



An Undergraduate Internship Report
on
Akdokan.com
At
TimeNowBd

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Letter Of Submission

27th January 2021

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Subject: Letter of submission for Internship Report, Autumn 2020

With due honor and respect, I, Munem Shahariar, from Autumn 2020, Section 11, would like to submit my Internship report. This report is written to kindly inform you that I have completed my internship program and its report. My internship was conducted from 26th November 2020 to 26th February 2021. I completed my internship at TimeNowBd. This report is based on my experience and the work I did at TimeNowBd during my internship. The primary goal for my internship was to gain experience in all the different technology related fields of the company, including research and development, software development, and to get acquainted with software development processes and practices. With emphasis and priority on understanding how a software is being built and also what is being built. Over the period of my internship at TimeNowBd, I found out that I learned and applied a lot of new skills and technologies. The company comprises a small team of software craftsmen who learn, collaborate, and innovate together. I hope the following report can achieve your approval and is up to the mark.

Acknowledgements

I would firstly like to thank The Almighty Allah for giving me the endurance and the ability to work hard, for giving me the ability to write this report to and for giving me the chance to be able to do my internship at TimeNowBd. Also, my parents for their unconditional love and support that have sustained, nurtured, and got me ready for this challenge.

I would like to thank my honorable faculty and supervisor Ms. Ajmiri Sabrina Khan, Lecturer, Department of Computer Science & Engineering, Independent University, Bangladesh, for her invaluable guidance, patience, time, constructive criticism and thoughtful advice regarding various aspects of my internship and preparation of this report. I would like to thank my senior coworkers Mahmud Hassan Sunny, Sourav Das, Linda Akter Lubna, Rafi Al Noor and all the others who made me feel at home from day one in the company and helped me navigate throughout the projects. And I would like to thank Mr.Sourav Das for the sincere guidance in the project. I am thankful for the continuous guidance and support along with the vast pool of knowledge which was key for the completion of the project.

Lastly, I would like to acknowledge my external supervisor and my mentor Mahmud Hassan Sunny for appointing me as an Intern for TimeNowBd and include me to be a part of this company. Without his extreme energetic support and guidance, I could not finish the project successfully.

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Executive Summary

In this report, I have written about my experience as an intern at TimeNowBd. TimeNowBd is a software consultancy company based in Dhaka, Bangladesh. It was found in 2000. With the aim to bring a change. As an intern, I worked on a company project in a developer team of the company. During first phase of the internship, most the material was very new to me as I never had any formal experience in the software industry. TimeNowBd me the opportunity where I was able to develop myself and introduced me with the software development process which I can use in the future to improve myself.

During my internship I got introduced to the technologies that are used in the Software Development phase. I got to learn about developing User Interfaces with a popular PHP framework-Codeigniter. I also learned how to develop mobile Application using a JavaScript framework-Flutter. In this timeline I progressively got familiarized with some of the Software

After completing all basic learning sessions, I was assigned to work on a company project where my task was to work in a team to develop REST Api for a website named Akdokan.

Chapter1: Introduction

Background

As the internet is getting more diverse and enriched with contents with each passing day, data handling and manipulation is becoming more and more complex. As a result, relevant data fetching and integrating has been a key to an accurate flow of information between clients and business owners.

Objectives:

- Develop REST Api for Data manipulation on the backend
- Develop Get method for retrieving data from a Database as a JSON format
- Develop Post method for inserting data into a Database table without developing a front end User Interface
- Develop Put method for updating data into a Database table without developing a front end User Interface
- Develop Delete method for deleting data from a Database table without developing a front end User Interface

Scope of the Project:

Features and advantages available to Developers and essential users after completion of the project;

- Establish a remote connection between the database and the user forms so that the database can be also used and accessed by other approved entities.
- Faster and more secure than to connect database directly to a ui
- Easily portable to Application platforms on both Android and iOS
- Secured Database due to no connection to interfaces

Company Profile

Background of the company:

TimeNowBd is a software consultancy based in Dhaka, Bangladesh. The company was founded in 2000 in Dhaka and 2007 in Silicon Valley, CA. The founders have extensive experience in software and system design. To be the leading Mobile Apps Provider and best of choice partner in ICT Services. sBIT focus on total customer satisfaction by providing solutions to critical design issues to expedite time to market with successful products. The measure of our professionalism is integrity, commitment and partnership to our clients. On-time, accurate, high quality, and comprehensive delivery of all the artifacts. Their Products/Projects include:-

- sayedaskitchen
- teachyme
- dhaka10
- Learning management system
- Bio-metric integration
- School management system
- Enterprise resource planning

Mission Vision Values

To make IT comprehensive, objective oriented, efficient, easily accessible and inexpensive is Timenow's objective and that is the way to make IT pervasive, to achieve the company's mission.

