



# GreenWhite Developers

A Subsidiary of GreenWhiteDev Solutions

- IT Consultancy
- Software Development
- Networking
- IT Hardware Installation/Maintenance

## An Upgrade and Development Project Plan for Touching Lives Skills

*We proffer Innovation and Solution*

*Some see the glass as empty, others hope it'll be full again. But at **GreenWhite** we'll give you back a full glass. We're the right folks to trust with your project.*

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## About GreenWhite

GreenWhite Developers is a subsidiary of GreenWhiteDev Solutions. We have a mission to provide actual, innovative, and lasting IT solutions for our clients, that'll ensure efficient System Analysis and Design in projects. Our vision is to provide excellent IT solutions utilized by a large community of users around the globe.

We are a team of experts developing solutions through information technology to problems that have been identified as a challenge for individuals, companies, organizations and government. We specialize in design and development of Software and Hardware driven systems for individuals, companies, organizations and government.

We are a the folks you call when you have a problem that needs an IT Solution. Our team of proficient and innovative experts and developers provide actual solutions for our clients by the means of Information Technology.

## About Touching Lives Skills

Touching Lives skills is a Project of Touching Lives international in Collaboration with the Government of Developing Geographical Areas. Its aim and objectives is to reach out to the poor population with skills and empowerment for development, that way fulfilling the visions of the United nations development Program UNDP.

We major on skills basically gear towards production, manufacturing and trade of locally made goods in regions of our reach. such Skills range from production of Accessories and minor goods in fashion and designs, to paint and paper production, to few areas of Agriculture including Pastoral and crop farming, to electrical like solar panel production, to food production in pastries, make-up and body treat with cosmetology, programming and trades/marketing.

We offer the following services:

- Skills and business training: We engage our trainees on business and entrepreneurial training program thereby grooming them to become successful in business
- Empowerment: To encourage the expansion, growth and economic base of our trainees with reference to those who already have existing businesses
- Free health services: Touching lives signature is clearly demonstrated in the health sector in every community where our presence is felt.
- Business consultancy: Touching lives team of business consultants assist trainees achieve efficiency and effectiveness in their businesses.
- Micro finance services: Our Micro-Credit Bank offers interest free loans to various category of business owners to assist in growing and expanding their businesses
- Free legal services: TLS legal service department is equipped with well trained and highly experienced legal experts. We offer free legal services.

## Projects Executed with GreenWhite

GreenWhite Developers have successfully delivered three (3) projects for our client Touching Lives Skills Nigeria so far. We currently maintain these systems, while adding minor changes to them. Below is a list of the various projects executed by GreenWhite for Touching Lives Skills Nigeria.

### **TL Savings App (<https://www.tlsavings.xyz>)**

TL Savings is a wallet management system that provides a system for users which runs on its own crypto currency that can be converted at will to paper, coin or any valid currency. These users can receive payments via API, or transfers from admin or other users, and can also make payments to other users on this same platform. More functionalities will be added in a major upgrade of this system.

### **Touching Lives Skills App (<https://www.touchinglivesskills.xyz>)**

Touching Lives Skills App (TLSkills) is the website for Touching Lives Skills Nigeria, and also an application for student registration and management. More functionalities will be added in a major upgrade of this system.

### **Touching Lives Skills – Careers (<https://careers.touchinglivesskills.xyz>)**

Touching Lives Skills – Careers (TLCareers) is a Human Resource Management System designed to effectively coordinate the recruitment of staffs, agents, facilitators, and other specialties for the Touching Lives Skills Project and its sister projects.

## Upgrade and Development Plan for Touching Lives Skills IT Projects

The team of GreenWhite Developers have come up with a reviewed upgrade/development plan for Touching Lives Skills IT Projects. This can serve as a guide to what projects can be achieved within an estimated time frame. The projects will comprise of major upgrades and development of new systems, as listed in the guide below:

