full_name VARCHAR
- contact_num VARCHAR
- contact_email VARCHAR
- contact_relationship VARCHAR
- sys_entry_date DATE

Document
- document_id INT
- account_holder_id INT
- barangay_clearance VARCHAR
- barangay_status VARCHAR
- zoning_clearance VARCHAR
- zoning_status VARCHAR
- sanitary_clearance VARCHAR
- sanitary_status VARCHAR
- occupancy_permit VARCHAR
- occupancy_status VARCHAR
- fire_safety VARCHAR
- fire_safety_status VARCHAR
- file_path VARCHAR
- sys_entry_date DATE

Progress
- progress_id INT
- account_holder_id INT
- business_information VARCHAR
- documents VARCHAR
- assessment VARCHAR
- payment VARCHAR
- approval VARCHAR

Business_Account_Detail
- account_detail_id INT
- account_holder_id INT
- pay_mode VARCHAR
- capital_amount DOUBLE
- gross_sales_tax DOUBLE
- gross_sales_tax_amt DOUBLE
- gross_sales_tax_pnl DOUBLE
- transport_truck_tax DOUBLE
- transport_truck_tax_amt DOUBLE
- transport_truck_tax_pnl DOUBLE
- hazard_storage_tax DOUBLE
- hazard_storage_tax_amt DOUBLE
- hazard_storage_tax_pnl DOUBLE
- sign_billboard_tax DOUBLE
- sign_billboard_tax_amt DOUBLE
- sign_billboard_tax_pnl DOUBLE
- mayors_permit_fee DOUBLE
- mayors_permit_fee_amt DOUBLE
- mayors_permit_fee_pnl DOUBLE
- garbage_fee DOUBLE
- garbage_fee_amt DOUBLE
- garbage_fee_pnl DOUBLE
- truck_van_permit_fee DOUBLE
- truck_van_permit_fee_amt DOUBLE
- truck_van_permit_fee_pnl DOUBLE
- sanitary_permit_fee DOUBLE
- sanitary_permit_fee_amt DOUBLE
- sanitary_permit_fee_pnl DOUBLE
- bldg_insp_fee DOUBLE
- bldg_insp_fee_amt DOUBLE
- bldg_insp_fee_pnl DOUBLE
- elec_insp_fee DOUBLE
- elec_insp_fee_amt DOUBLE
- elec_insp_fee_pnl DOUBLE
- mech_insp_fee DOUBLE
- mech_insp_fee_amt DOUBLE
- mech_insp_fee_pnl DOUBLE
- plumb_insp_fee DOUBLE
- plumb_insp_fee_amt DOUBLE
- plumb_insp_fee_pnl DOUBLE
- sign_billboard_fee DOUBLE
- sign_billboard_fee_amt DOUBLE
- sign_billboard_fee_pnl DOUBLE
- sign_billboard_renew_fee DOUBLE
- sign_billboard_renew_fee_amt DOUBLE
- sign_billboard_renew_fee_pnl DOUBLE
- hazard_storage_fee DOUBLE
- hazard_storage_fee_amt DOUBLE
- hazard_storage_fee_pnl DOUBLE
- bfp_fee DOUBLE
- bfp_fee_amt DOUBLE
- bfp_fee_pnl DOUBLE
- grand_total DOUBLE
- sys_entry_date DATE

Business_Account_Holder
- account_holder_id INT
- business_id INT
- user_id INT
- application_date DATE

Approval
- approval_id INT
- account_holder_id INT
- sic_code VARCHAR
- property_index_code VARCHAR
- postal_code VARCHAR
- full_business_name VARCHAR
- remarks VARCHAR
- approval_status VARCHAR
- business_reg_num VARCHAR
- action_date DATE
- approval_date DATE
- issue_date DATE
- next_renewal_date DATE
- sys_entry_date DATE