Company Departments

TimeNowBd maintains a flat organizational structure. Teams and responsibilities are generally formed and assigned around the nature and requirements of specific projects.

Products and Services

The nature of services and products offered by TimeNowBd are:

Web development: Websites are developed on xampp MySql database with php language utilizing laravel or codeigniter frameworks

Application Development: Cross platform applications developed with flutter that runs on both iOS and Play Store

Game Development : Engaging and interactive games are developed using c# and using Unity framework for handheld devices.

Operation Details

The nature of work conducted at TimeNowBd is research and development focused, proven and tested technologies as required for a given project. The TimeNowBd team works on a range of projects which include developing Enterprise Resource Planning, Game development, application developments for mobiles, complex web and mobile applications, and mobile-based games.

Partners of the company

TimeNowInc , TimeNowLtd

Address and Contact Information

Address: house: 31, Kalabagan 1st lane, Dhanmondi
Contact: timenowbd.com , 01856991568

Literature review

List of Courses that helped in the development process:

Independent University, Bangladesh offers a diverse range of courses aimed at the development process for REST Api generation of akdokan.com. The courses are as follows without a particular order:

CSE 203, Data structure:

This is the most basic course that helped with the ideas of several data structures and their applications. This particularly helped in working through the MVC pattern of CodeIgniter framework.

CSE 213, Object oriented programming:

As in the data handling and manipulation aspects of a project, data is passed through an object, this course helped greatly on understanding object calling and creations and made coding less repetitive and more reusable. This course helped develop coding in a very modular format.

CSE 303, Database Management:

This course was an introduction to database management and how to design data tables on MySQL Database. How to call data through sql queries and relations between tables.

CSE 309, WebApplication And Internet:

This is the course where the development of web applications was taught. It covered very important technologies that are highly in demand in the industry, such as HTML, CSS, JavaScript, jQuery, PHP, Laravel, MySQL, Apache and deployment with localhosts. The tools and technologies learned through this course immensely helped in the development of REST Api generation of akdokan

Related Works:

- Narayanganj City Corporation ERP System



Fig: 1 Narayanganj City Corporation Logo

Narayanganj City Corporation ERP system is a fully integrated management system developed for the Narayanganj City corporation which has a wide and diverse database with big datasets. And as the data as per requirement may be used in other platforms, Api for the system is also being developed.

Methodology

Web Application

Web applications, sometimes referred to as web apps, are an interactive computer program built with web technologies often with HTML, CSS, and JS, with complete control of manipulation (CRUD) of data that can be stored in a database. CRUD is an acronym it stands for Create, Read, Update, and Delete. Web apps are generally accessed using a web browser such as- Google Chrome, Mozilla Firefox, etc. They usually involve some sort of sign up/log in mechanism. A web application (web app) does not need to be downloaded and is instead accessed through a network. Web applications are often confused with Websites; however, they are fundamentally quite different. The difference lies in the way we interact with each of them: - websites are defined by their output - we read the news, marketing information, FAQs on websites and web applications are defined by their input - we create, read, update, and delete data within a web application.

Web Application Development

Web application development will typically have a short development life-cycle lead by a small development team. Front-end development for web applications is accomplished through client-side programming. Client refers to a computer application such as a web browser. Client-side programming will typically utilize HTML, CSS, and JavaScript. HTML programming will instruct a browser how to display the on-screen content of web pages, while CSS keeps displayed information in the correct format. JavaScript will run JavaScript code on a web page, making some of the content interactive. Server-side programming powers the client-side programming and is used to create the scripts that web applications use. Scripts can be written in multiple scripting languages such as Ruby, Java and Python. Server-side scripting will create a custom interface for the end-user and will hide the source code that makes up the interface. A database such as MySQL can be used to store data in web application development.

Agile Method

AGILE methodology is a practice that promotes continuous iteration of development and testing throughout the software development lifecycle of the project. In the Agile model, both development and testing activities are concurrent

The Agile software development methodology is one of the simplest and effective processes to turn a vision for a business need into software solutions. Agile is a term used to describe software development

approaches that employ continual planning, learning, improvement, team collaboration, evolutionary development, and early delivery. It encourages flexible responses to change.

