

**TECHNICAL REPORT OF STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME (SIWES)**

CARRIED OUT AT

**PALMTREE TECHNOLOGIES LIMITED**



BY

**MADUKOMA, BLESSED CHIKADIBIA**

**18/1154**

**SOFTWARE ENGINEERING**

**BABCOCK UNIVERSITY, ILISHAN-REMO,**

**OGUN STATE, NIGERIA**

PRESENTATION TO THE

**DEPARTMENT OF SOFTWARE ENGINEERING**

**FROM JANUARY 13TH 2021 TO JUNE 30TH 2021**

**CERTIFICATION**

This is to certify that I, , hereby declare that the information in this report was written by me. It is true that I did the student industrial work experience scheme (SIWES) otherwise known as Industrial Training (IT) between January 13th 2021 and June 30th 2021.

Student’s Matric No: 18/1154

Student’s Signature:

SIWES Coordinator/Supervisor:

Oral IT-Defence Coordinator:

SIWES Class Code: SE029

Student name: MADUKOMA, BLESSED CHIKADIBIA

Matric: 18/1154

Email: blessedmadukoma@gmail.com

Level: 300 Level

Course of study: Software Engineering

Mobile number: 09030609267, 09156076286, 08085234203

Company name: PalmTree Technologies Limited (BIZ301)

Postal Address & traceable location of company: 10, Oba Yekini Street, Ikate - Elegushi, Ikate, Lagos, Nigeria.

Geographical state: Lagos State

Company Email: info@biz301.com

Company Phone Number: +2347062246379

Company website: [https://biz301.com/](https://sidmach.com/)

Staff strength (Number of staff): 10-20

Name of Industry Based Unit Head (immediate supervisor): Akintayo Oluwatoyin

Mobile number (Supervisor): +2348032012610

**ACKNOWLEDGEMENT**

I give my unreserved and profound gratitude to the Almighty God for the ever-abiding presence right from the time I was conceived to this present moment.

It was a great privilege to have internship with this great Organization, I had the opportunity for learning and self-development.

Also, it is obligatory to be thankful to the Managing Director /Chief Executive Office Mr. Akintayo Oluwatoyin and the entire management staff of PalmTree Technologies Limited, for his fatherly love and making my industrial attachment really interesting and educative.

I render my sincere thanks to the lecturers in the Department of Software Engineering and the School of Computing and Engineering Sciences, Babcock University for all the ways by which they have impacted knowledge into the students of the faculty in person of Prof. Sunday Idowu, Mr. Adetunji Oluwatofunmi, Dr. Aaron Izang, Dr. Adebowale Ajayi, Dr. Mrs. Folashade Kuyoro and the Head of Department Dr. Olubukola Adekola.

It is my radiant sentiment to place on record my best regards and deepest sense of gratitude to the staff of PalmTree Technologies Limited such as Aborishade Elijah, Ebunoluwa Tella, Eunice Yohanna and the other interns with whom I was fortunate to meet on this great experience, I say remain blessed by God Almighty.

My sincere gratitude goes to my strong-willed father and amazingly loving mother for their care and support. I also appreciate the effort of my siblings for their forever care and support.

I also want to show my appreciation to Elder Jimoh who made all this possible by paving a way for me into such a wonderful company.

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ABSTRACT

This report is on a portion of the significant tasks I did during my 6 months SIWES program with the company. SIWES aims and objectives are to provide students with practical experience of what they have been taught theoretically in school. PalmTree Technologies Limited is an indigenous IT company which creates, designs, builds and maintains custom software solutions. In the company I was able to develop my Backend skills by improving on my pre-existing PHP knowledge using special features and frameworks such as Laravel and Lumen to develop backend services; other job roles in the company involves coding, user testing and software deployment. The report focuses on the experiences I gained from SIWES at PalmTree Technologies Limited and I would recommend they keep the SIWES program going so that students in the higher institution can gain more practical experiences which will prepare them ahead of the labour market demand.

CHAPTER ONE: INTRODUCTION OF SIWES

## HISTORICAL REVIEW OF SIWES

The Student Industrial Work Experience Scheme (SIWES) is a program created by the Industrial Trust Fund (ITF) for student in higher Institution of learning. SIWES was established by ITF in 1973 to solve the problem of lack of adequate practical skills preparatory for employment in industries by Nigerian graduates of tertiary institutions. The Scheme exposes students to industry-based skills necessary for a smooth transition from the classroom to the world of work. It affords students of tertiary institutions the opportunity of being familiarized and exposed to the needed experience in handling machinery and equipment which are usually not available in the educational institutions.

Participation in Industrial Training is a well-known educational strategy. Classroom studies are integrated with learning through hands-on work experiences in a field related to the student’s academic major and career goals. Successful internships foster an experiential learning process that not only promotes career preparation but provides opportunities for learners to develop skills necessary to become leaders in their chosen professions.

One of the primary goals of the SIWES is to help students integrate leadership development into the experiential learning process. Students are expected to learn and develop basic non-profit leadership skills through a mentoring relationship with innovative non-profit leaders.

By integrating leadership development activities into the Industrial Training experience, we hope to encourage students to actively engage in non-profit management as a professional career objective. However, the effectiveness of the SIWES experience will have varying outcomes based upon the individual student, the work assignment, and the supervisor/mentor requirements. It is vital that each internship position description includes specific, written learning objectives to ensure leadership skill development is incorporated.

Participation in **SIWES** has become a necessary pre-condition for the award of Diploma and Degree certificates in specific disciplines in most institutions of higher learning in the country, in accordance with the education policy of the government. Operators - The ITF, the coordinating agencies (NUC, NCCE, NBTE), employers of labour and the institutions. Funding - The Federal Government of Nigeria, Beneficiaries - Undergraduate students of the following: Agriculture, Engineering, Technology, Environmental, Science, Education, Medical Science and

Pure and Applied Sciences. Duration - Four months for Polytechnics and Colleges of Education, and Six months for the Universities. (ITF, 2015)

## DEFINITION OF SIWES

SIWES is an acronym which means Students Industrial Work Experience Scheme.