Payment_Detail
- payment_detail_id INT
- pay_mode_id INT
- pay_mode VARCHAR
- capital_amount DOUBLE
- gross_sales_tax DOUBLE
- gross_sales_tax_amt DOUBLE
- gross_sales_tax_pnl DOUBLE
- transport_truck_tax DOUBLE
- transport_truck_tax_amt DOUBLE
- transport_truck_tax_pnl DOUBLE
- hazard_storage_tax DOUBLE
- hazard_storage_tax_amt DOUBLE
- hazard_storage_tax_pnl DOUBLE
- sign_billboard_tax DOUBLE
- sign_billboard_tax_amt DOUBLE
- sign_billboard_tax_pnl DOUBLE
- mayors_permit_fee DOUBLE
- mayors_permit_fee_amt DOUBLE
- mayors_permit_fee_pnl DOUBLE
- garbage_fee DOUBLE
- garbage_fee_amt DOUBLE
- garbage_fee_pnl DOUBLE
- truck_van_permit_fee DOUBLE
- truck_van_permit_fee_amt DOUBLE
- truck_van_permit_fee_pnl DOUBLE
- sanitary_permit_fee DOUBLE
- sanitary_permit_fee_amt DOUBLE
- sanitary_permit_fee_pnl DOUBLE
- bldg_insp_fee DOUBLE
- bldg_insp_fee_amt DOUBLE
- bldg_insp_fee_pnl DOUBLE
- elec_insp_fee DOUBLE
- elec_insp_fee_amt DOUBLE
- elec_insp_fee_pnl DOUBLE
- mech_insp_fee DOUBLE
- mech_insp_fee_amt DOUBLE
- mech_insp_fee_pnl DOUBLE
- plumb_insp_fee DOUBLE
- plumb_insp_fee_amt DOUBLE
- plumb_insp_fee_pnl DOUBLE
- sign_billboard_fee DOUBLE
- sign_billboard_fee_amt DOUBLE
- sign_billboard_fee_pnl DOUBLE
- sign_billboard_renew_fee DOUBLE
- sign_billboard_renew_fee_amt DOUBLE
- sign_billboard_renew_fee_pnl DOUBLE
- hazard_storage_fee DOUBLE
- hazard_storage_fee_amt DOUBLE
- hazard_storage_fee_pnl DOUBLE
- bfp_fee DOUBLE
- bfp_fee_amt DOUBLE
- bfp_fee_pnl DOUBLE
- grand_total DOUBLE
- or_num VARCHAR
- sys_entry_date DATE

Issuance
- issuance_id INT
- approval_id INT
- business_reg_num VARCHAR
- full_business_name VARCHAR
- or_reference VARCHAR
- or_reference_date DATE
- released_to VARCHAR
- scheduled_release_date DATE
- actual_release_date DATE
- issuance_barcode_ref VARCHAR
- issued_by_name VARCHAR
- issued_by_id VARCHAR
- sys_entry_date DATE