Agile software development emphasizes on four core values.

1. Individual and team interactions over processes and tools
2. Working software over comprehensive documentation
3. Customer collaboration over contract negotiation
4. Responding to change over following a plan

Development Tools Used

In the development of REST Api for akdokan.com several modern application development tools were used, the functionality has been developed using PHP server side scripting language, on CodeIgniter framework, and the data has been saved on MySQL database management system.

1. CodeIgniter



Fig2.1: CodeIgniter Logo

CodeIgniter is a powerful PHP framework with a very small footprint, built for developers who need a simple and elegant toolkit to create full-featured web applications.

2. cPanel

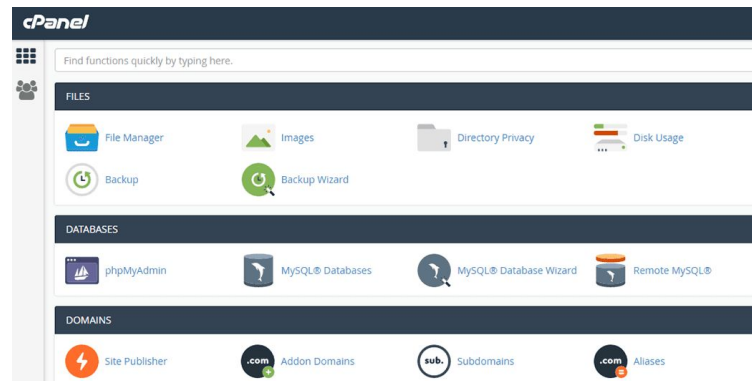


Fig2.2: cPanel HomePage

It is a hosting service that houses all the projects that are handled by TimeNowBd.

3. MySQL Database



Fig2.3: MySQL Logo

MySQL is an open-source relational database management system. Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language.

4. Postman



Fig2.4: POSTMAN Logo

Postman is a Google Chrome app for interacting with HTTP APIs. It presents you with a friendly GUI for constructing requests and reading responses. The people behind Postman also offer an add-on package called Jetpacks, which includes some automation tools and, most crucially, a Javascript testing library

Other Non-Development Tools Used:

1. Team-collaboration.tnlms:

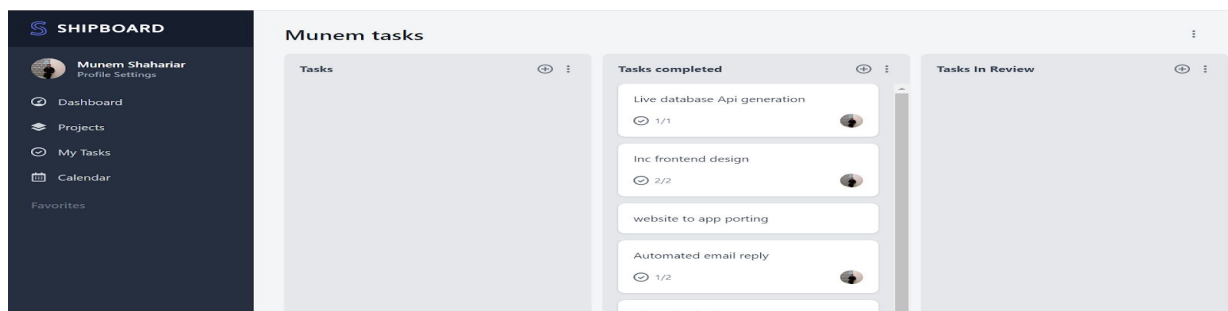


Fig3:Team-collaboration

Team-collaboration.tnlms is an inhouse online workspace which helped in communicating about our works and reviewing them with senior developers. It also helped with keeping track of workflow and also acted as a repository.

Body of the Project

Description of the Work:

Akdokan.com is an online platform where buyers and sellers can meet in a common platform and conduct their transactions. It is an e-commerce platform focusing mainly on home groceries and needs. My work is to create functions and to generate REST API for the platform for future use and to make the database remote and to increase security of the database for the web application. API would be generated in accordance with the tables in the database of the web application.

Product Features:

Architecture of the System:

Software Architecture is what defines and structures a solution that meets technical and operational requirements. Software architecture optimises attributes involving a series of decision, such as security, performance and manageability. It describes the organization and interaction of software component. There are many types of architecture that are used among them. The client server architecture was used for the generation of REST Api of akdoan.com. CodeIgniter framework used for the REST Api generation uses a MVC(Model View Controller) pattern.