### Upgrade and Development Schedule for IT Projects

S/N	Project	Frame	Priority
1	Upgrade of Touching Lives Skills App	3 – 4 Weeks	*****
2	Upgrade of TLSavings App	2 – 3 Weeks	*****
3	Design and Development of TLClass	5 – 6 Weeks	***
4	Design and Development of TLSavings API for Bank Integration	3 – 4 Weeks	*****
5	Design and Development of TLSavings Mobile APP for both Android and IOS	6 – 8 Weeks	*****
6	Design and Development of TLPay (Payment Gateway)	4 – 5 Weeks	***
7	Design and Development of an API for USSD Integration for TLSavings Transactions	2– 3 Weeks	***
8	Design and Development of TLCard (A New Concept Payment Card)	6 – 8 Weeks	***
9	Upgrade of TLCareers (HRM) App	2 – 3 Weeks	*****
<b>Total</b>		<b>33 – 46 Weeks</b>	<b>*****</b>

S/N	Priority	Explanation
5	*****	Critically Important
4	*****	Necessary but not critical
3	***	Should be Considered
2	**	Not important
1	*	Insignificant
0	-	Should not be considered

### Upgrade of Touching Lives Skills App

This will involve adding cutting edge technologies and features to this system. Some of these features may include, but not limited to:

UI/UX modifications and upgrade, to improve user interactivity, and system look and feel.

Admin privileges will be added for State Coordinators, Centre Coordinators, Facilitators, and whom it may concern. This will enable efficient control, tracking and documentation to be provided for the various administrators at different levels.

User access for registered students, and enabled linking to TLSavings App for registered users. This linking will help faster account creation for registered students.

Standard statistical analysis and summary will be provided on the platform for administrators based on their privileges, to act as a guide to the activities and transactions going on the system. This will come in form of charts, graphs, and other useful statistical tools.

A faster search and processing algorithm will be implemented, to increase speed in processing and task execution.

Many other features and requirements will be highlighted to implement after a thorough system analysis of the existing system.

## **Upgrade of TLSavings App**

TLSavings APP has grown to a community of 2000+ users, and will grow exponentially in the next few months. Hence, it is expedient that this system is upgraded with all creativity, to enable the system standout, remain unique and excellent.

Indeed, it should be portrayed as an application that users can trust, as integrations should soon be made to other big applications in the market of its seeming competitors. Some of these features may include, but not limited to:

UI/UX modifications and upgrade, to improve user interactivity, and system look and feel.

Various APIs will be created, and existing ones reviewed to increase efficiency, reliability, and productivity of the system.

Standard statistical analysis and summary will be provided on the platform for administrators based on their privileges, to act as a guide to the activities and transactions going on the system. This will come in form of charts, graphs, and other useful statistical tools.

Customer support functionality, to enable users chat with customer care concerning issues pertaining TLSavings. This will help improve customer serviceability.

Provision of a technical support functionality, to enable all users report bugs, or issues encountered for swift response to such complaints. This will also improve customer serviceability.

Notifications functionality will be added to enable users receive time crucial informations and valuable notifications.

Users will have better control of their account on TLSavings app, as more preferences and settings will be added to help users achieve this.

The Admin will also have greater control and access to TLSavings app. Based on privilege and access rights, admin could even have access to track per user transactions and activity.

Many other features and requirements will be highlighted to implement after a thorough system analysis of the existing system.

## **Design and Development of TLClass**

We are in line with the development of TLClass, a Learning Management System for students of the Touching Lives Skills Programme. This Learning management systems help the instructor deliver material to the students, administer tests and other assignments, track student progress, and manage record-keeping. LMSs are focused on online learning delivery but support a range of uses, acting as a platform for fully online courses.

## **Design and Development of TLSavings API for Bank Integration**

We are also in line with the development of an API to aid integration to other banking platforms. This will enable payments to be made into the TLSavings platform using a swift, efficient and reliable approach to achieve this.

## **Design and Development of TLSavings Mobile APP for both Android and IOS**

Considering the fact that the TLSavings APP has grown to a community of 2000+ users, and will grow exponentially in the next few months. It is expedient that we develop the mobile version of the TLSavings app, as modern IT systems are required to be mobile compliant to satisfy the larger percent of your user base.