Payment_Holder
- payment_holder_id INT
- account_holder_id INT
- business_id INT

Pay_Mode
- pay_mode_id INT
- payment_holder_id INT
- due_date DATE
- or_num VARCHAR
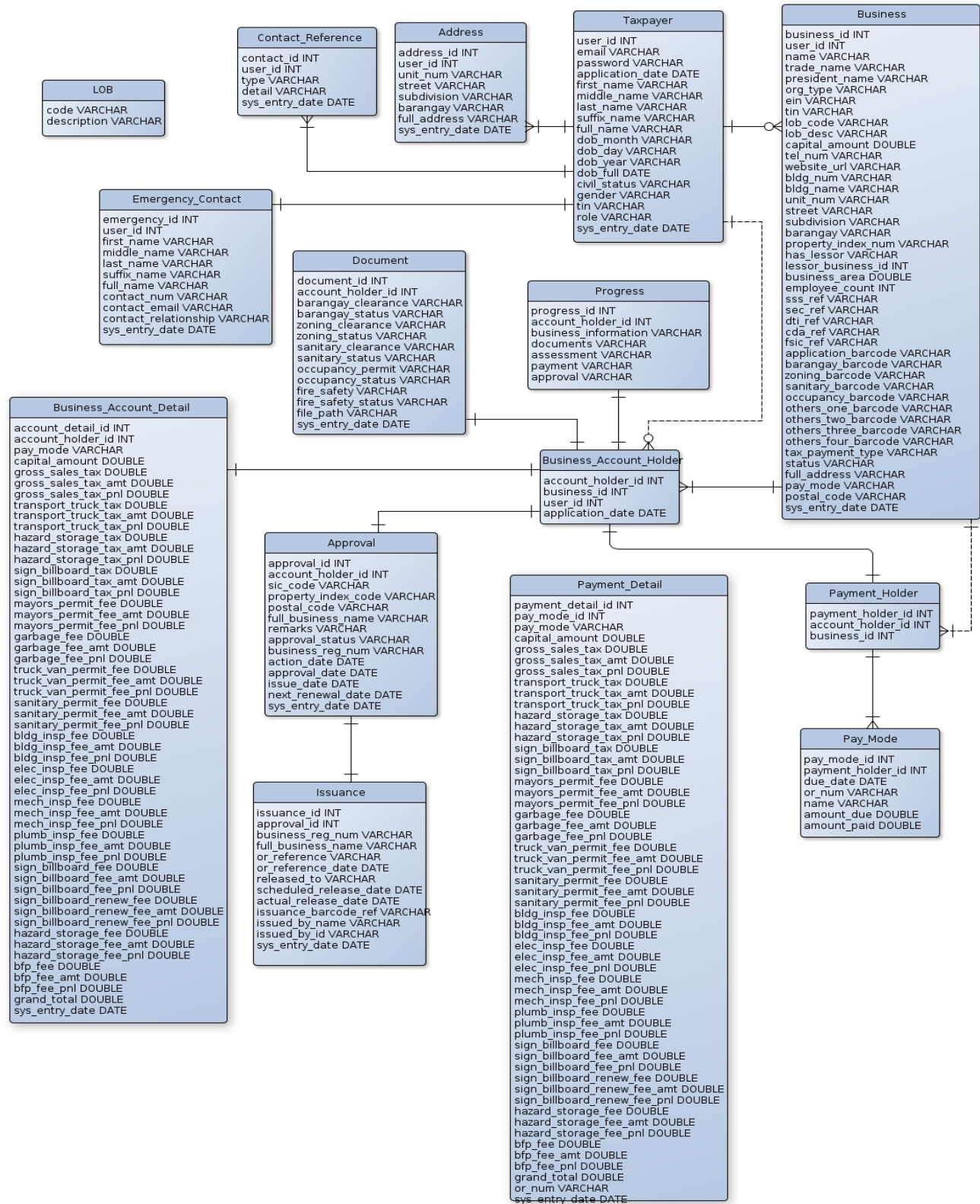- name VARCHAR
- amount_due DOUBLE
- amount_paid DOUBLE

Figure 5: Entity-Relationship Diagram

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V. CONCLUSION

The application successfully processed business permits more efficiently than the manual transactions. Every function worked as intended under normal circumstances. The clean user interface theme provided by Yii worked its purpose of being user-friendly and lightweight.

VI. RECOMMENDATIONS

The module can be improved by having a messaging system which will allow users to receive notifications about the system (deadline, news, etc) rather than getting it only from their registered email address. It can also have a real-time chatting system so that users can immediately access help from the LGU employees in case a problem was encountered. Another useful addition to the system would be an SMS-notification system.

APPENDIX: LIST OF FIGURES

REFERENCES

[1] Camara, Alid David,et al. BPLS Automation Planning and Implementation Guide Computerizing Business Permits and Licensing Systems in the Philippines. 2011.

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[3] Olchondra, Riza T. DTI pushes automation of permits, licensing.Philippine Daily Inquirer.2012.

[4] NCC eBusiness Permit and Licensing System (eBPLS). http://code.google.com/p/ebpls/eBPLSPresentation-2007.ppt.2007.