## AIMS AND OBJECTIVES OF SIWES

1. The aims and objectives of SIWES are to provide student with practical experience of what they have been taught theoretically in school.
2. With some of the experience gained during SIWES, student will be able to overcome future challenges while working.
3. Its enable the student to develop an area of interest where he/she can specialize in the future
4. The Industrial training also may provide future employment opportunities for student that performed excellently during their Industrial Training (SIWES).
5. SIWES students will develop employment records/references that will enhance employment opportunities.
6. SIWES will provide students the opportunity to understand informal organizational interrelationships.
7. SIWES Students will be able to outline at least five specific goals with several staff members by comparing performance with job duties and develop a draft plan with staff to accomplish performance needs, supervision plan and rewards.
8. SIWES Students will be able to develop a draft agency or project budget and will be able to identify methods of obtaining revenue to support the budget.
9. SIWES Students will be able to provide tools to use in prioritizing tasks of an assigned project and create with staff a tentative schedule for completion based on these tasks.

CHAPTER TWO: COMPANY PROFILE

## HISTORICAL BACKGROUND OF THE ORGANISATION



PalmTree Technologies Limited (trade name: BIZ301) is an indigenous Information Technology (IT) company incorporated in 2019 by Akintayo Oluwatoyin, a personnel committed to providing quality, professional, customized and timely service to clients.

It is located at 10, Oba Yekini Street, Ikate - Elegushi, Ikate, Lagos, Nigeria. BIZ301 was set up to create technology soluions that enable African busineses digitize their processes.

## Mission of BIZ301 is to create the most cost-effective technology solutions that enable businesses to achieve operational efficiency.

## MAJOR ACTIVITIES OF THE ORGANISATION

BIZ301 main activity is design and development of business-ready solutions to produce operational efficiency. An example is the <https://www.biz301.com> web application developed to aid businesses and clients properly manage their customers and invoices.

CHAPTER THREE: RESPONSIBILITIES AND PARTICIPATION

## RESPONSIBILITIES AND PARTICIPATION

In the six months spent on industrial work experience, my job roles were:

1. Testing: of projects done for biz301.com
2. Software Deployment: of code written for the biz301.com web application.
3. Coding: firstly, of test projects given to the interns by the company; secondly, by developing backend services using Lumen (a PHP framework) as recommended by the assigned company supervisor.

CHAPTER FOUR: WORK EXPERIENCE AND KNOWLEDGE GAINED

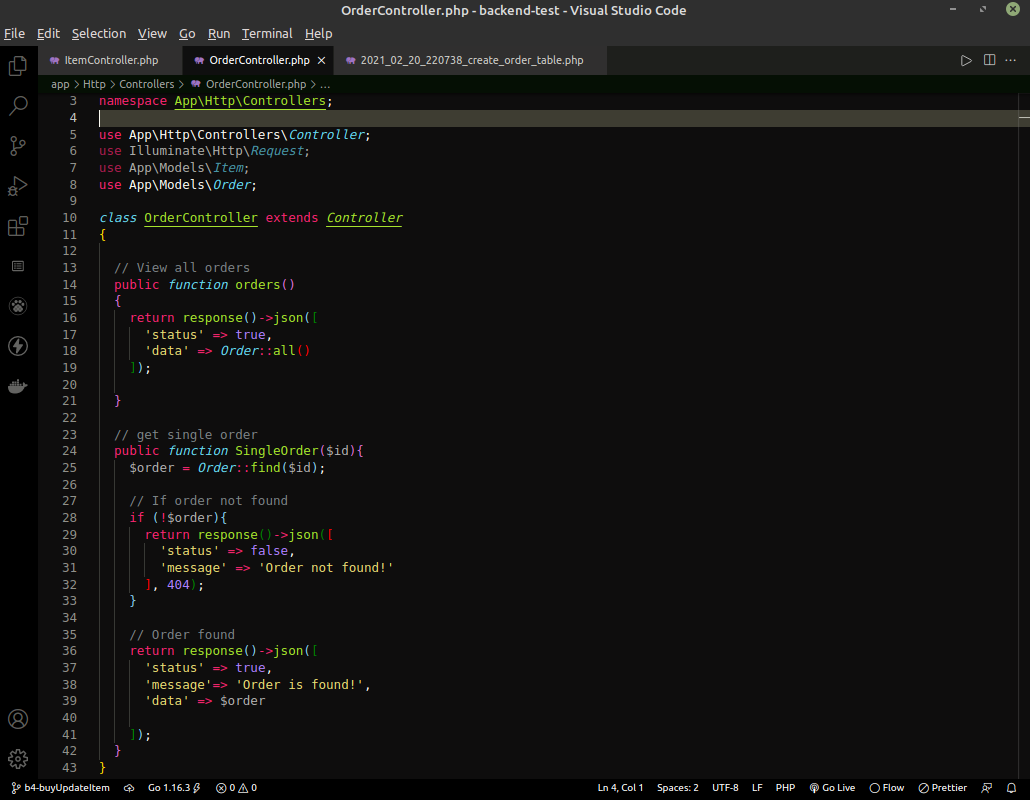
## ACTIVITIES DURING SIWES

I developed backend services, worked with Payment Gateways and companies to provide hgh-end solutions for clients:

## EXPERIENCE GAINED FROM BACKEND TUTORIAL

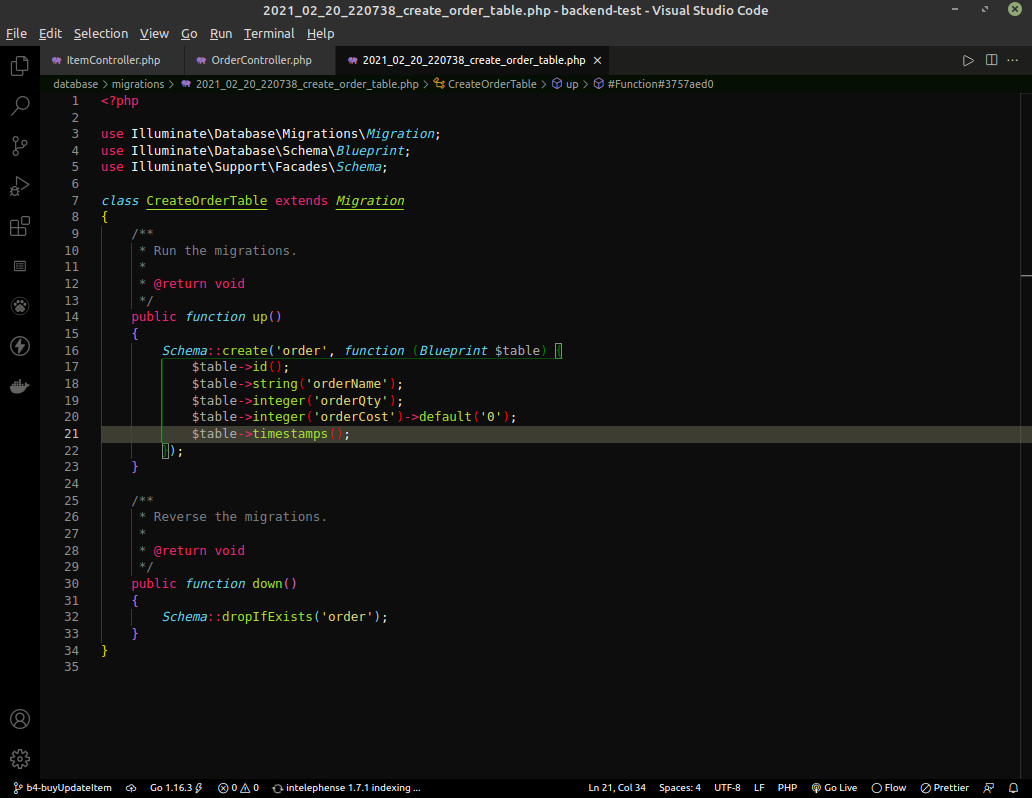
I was able to develop my Backend skills by re-visiting my PHP knowledge, learning Laravel and Lumen (PHP frameworks).

Pictures of the codes are shown below.



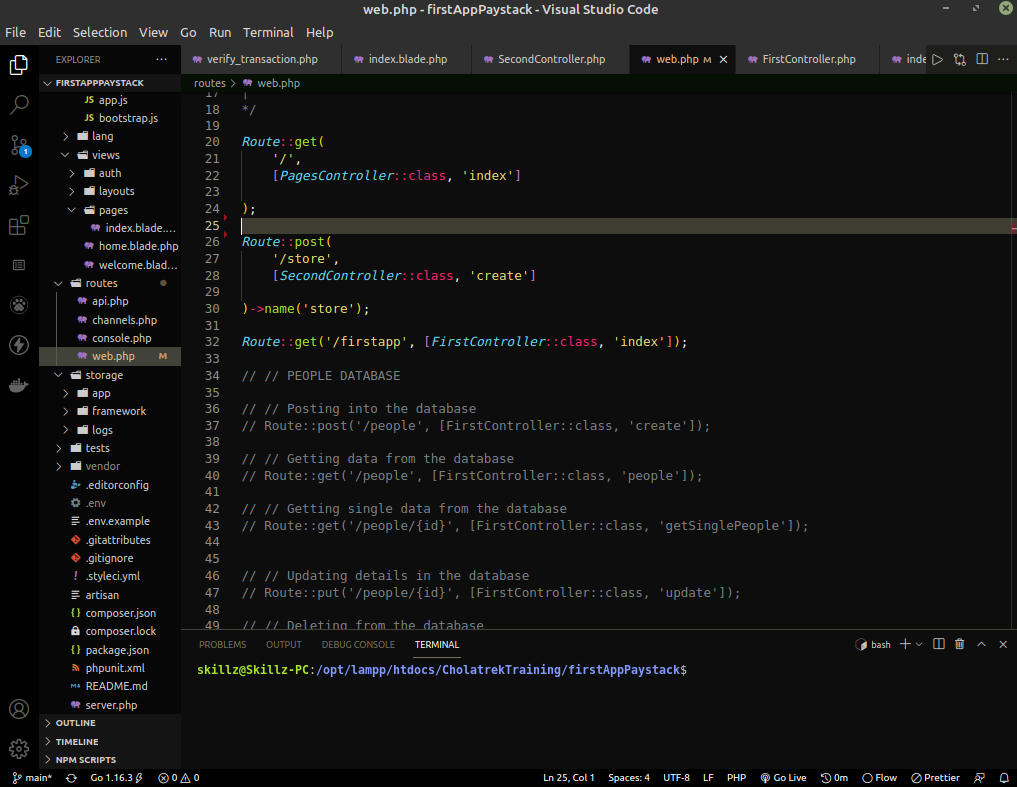
|  |
| --- |
| <?php  namespace App\Http\Controllers;  use App\Http\Controllers\Controller;  use Illuminate\Http\Request;  use App\Models\Item;  use App\Models\Order;  class OrderController extends Controller  {  // View all orders  public function orders()  {  return response()->json([  'status' => true,  'data' => Order::all()  ]);  }  // get single order  public function SingleOrder($id){  $order = Order::find($id);  // If order not found  if (!$order){  return response()->json([  'status' => false,  'message' => 'Order not found!'  ], 404);  }  // Order found  return response()->json([  'status' => true,  'message'=> 'Order is found!',  'data' => $order    ]);  }  } |

Figure 4.1.1: Backend Test - laravel controller (Screenshot 1)