Client Server Architecture:

Client-server model is a distributed application structure that partitions tasks or workloads between the providers of a resource or service, called servers, and service requesters, called clients. Often clients and servers communicate over a computer network on separate hardware, but both client and server may reside in the same system. A server host runs one or more server programs, which share their resources with clients. A client does not share any of its resources, but it requests content or service from a server. Clients, therefore, initiate communication sessions with servers, which await incoming requests. Examples of computer applications that use the client-server model are email, network printing, and the World Wide Web.

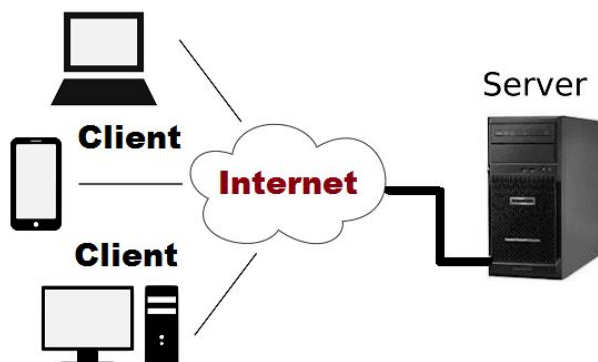


Fig4: Client Server Architecture

MVC(Model View Controller) pattern:

MVC is a design pattern for structuring user interface code it is a pattern followed in the application code of the project.MVC architecture is triangular: the view sends updates to the controller, the controller updates the model, and the view gets updated directly from the model.

Result and Analysis

As mentioned , the functionalities for Api generation have been developed by codeigniter framework using PHP language, the Api generated offers easy and organized access to the information in the database without availing admin privileges for the collection of data.

Data Delete from API

The screenshot displays a REST client interface with the following details:

- Method:** DELETE
- URL:** http://localhost/codeigniter-crud/api/banners
- Body:** A JSON object with the key "id" and value 14.

```
1 {
2   "id" : 14
3 }
4
5
```
- Response:** Status 200 OK, 96 ms, 546 B. The response body is a JSON object with "status": 1 and "message": "data has been deleted".

```
1 {
2   "status": 1,
3   "message": "data has been deleted"
4 }
```

The interface also includes tabs for Params, Authorization, Headers (11), Body, Pre-request Script, Tests, and Settings. The Body tab is currently selected. The response is displayed in the 'Pretty' format.

<input type="checkbox"/>	Edit	Copy	Delete	12	uploads/banners/KmG3VcLjzhZfmGPwW9B7GqnnuProFLFIW4...	https://www.akdokan.com/search?category=Food-pOjG2	2	0	202
<input type="checkbox"/>	Edit	Copy	Delete	14	uploads/banners/KmG3VcLjzhZfmGPwW9B7GqnnuProFLFIW4...	https://www.akdokan.com/search?category=Food-pOjG2	0	1	202

☐ Check all With selected: Edit Copy Delete Export

<input type="checkbox"/>	Edit	Copy	Delete	12	uploads/banners/KmG3VcLjzhZfmGPwW9B7GqnnuProFLFIW4...	https://www.akdokan.com/search?category=Food-pOjG2	2	0	202
--------------------------	------	------	--------	----	---	--	---	---	-----

☐ Check all With selected: Edit Copy Delete Export

☐ Show all | Number of rows: Filter rows: Sort by key:

Fig5.1: Delete function through Postman

Retrieve Data from Database

GET

http://localhost/codeigniter-crud/api/banners

Send

Params

Authorization

Headers (11)

Body

Pre-request Script

Tests

Settings

Cookies

Query Params

KEY	VALUE	DESCRIPTION	Bulk Edit
-----	-------	-------------	-----------

Body

Cookies (1)

Headers (11)

Test Results

200 OK 736 ms 1.02 KB

Save Response

Pretty

Raw

Preview

Visualize

JSON

```

2  ... "status": 1,
3  ... "message": "data found",
4  ... "data": [
5  ...   {
6  ...     "id": "11",
7  ...     "photo": "uploads/banners/8CzpoQJhjxLfTyCNk64qmKIWLERYPD4c8WX5uAg.png",
8  ...     "url": "https://www.akdokan.com/search?category=Food-pOjG2",
9  ...     "position": "1",
10 ...     "published": "0",
11 ...     "created_at": "2020-06-13 21:52:13",
12 ...     "updated_at": "2020-06-13 21:55:31"
13 ...   }