Developing a mobile app for TLSavings will help to:

- 1) Provide more value to your users.
- 2) Build a stronger brand for your business.
- 3) Connect better with customers.
- 4) Boost profits.
- 5) Broaden your market coverage.
- 6) Deliver speed

## **Design and Development of TLPay (Payment Gateway)**

With the vision of TLSavings to be used by stores around Nigeria, there is a need to create a payment gateway to process payments made to these stores via this platform. Developing this app will enable online stores and startups to receive payments via the TLSavings platform. If the complementary App TLCard is developed, this system can also enable payments between individuals and even physical stores.



## **Design and Development of an API for USSD Integration for TLSavings Transactions**

With a mixed community of users, with a set being owners of smart phones, and another set as non-smart phone owners. It tends to solve lots of hitches involved in the operation of systems that rely solely on smart phone flexibility, and internet connectivity.

- Compatible with feature phones and smart phones
- A fast communication between the application and the user
- Near instant delivery
- Free to end users except indicated
- More interactive as compared to SMS
- Suitable for sensitive info like one-time password
- Works on all existing GSM mobile phones
- Mobile booking / redemption service / Subscription Services for Mobile Content Providers
- No internet connection is required
- Improve user experience by reducing the latency delays
- More characters are allowed in a USSD message

## **Design and Development of TLCard (A New Concept Payment Card)**

TLCard is a project that provides a unique card that won't rely on POS machines. It will serve as an integration to TLPay payment gateway.

## Cost Analysis

GreenWhite Developers use the Three-Point Estimating approach for projects of this scale. This technique is used to reduce the biases and uncertainties in estimating assumptions. Instead of finding one estimate, three estimates are determined and then their average is taken to reduce the uncertainties, risks, and biases.

PERT (Program Evaluation and Review Technique) is the most commonly used method in three-point estimation technique.

Three PERT estimates are as follows:

- **Most Likely Cost ( $C_m$ ):** Considers a normal case and everything goes as usual.
- **Pessimistic Cost ( $C_p$ ):** Considers the worst case and assumes that almost everything goes wrong.
- **Optimistic Cost ( $C_o$ ):** Considers the best case and assumes that everything goes better than planned.

PERT estimate formula is:

$$C_e = (C_o + 4C_m + C_p) / 6$$

Where,  $C_e$  = Expected Cost

### Estimated Cost Price per developer

S/N	Item	Type	$C_m$	$C_p$	$C_o$	$C_e$ / Month	$C_e$ / Daily
1	Fueling	Variable	24000	36000	18000	25000	833.33
2	Data (MTN)	Variable	8000	10000	7500	8250	275
3	Git (GitHub – Private Repo per user charge)	Fixed	4000	4000	4000	4000	133.33
4	IDE (PHPStorm IDE per user charge)	Fixed	8000	8000	8000	8000	266.67
5	Miscellaneous	Variable	15000	21000	13500	15750	525
<b>Total</b>			<b>59000</b>	<b>79000</b>	<b>51000</b>	<b>61000</b>	<b>2033.33</b>

Note: The table above provides a list of the minimal operational costs required for involving a developer in a software development, **excluding the cost for wages and salaries**.

### Project Development Team

Our development teams consist of those people will develop, design, and deploy the application, as well as fix bugs and analyze requirements. We usually assign from three to nine members to each development team.

Who are our team members?

- Requirements analysts
- UX and UI designers
- Web developers
- Database developers
- Quality Assurance specialists

## Requirements Analyst

The requirements analyst will be the first web team member you'll need to communicate with. An analyst takes your product ideas and turns them into clear technical specifications. In other words, the requirements analyst's job is to understand what you want your project to look like and then to communicate this information to the rest of the web development team.

A requirements analyst aims to fulfill these three tasks:

- Elicit requirements
- Analyze requirements
- Document requirements

No matter what kind of project you're developing, be it a CRM tool for your hardware installation company or a piece of marketing management software, the first question a requirements analyst asks is always "What goals do you want to achieve with your project?" An analyst first and foremost needs to understand your business needs. But that's not all.

An analyst will also gather functional requirements for the project. Functional requirements are elicited with questions such as: "What goal will a user accomplish with this feature?" and "What architecture do you want for your application?" A requirements analyst helps determine not only what features will be available in your app, but also what features *should* be available.