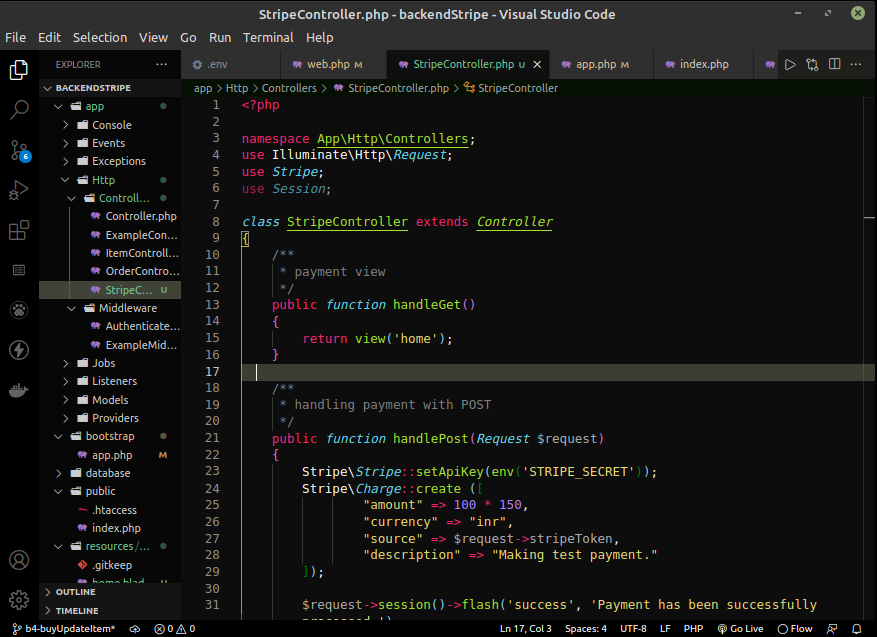
|  |
| --- |
| <?php  use Illuminate\Database\Migrations\Migration;  use Illuminate\Database\Schema\Blueprint;  use Illuminate\Support\Facades\Schema;  class CreateOrderTable extends Migration  {  /\*\*  \* Run the migrations.  \* @return void  \*/  public function up()  {  Schema::create('order', function (Blueprint $table) {  $table->id();  $table->string('orderName');  $table->integer('orderQty');  $table->integer('orderCost')->default('0');  $table->timestamps();  });  }  /\*\*  \* Reverse the migrations.  \* @return void  \*/  public function down()  {  Schema::dropIfExists('order');  }  } |

Figure 4.1.2: Backend Test - laravel migration (Screenshot 2)



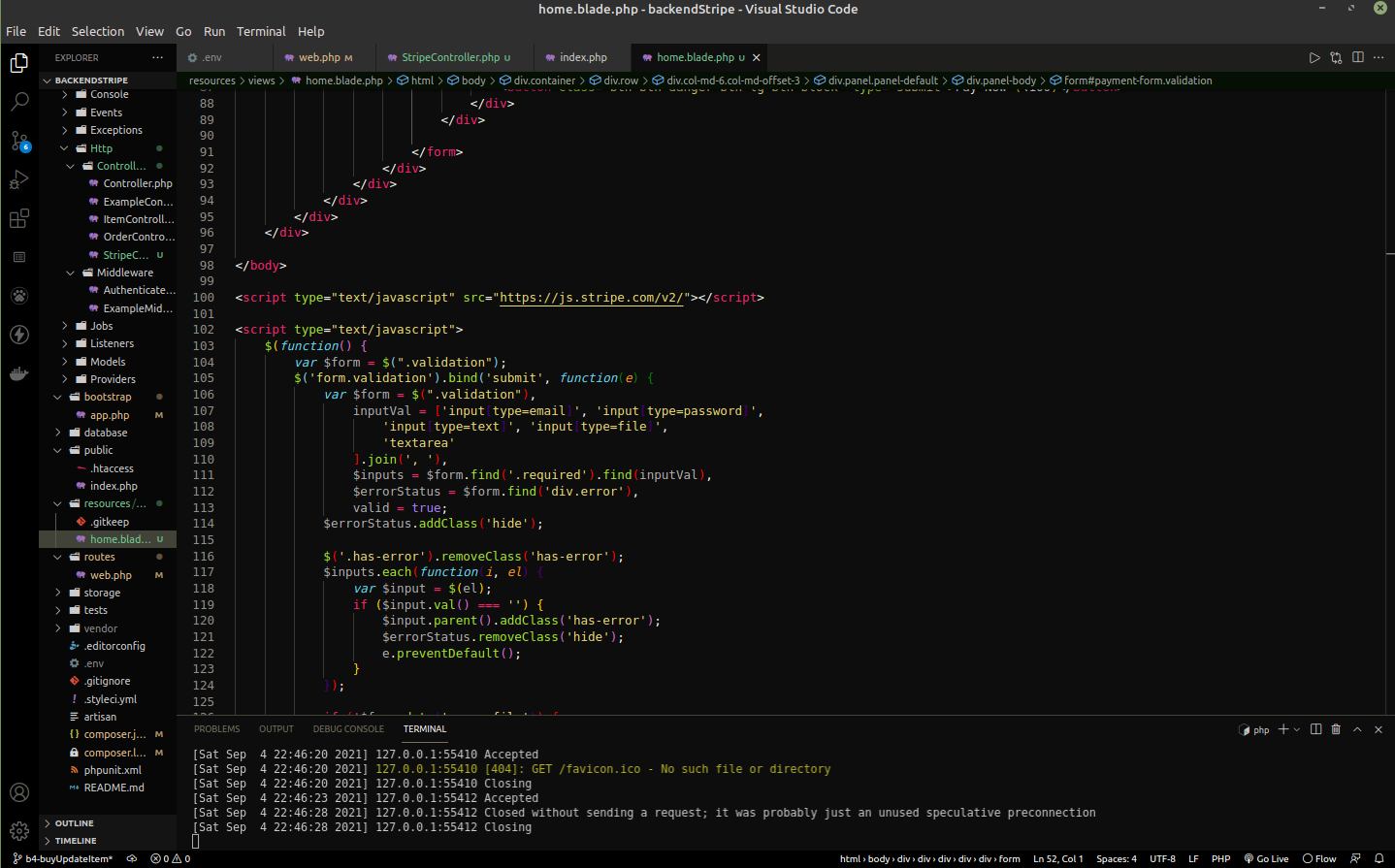
|  |
| --- |
| <?php  /\*\* @var \Laravel\Lumen\Routing\Router $router \*/  /\*  |--------------------------------------------------------------------------  | Application Routes  |--------------------------------------------------------------------------  |  | Here is where you can register all of the routes for an application.  | It is a breeze. Simply tell Lumen the URIs it should respond to  | and give it the Closure to call when that URI is requested.  |  \*/  $router->get('/', function () use ($router) {  // return $router->app->version();  return view('payment');  });  // Paystack  $router->post('/pay', 'ItemController@redirectToGateway');  $router->get('/callback', 'ItemController@handleGatewayCallback');  // Item Routes  $router->post('/item', 'ItemController@create');  $router->get('/item', 'ItemController@index');  $router->get('/item/{id}', 'ItemController@SingleItem');  $router->post('/item/{id}', 'ItemController@update');  $router->get('/item/{id}/buy', 'ItemController@buyItem');  $router->post('/item/{id}/buy', 'ItemController@buyItem');  // Order Routes  $router->get('/orders', 'OrderController@orders');  $router->get('/orders/{id}', 'OrderController@SingleOrder'); |