```

Auto-select agent

Runner

Trash

Fig5.2: Get Function through Postman

Insert Data into Database

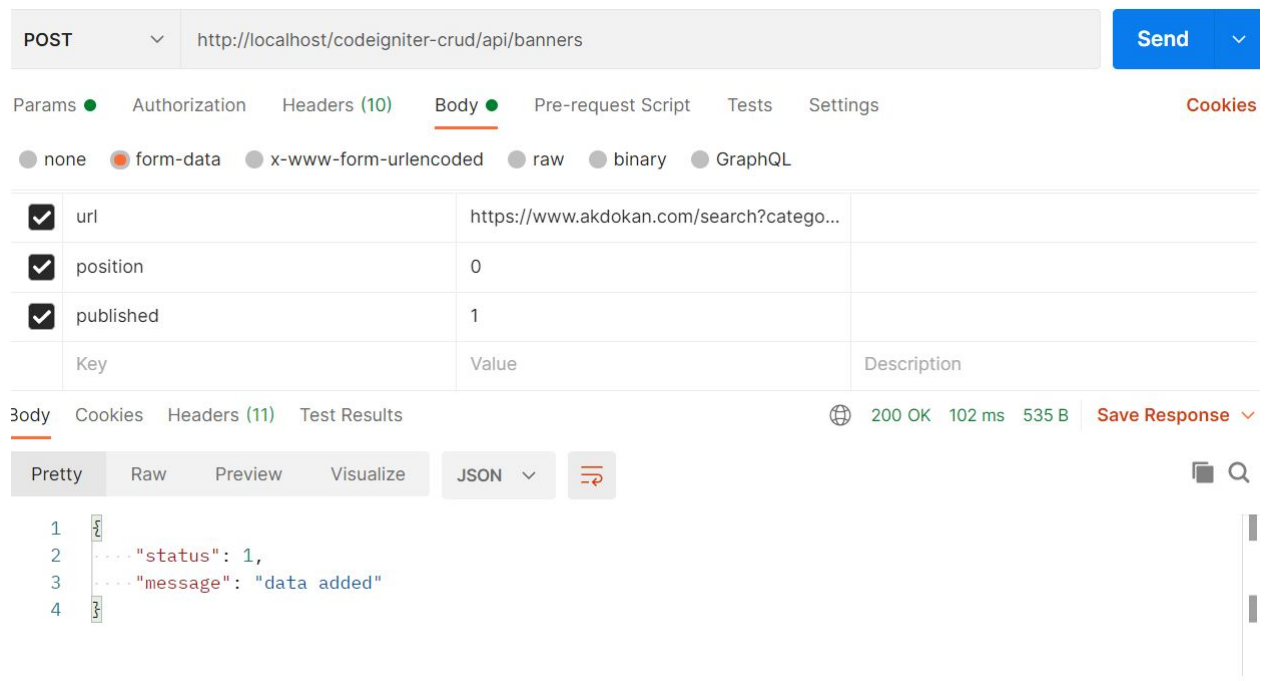


Fig5.3: Post function through Postman

Engineering Problem Analysis

Sustainability of the Product:

Community Sustainability:

After generating Api in JSON format, data handling and manipulation has been seamless and more accurate and safer, which inturn helps the developer community in future works. Because of REST Api, the scale of the datasets are not not a constraint on the handling of the data and can be error free.

Financial Sustainability:

As data does not need to be populated again and again with precision, this rees u time for the developer to focus on other problems that needs attention. It makes the workflow more efficient

Organizational Sustainability:

As REST Api is easier to handle and integrate, future development of akdokan.com into newer platforms can easily be achieved as the content does not need to be manually places again.

Social and Environmental Effects:

Social Effects;

Environmental Effects:

Ethics and Ethical Issues:

Collecting only Relevant Data:

The website akdokan.com does not collect personal data other than that which is strictly relevant to the site, and which users will put on their own consent.

Not Sharing or Selling any User Data:

Even though the data collected may not be of any privacy concern for most users, the website does not let any service, any application or any third party have access to the data collected.

Data Storage Security:

Only the lead project manager and owner of akdokan.com has access to the credentials of the server and the database. As the data is hosted in a cloud platform, and the login credentials are kept private, it can be deemed safe.

No Discrimination or Favoritism:

Akdokan.com does not discriminate of any kind based on race, sexuality, gender, religious beliefs, color, language, political or other opinion, national or social origin, property, birth, or other status.