But raw requirements data won't help a web development team build your actual product. A requirements analyst must translate these data into concrete product specifications that the team can consult. More specifically, an analyst describes what each block of a web application must do, what each feature must accomplish, what buttons should be clicked to fulfil a particular business objective, and so on.

*"When the user checks X box, then the system changes a placeholder in the number field to Serial, and when the user enters a serial number in this field and clicks Add, the system checks..."* – these kinds of precise and boring, yet indispensable descriptions will serve as documentation for the development team. If a description is very long, the analyst will describe it with a diagram.

The work of the requirements analyst isn't over after product development has begun. Although the initial requirements have been defined, product requirements frequently change during development. An analyst will contact you through the development process to clarify and approve changes to the requirements and new requirements.

These are the typical responsibilities of a requirements analyst:

- Eliciting project requirements
- Communicating requirements to other team members
- Analyzing product requirements
- Developing necessary documentation
- Managing the project's scope

## UX & UI Designer

You'll get familiar with at least two roles of the designer. Most web development teams actually include just one designer who works on both the user experience and the user interface design.

UX designers gather the functional user requirements. They create user personas – descriptions of individuals with the product's target audience – and make sure that the product design helps resolve actual problems that the target audience faces.

UX designers might also write user stories (i.e. scenarios or storyboards) to describe user behavior when interacting with an application. They don't just follow the specifications documented by a requirements analyst. UX designers must further stipulate how product features can and should be implemented.

UX designers also perform the following duties:

- Create information architecture (i.e. decide how information is organized and presented to the user)
- Develop wireframes (product blueprints that show the web application's structure)
- Create prototypes for user testing

Great UX designers also understand how HTML, CSS, and JavaScript interact in the browser. UX designers must conceive an interface that's easy to implement in code, and this is possible only if they understand client-side development.

Designing the user interface is different from developing the user experience. While the UX designer focuses on functionality and user interactions, the UI designer makes everything look good – that's why this role is introduced to web development teams.

The UI designer is responsible for the product visuals, which include the color scheme, fonts, and overall style. The UI designer might also design micro-interactions, animations, and even logos and brand-specific fonts.

We've concentrated on descriptions of the UX and UI designer as individuals. But if your project requires even more work than one person can handle, more designer roles may be introduced. For example, interaction design and information architecture design can be done by dedicated designers in big web development teams.

At GreenWhite Developers and at most other development companies, however, a single designer develops both the UX and UI.

## Web Developers

Now that we know who designs website prototypes and makes them look good, we need to mention the developers who bring the design to life in code.

In most web development teams, developers know enough technologies to write both client-side and server-side code. *Full-stack* web developers know at minimum HTML, CSS, and JavaScript (JS) for client-side development, and one of several backend programming languages – Ruby, PHP, and Python, to name a few. We’ve mentioned only programming languages, but web developers also use a plethora of frameworks and preprocessors built on those languages to increase the speed of development.

But what if your project grows? To improve the team’s performance, the duties of full-stack web developers are divided among two or more specialized developers.

First, there are HTML and CSS developers. They turn product visuals into code. Keep in mind that HTML and CSS developers don’t develop functionality! They only bring the UI designer’s work to life in code.

Second, there are front-end web developers. These are the people who actually implement functionality – but only for the front end. When you click a button on a website or submit information through a contact form, you’re interacting with the website thanks to JavaScript. Front-end developers make sure that those buttons and forms – the web application’s interface – function correctly.

Front-end web developers also ensure that your web application looks great on screens of any size and works well in any browser. Often, a front-end web developer works as an HTML+CSS+JS specialist, so one person does all the jobs of client-side development. At RubyGarage, we often separate these responsibilities between two people – an HTML+CSS specialist and a JavaScript developer.

Last but not least, there are back-end developers. In a nutshell, they implement the application’s business logic and design the server architecture for the app. Here are the duties of back-end developers:

- Write server-side scripts
- Create and manage databases
- Integrate the application with cloud computing services
- Develop or integrate a Content Management System
- Implement security standards

In addition to these responsibilities, back-end developers often take on Development-Operations tasks: maintaining server infrastructure and updating and releasing new versions of the application.

For more demanding projects we bring in a Development-Operations (DevOps) engineer, a role we mentioned earlier.