Figure 4.1.3: Paystack and Laravel Integration - route file (Screenshot 3)



|  |
| --- |
| <?php  namespace App\Http\Controllers;  use Illuminate\Http\Request;  use Stripe;  use Session;  class StripeController extends Controller  {  /\*\*  \* payment view  \*/  public function handleGet()  {  return view('home');  }    /\*\*  \* handling payment with POST  \*/  public function handlePost(Request $request)  {  Stripe\Stripe::setApiKey(env('STRIPE\_SECRET'));  Stripe\Charge::create ([  "amount" => 100 \* 150,  "currency" => "inr",  "source" => $request->stripeToken,  "description" => "Making test payment."  ]);    $request->session()->flash('success', 'Payment has been successfully processed.');    return response()->json([  'status'=>true,  'message'=>'Payment successful'  ]);  }  } |

Figure 4.1.4: Laravel and Stripe Integration - stripe controller file (Screenshot 4)

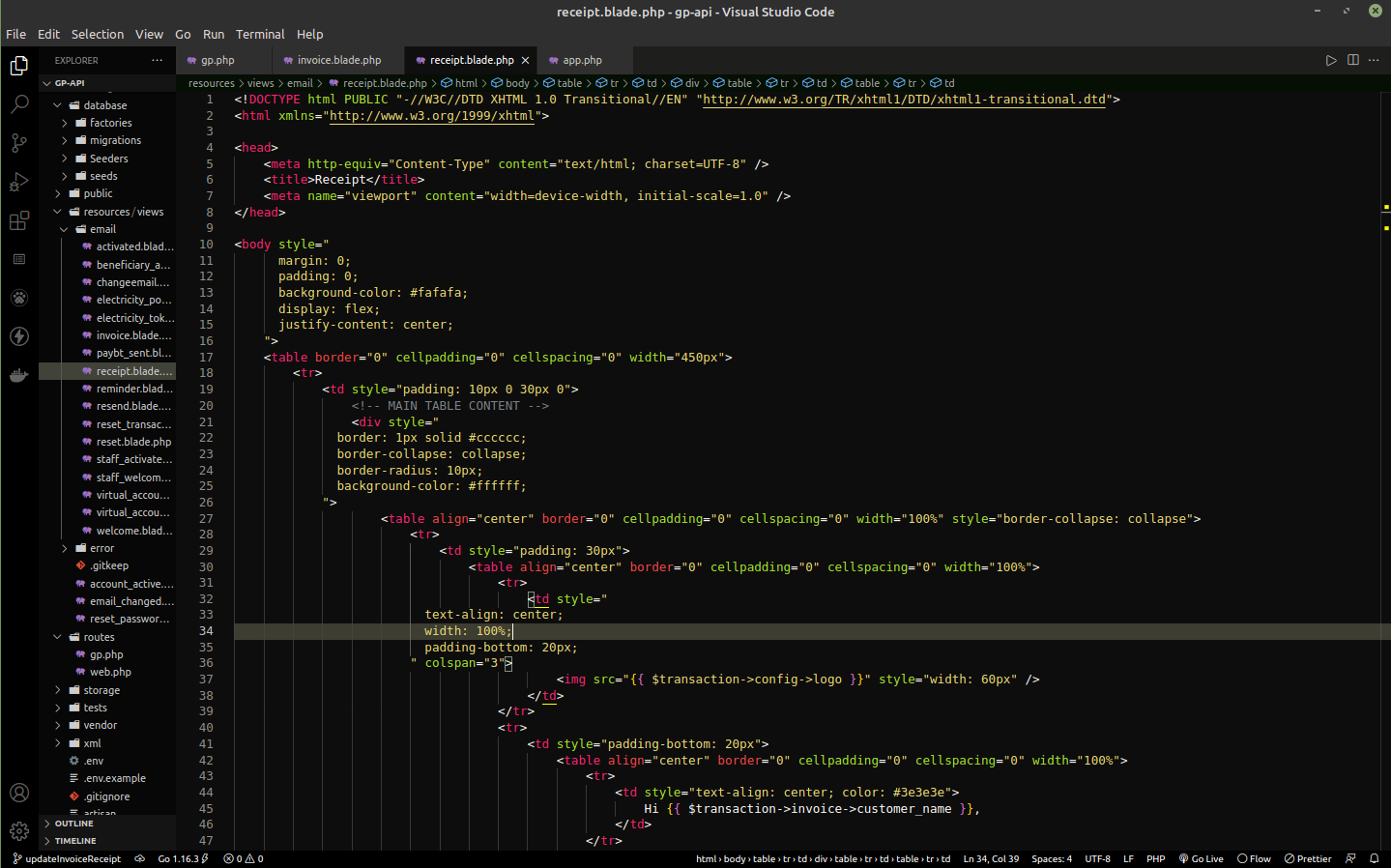


|  |
| --- |
| <!DOCTYPE html>  <html>  <head>  <title>Laravel 7 - Integrate Stripe Payment Gateway Example</title>  <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/twitter-bootstrap/3.3.7/css/bootstrap.min.css" />  <script src="https://code.jquery.com/jquery-3.5.1.slim.min.js"></script>  <style type="text/css">  .container {  margin-top: 40px;  }  .panel-heading {  display: inline;  font-weight: bold;  }  .flex-table {  display: table;  }  .display-tr {  display: table-row;  }  .display-td {  display: table-cell;  vertical-align: middle;  width: 55%;  }  </style>  </head>  <body>  <div class="container">  <div class="row">  <div class="col-md-6 col-md-offset-3">  <div class="panel panel-default">  <div class="panel-heading">  <div class="row text-center">  <h3 class="panel-heading">Payment Details</h3>  </div>  </div>  <div class="panel-body">  <div class="alert alert-success text-center">  <a href="#" class="close" data-dismiss="alert" aria-label="close">×</a>  </div>  <form role="form" action="/stripe-payment" method="post" class="validation" data-cc-on-file="false" data-stripe-publishable-key="{{ env('STRIPE\_KEY') }}" id="payment-form">  <div class='form-row row'>  <div class='col-xs-12 form-group required'>  <label class='control-label'>Name on Card</label> <input class='form-control' size='4' type='text'>  </div>  </div>  <div class='form-row row'>  <div class='col-xs-12 form-group card required'>  <label class='control-label'>Card Number</label> <input autocomplete='off' class='form-control card-num' size='20' type='text'>  </div>  </div>  <div class='form-row row'>  <div class='col-xs-12 col-md-4 form-group cvc required'>  <label class='control-label'>CVC</label>  <input autocomplete='off' class='form-control card-cvc' placeholder='e.g 415' size='4' type='text'>  </div>  <div class='col-xs-12 col-md-4 form-group expiration required'>  <label class='control-label'>Expiration Month</label> <input