Future Work and Conclusion

Challenges Faced:

During the internship period, there were many challenges that I had to overcome. Major Ones are:

Covid-19:

As the pandemic is still at large, it has caused a lot of travel restrictions and weariness to avail public transportations. Thus it had been very restrictive to travel to and from work everyday. Also the economic shock due to the pandemic has caused the work environment to be off dire situations

Adapting to the team:

As this was my first experience at an IT related work and in an IT team, it took a learning curve to work in a collaboration with team members.

Adapting to the new technologies and frameworks used:

The framework I worked on has been new to me, and I had to learn all about it through educative channels on youtube and through reading documentations of the framework.

Identifying and Fixing Bugs:

Resolving bugs was an issue as some of the bugs were very hard to find, even after the identification of bugs it would take a lot of time to resolve it.

Future Work

Future work and Demand for Api Development is ever growing and api Generated for Akdokan have been planned for integrating it to Applications Seamlessly.

Conclusion

It was a wonderful experience working with TimeNowBd family as an intern. During the internship period I have learnt and applied a great deal. I have learned a lot about developing different kinds of applications also about various development styles. I was pushed to adapt to changes rapidly and come up with logical solutions. During my project, I cooperated with my mentors and seniors to solve the challenges faced. Despite their workload, my supervisors were always there to answer any queries and help me settle nicely. This internship opportunity has paved the way to investigate the development environment and marketplace. I would like to appreciate once again everyone who has made my life as an intern such a great experience.

Appendix- A (Backend Code Snippets)

```
public function index_delete(){

    $data = json_decode(file_get_contents("php://input"));
    $id = $this->security->xss_clean($data->id);

    if($this->banner_model->delete_banner($id)){
        $this->response(array(
            "status"=>1,
            "message"=>"data has been deleted"
        ), REST_Controller::HTTP_OK);
    } else{
        $this->response(array(
            "status"=>0,
            "message"=>"failed to delete student"
        ), REST_Controller::HTTP_NOT_FOUND);
    }
}
```

```
public function index_get(){

    $trial=$this->'_model->get'();

    if(count($trial)>0){

        $this->response(array(
            "status"=>1,
            "message"=> "data found",
            "data"=>$trial
        ), REST_Controller::HTTP_OK );

    } else{
        $this->response(array(
            "status"=>1,
            "message"=> "data found",
            "data"=>$trial
        ), REST_Controller::HTTP_NOT_FOUND );

    }

}
```



```

public function index_post(){
    $photo = $this->security->xss_clean($this->input->post("photo"));
    $url = $this->security->xss_clean($this->input->post("url"));
    $position = $this->security->xss_clean($this->input->post("position"));
    $published = $this->security->xss_clean($this->input->post("published"));

    $this->form_validation->set_rules("photo", "photo", "required");
    $this->form_validation->set_rules("url", "url", "required");
    $this->form_validation->set_rules("position", "position", "required");
    $this->form_validation->set_rules("published", "published", "required");

    if(empty($photo) && empty($url) && empty($position) && empty($published)){
        $this->response(array(
            "status"=>0,
            "message"=>"all fields are needed"
        ), REST_Controller::HTTP_NOT_FOUND);
    } else{
        $trial = array(
            "photo" => $photo,
            "url" => $url,
            "position" => $position,
            "published" => $published
        );
        if($this->banner_model->insert_banners($trial)){
            $this->response(array(
                "status" =>1,
                "message"=> "data added"
            ), REST_Controller::HTTP_OK);
        }
    }
}

```

```

public function index_put(){
    $data = json_decode(file_get_contents("php://input"));

    if(isset($data->id) && isset($data->name) && isset($data->description) && isset($data->image) && isset($data->status)){
        $id=$data->id;
        $info = array(
            "id" => $data->id,
            "name" => $data->name,
            "description" => $data->description,
            "image" => $data->image,
            "status" => $data->status
        );
        if($this->banner_model->update_info($id,$info)){
            $this->response(array(
                "Status"=>1,
                "message"=>"data added"
            ),REST_Controller::HTTP_OK);
        }else{
            $this->response(array(
                "status"=>0,
                "message"=> "failed to update data"
            ),REST_Controller::HTTP_INTERNAL_SERVER_ERROR);
        }
    }else{
        $this->response(array(
            "status"=>0,
            "message"=>"field is needed"
        ), REST_Controller::HTTP_NOT_FOUND);
    }
}

```

Additional works under development for TimeNowBd:

Timenowinc.com

Tnlms.com

Timenowbd.com

Lms.tnlms.com