class='form-control card-expiry-month' placeholder='MM' size='2' type='text'>  </div>  <div class='col-xs-12 col-md-4 form-group expiration required'>  <label class='control-label'>Expiration Year</label> <input class='form-control card-expiry-year' placeholder='YYYY' size='4' type='text'>  </div>  </div>  <div class='form-row row'>  <div class='col-md-12 hide error form-group'>  <div class='alert-danger alert'>Fix the errors before you begin.</div>  </div>  </div>  <div class="row">  <div class="col-xs-12">  <button class="btn btn-danger btn-lg btn-block" type="submit">Pay Now (₹100)</button>  </div>  </div>  </form>  </div>  </div>  </div>  </div>  </div>  </body>  <script type="text/javascript" src="https://js.stripe.com/v2/"></script>  <script type="text/javascript">  $(function() {  var $form = $(".validation");  $('form.validation').bind('submit', function(e) {  var $form = $(".validation"),  inputVal = ['input[type=email]', 'input[type=password]',  'input[type=text]', 'input[type=file]',  'textarea'  ].join(', '),  $inputs = $form.find('.required').find(inputVal),  $errorStatus = $form.find('div.error'),  valid = true;  $errorStatus.addClass('hide');  $('.has-error').removeClass('has-error');  $inputs.each(function(i, el) {  var $input = $(el);  if ($input.val() === '') {  $input.parent().addClass('has-error');  $errorStatus.removeClass('hide');  e.preventDefault();  }  });  if (!$form.data('cc-on-file')) {  e.preventDefault();  Stripe.setPublishableKey($form.data('stripe-publishable-key'));  Stripe.createToken({  number: $('.card-num').val(),  cvc: $('.card-cvc').val(),  exp\_month: $('.card-expiry-month').val(),  exp\_year: $('.card-expiry-year').val()  }, stripeHandleResponse);  }  });  function stripeHandleResponse(status, response) {  if (response.error) {  $('.error')  .removeClass('hide')  .find('.alert')  .text(response.error.message);  } else {  var token = response['id'];  $form.find('input[type=text]').empty();  $form.append("<input type='hidden' name='stripeToken' value='" + token + "'/>");  $form.get(0).submit();  }  }  });  </script>  </html> |

Figure 4.1.5: Laravel and Stripe Integration - blade file for frontend (Screenshot 5)

## EXPERIENCE GAINED FROM BIZ301

After the completion of the assigned test task given to Dada Ezekiel (another intern from Babcock University, Software Engineering Department) and I to work on, we were assigned into the ongoing project - <https://www.biz301.com> a business solution for customers and clients to solve invoicing problems, bill payments and many more - to solve tasks, write effective and efficient code, tests done in Postman and submit for review. We worked using Lumen, a “blazingly fast” PHP framework, MySQL database and made our Pull requests to Bitbucket repository. Although this project is private, a sample of pictures have been taken as proof of work:

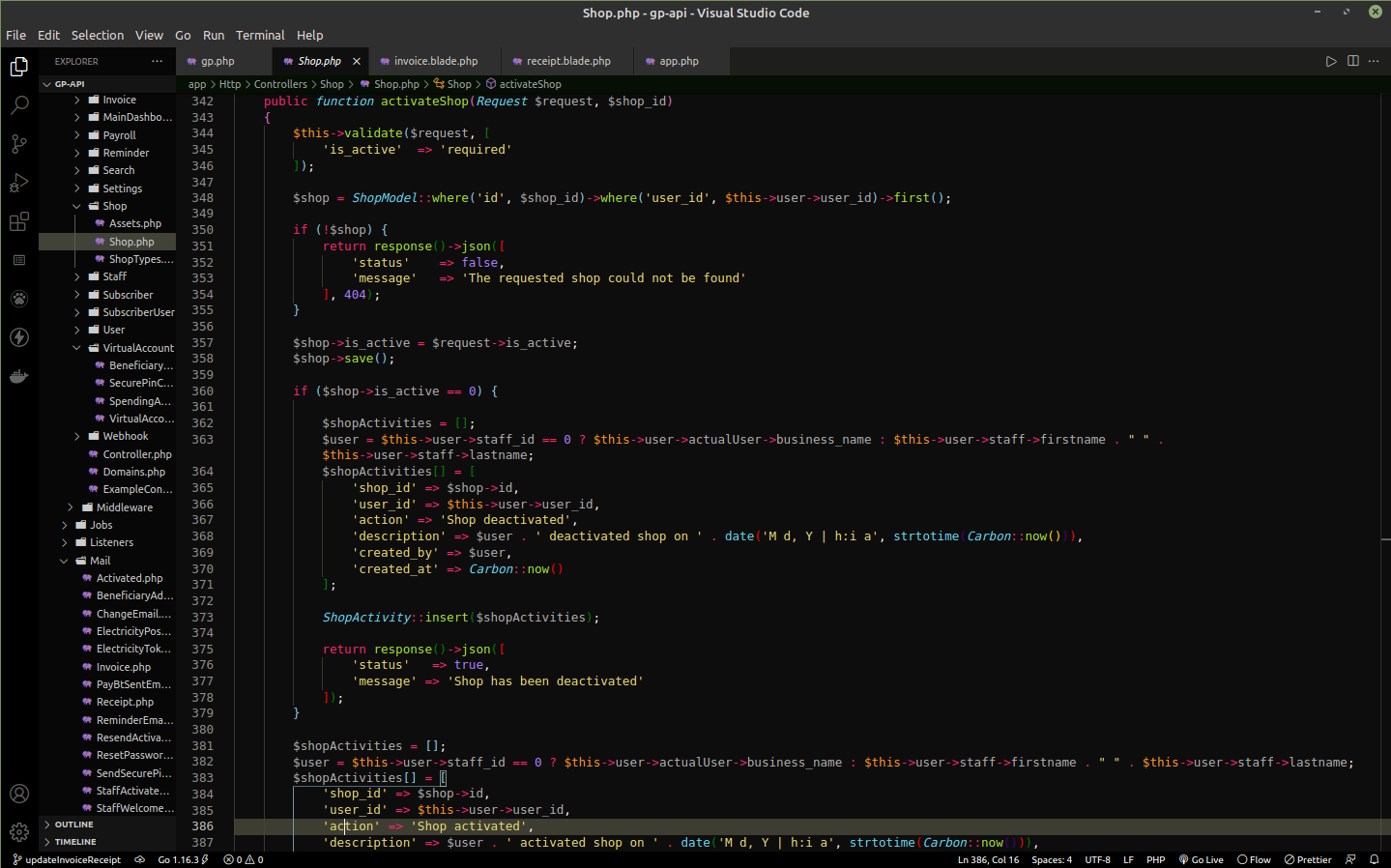


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| <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">  <html xmlns="http://www.w3.org/1999/xhtml">  <head>  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />  <title>Receipt</title>  <meta name="viewport" content="width=device-width, initial-scale=1.0" />  </head>  <body style="  margin: 0;  padding: 0;  background-color: #fafafa;  display: flex;  justify-content: center;  ">  <table border="0" cellpadding="0" cellspacing="0" width="450px">  <tr>  <td style="padding: 10px 0 30px 0">  <!-- MAIN TABLE CONTENT -->  <div style="  border: 1px solid #cccccc;  border-collapse: collapse;  border-radius: 10px;  background-color: #ffffff;  ">  <table align="center" border="0" cellpadding="0" cellspacing="0" width="100%" style="border-collapse: collapse">  <tr>  <td style="padding: 30px">  <table align="center" border="0" cellpadding="0" cellspacing="0" width="100%">  <tr>  <td style="  text-align: center;  width: 100%;  padding-bottom: 20px;  " colspan="3">  <img src="{{ $transaction->config->logo }}" style="width: 60px" />  </td>  </tr>  <tr>  <td style="padding-bottom: 20px">  <table align="center" border="0" cellpadding="0" cellspacing="0" width="100%">  <tr>  <td style="text-align: center; color: #3e3e3e">  Hi {{ $transaction->invoice->customer\_name }},  </td>  </tr>  <tr>  <td style="text-align: center; color: #3e3e3e">  this is the receipt of your payment  </td>  </tr>  </table>  </td>  </tr>  <tr>  <td style="padding: 10px 40px">  <table align="center" border="0" cellpadding="0" cellspacing="0" width="100%" style="  border-collapse: collapse;  border-radius: 5px;  background-color: #f2f2f2;  ">  <tr>  <td style="  padding: 40px 0 5px;  text-align: center;  color: #a4a4a4;  ">  Amount  </td>  </tr>  <tr>  <td style="  padding-bottom: 20px;  text-align: center;  color: #3e3e3e;  font-size: 24px;  font-weight: bold;  ">  &#8358;{{ number\_format($transaction->amount,2) }}  </td>  </tr>  <tr>  <td style="  padding-bottom: 5px;  text-align: center;  color: #a4a4a4;  ">  Receipt Date  </td>  </tr>  <tr>  <td style="  padding-bottom: 40px;  text-align: center;  color: #3e3e3e;  font-weight: bold;  ">  {{ date('M d, Y', strtotime($transaction->paidat)) }}  </td>  </tr>  </table>  </td>  </tr>  <tr>  <td style="padding: 30px 10px">  <table align="center" border="0" cellpadding="0" cellspacing="0" width="100%">  <tr>  <td style="  text-align: center;  font-size: 15px;  color: #707070;  ">  If you have questions or issues with this payment,  contact BIZ301 at  <a href="mailto:info@biz301.com" style="color: #2388ed; text-decoration: none">info@biz301.com.</a>  </td>  </tr>  </table>  </td>  </tr>  <tr>  <td style="padding: 30px 10px">  <table align="center" border="0" cellpadding="0" cellspacing="0" width="100%">  <tr>  <td style="  text-align: center;  font-size: 15px;  color: #707070;  ">  <a href="#!" style="  color: #ffffff;  text-decoration: none;  background-color: #ef3024;  padding: 15px 25px;  border-radius: 5px;  ">  Download Receipt  </a>  </td>  </tr>  </table>  <br><br>  <div style="text-align: center;">  <a href="www.biz301.com/invoice">Powered by  BIZ301</a>  </div>  </td>  </tr>  </table>  </td>  </tr>  </table>  </div>  </td>  </tr>  </table>  </body>  </html> |

Figure 4.2.1: Lumen framework - Receipt blade file shown to users after a successful transaction (BIZ301)

biz301 2

Figure 4.2.2: Route for checking your specific business activities (BIZ301)



|  |
| --- |
| <?php  namespace App\Http\Controllers\Shop;  use App\Helper\GeneralHelper;  use App\Http\Controllers\Controller;  use App\Models\Cities;  use App\Models\ShopImages;  use App\Models\States;  use Illuminate\Http\Request;  use App\Models\Shop as ShopModel;  use App\Models\ShopAsset;  use App\Models\ShopActivity;  use Carbon\Carbon;  use Illuminate\Support\Facades\DB;  class Shop extends Controller  {  protected $user;  public function \_\_construct(Request $request)  {  $this->user = GeneralHelper::getActiveUser($request);  }  public function all(Request $request)  {  $data = [];  $records = ShopModel::with([  'createdBy:id,business\_name',  'shopType',  'country',  'state',  'city'  ])->where('user\_id', $this->user->tenant\_id);  // $records = $records->paginate($request->perpage ?? 10);  $records = $records->get();  return response()->json([  'status' => true,  'data' => [  'data' => $records  ]  ]);  }  public function add(Request $request)  {  $this->validate($request, [  'name' => 'required',  'type' => 'required|numeric',  'structure' => 'required',  'address' => 'required',  'state\_id' => 'required',  'lga\_id' => 'required',  'phone' => 'numeric',  'country\_id' => 'required',  ]);  $shop = new ShopModel;  $shop->name = $request->name;  $shop->user\_id = $this->user->user\_id;  $shop->type = $request->type;  $shop->shop\_structure = $request->structure;  $shop->structure\_description = $request->structure\_description;  $shop->address = $request->address;  $shop->phone = $request->phone;  $shop->country\_id = $request->country\_id;  $shop->state\_id = $request->state\_id;  $shop->lga\_id = $request->lga\_id;  $shop->shop\_code = $request->shop\_code;  $shop->landmark = $request->landmark;  $shop->created\_by = GeneralHelper::getRealUser($this->user);  $shop->shopid = $request->shop\_id;  $shop->terminalid = $request->terminal\_id;  $shop->save();  $shopActivities = [];  $user = $this->user->staff\_id == 0 ? $this->user->actualUser->business\_name : $this->user->staff->firstname . " " . $this->user->staff->lastname;  $shopActivities[] = [  'shop\_id' => $shop->id,  'user\_id' => $this->user->user\_id,  'action' => 'created new shop',  'description' => $user . ' created new shop on ' . date('M d, Y | h:i a', strtotime(Carbon::now())),  'created\_by' => $user,  'created\_at' => Carbon::now()  ];  ShopActivity::insert($shopActivities);  return response()->json([  'status' => true,  'data' => [  'id' => $shop->id  ]  ]);  } |

Figure 4.2.3: Shop Controller for managing, updating and storing business operations (BIZ301)

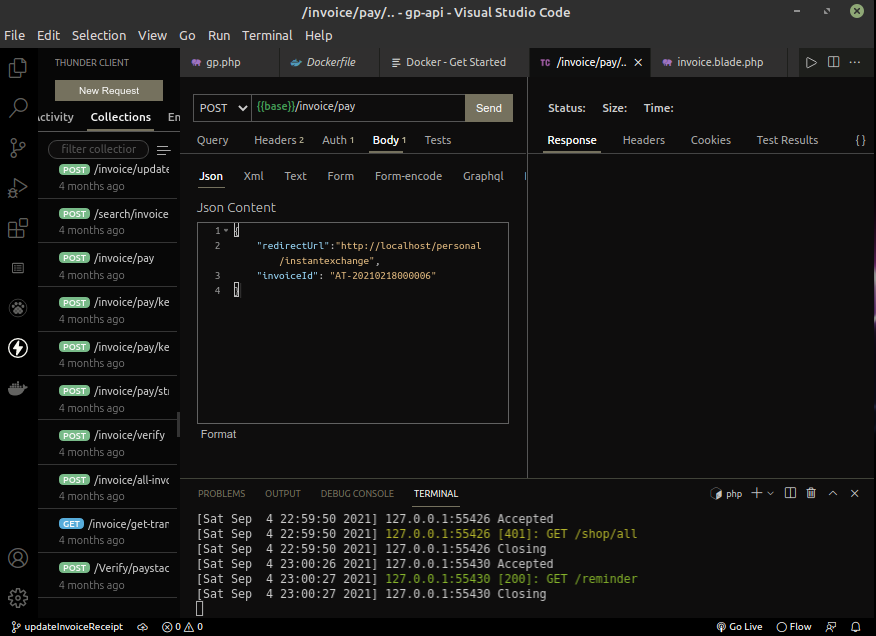


Figure 4.2.4: Testing view - ThunderClient (a lghtweight alternative to Postman) (BIZ301)

* 1. CHALLENGES FACED

No serious challenge was faced such as the traffic congestion in Lagos due to the company setting a Remote-based policy for workers, although, workers were still allowed to come to the office. The company codebase is a large one, which slowed my progress a little for a while until I understood the most part - I still do not understand some sections but help has been provided constantly thanks to Mr. Elijah.

Overall, the experience was amazing and is something I am grateful for and would never regret or forget.

CHAPTER FIVE: SUMMARY AND CONCLUSION

## SUMMARY

This report is on a portion of the significant tasks I did during my 6 months SIWES program with the company.

Students Industrial Work Experience Scheme (SIWES) is a curricular provision of the Universities in Nigeria, where students of most technological-based courses are given the privilege to work with a company, industry, firm, or Ministry, that is related to their course of study, in order to get acquainted with the Methodologies, Instrumentation, Procedures, and mode of Processing acquired data and also to get them prepared for the life after School.

It has always been an aspiration of mine to develop myself more practically in the programming and web development area. I saw this dream come true in this six-month industrial training as a proper path was shown to me. I was trained on the basics of PHP, Laravel, Lumen, MySQL database, Git and Bitbucket tool for version control and storage of code. In this sense, how to perform CRUD operations using PHP and its frameworks, how to push code to repositories, and I also contributed to the development of the BIZ301 invoicing application which led to an official retainment at the company.

Outside programming I acquired new attributes which includes the ability to relate with people in a much friendly and respectful manner, how to be disciplined, punctual, and more responsible and also how to manage resources more effectively and efficiently.

## CONCLUSION

Overall, it may be said that this report has managed all I was shown both practical and theoretical during the SIWES attachment. The SIWES program is of incredible advantage which each and every understudy that participated in will forever reminisce on.

## 5.2 RECOMMENDATIONS

I will suggest that the ITF should keep the SIWES program going so that students in the higher institution can gain more practical experience which will prepare them ahead of the labour market demands. I recommend Sidmach Technologies Nig. Limited, for any computer science and other related course student interested in programming, web development, data science, networking etc.

# REFERENCES

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ITF. (2015, october 12). *odich.com/itfnig/siwes*. Retrieved october 18, 2015, from odichi: odich.com/itfnig/siwes