Web developers make products scalable, testable, and stable, and make sure that they meet your business requirements.

There's just one team member we haven't talked about yet – the Quality Assurance (QA) specialist. QAs help web developers find bugs and launch stable apps.

## **Quality Assurance Specialists**

Quality Assurance (QA) engineers are impartial guards of product quality. As soon as web developers bring new features to an application, QA engineers look high and low for issues with business logic or design.

QA engineers perform acceptance testing to guarantee that your product works according to the business requirements. They prepare testing strategies, develop test plans and test cases, execute those tests, and track bugs. When automation tests fail, they write bug reports and later double-check that web developers have successfully fixed all issues.

QA engineers also prepare testing environments – most notably, a development server – to test your application for compatibility with various browsers and hardware platforms.

Here's a list of the most important responsibilities of a QA engineer:

- Write tests
- Test software quality
- Performing regression and negative tests
- Test the user interface and app compatibility with various browsers

## **What will be needed?**

In a bid to reduce cost, and execute this project efficiently within the specified time and with the limited resources, we suggest restricting the team size to a minimum of 6 developers/specialist which will require:

- A Requirements Analyst
- A UX and UI designer
- 2 Full-Stack Web developers
- A Database Developer, and
- A Quality Assurance Specialist

We believe that a combination of this team size will deliver the projects effectively and efficiently within the specified time range, and with our limited resources.



## Our Proposal

GreenWhiteDev has a mission to provide actual, innovative, and lasting IT solutions for our clients. Hence we now have a re-structured organization to make sure we can achieve this mission for our clients. GreenWhite Developers consists of several IT experts working remotely, to achieve our set vision and goals.

We've held meetings concerning how we can improve performance, productivity, and deliverability for our clients. We've hence developed a proposal which we think is achievable and can see the deliverability of the projects for Touching Lives Skills Nigeria.

To ensure that our budgets tally and we are conducive with how to handle the necessary costs required for these projects development, we present this 7 point proposal for your review and approval.

- 7) GreenWhiteDev Solutions receives a commission of 20% on all charges for transactions carried out on TLSavings, TLPay, and TLUSSD.
- 8) GreenWhiteDev Solutions receives a commission of 10% on all payments for students registrations made via the TLSavings API, and Payments made on TLCareers Learning Management System.
- 9) GreenWhiteDev Solutions receives a commission of 2% for all TLBank Deposits.
- 10) The maintenance fee for our live applications should be reviewed upwards, while considering the addition of TLCareers which is the newest and most robust live application, and consciously contribute to the possible success of the Touching Lives Skills Projects
- 11) The team of GreenWhite Developers will devote their time and valid commitments to see to the success of these projects.
- 12) GreenWhite Developers will execute these projects by eliminating costs as much as possible, to make these projects achievable. We will try our best to utilize the resources available to offset the costs required for the project.
- 13) GreenWhite Developers will endeavour to meet set milestones and time targets, while trying to minimize delays that might result due to limited resources.

## About the Proposed Commission Charges

We've come up with a 20<sup>th</sup>/10<sup>th</sup>/2<sup>nd</sup> part plan, with a view that this is economically feasible for your organization. We believe that this plan will contribute immensely to the development of these projects, and offsetting the costs required in their upgrade/building.

All commissions will be generated, processed and paid via the TLSavings System, except for TLCareers, which might make use of a separate platform to accept payments. Generating and



processing these commissions via the TLSavings System will ensure the participation and contribution of our team in building and maintenance of your organizational projects.

## About the Proposed Maintenance Fee Review

- The maintenance fee for our live applications should be reviewed upwards, while considering the addition of TLCareers which is the newest and most robust live application.
- The review should reflect your conscious monetary contribution to the possible success of the Touching Lives Skills Projects.
- As this review aims at achieving the development of TLProjects, it will be valid for the period of project development, after which a new review of maintenance fee payment could be done.
- During this period, payment of maintenance fee can be regulated based on set milestones met.
- To enable easy and efficient means of payment for the benefit of we and our clients, we proffer that new methods of payments should be adopted for the payments maintenance fee. Possible options should include:
  - Online payments,
  - Bank deposits,
  - Bank transfers, or
  - Cheque issuing

## Summary

GreenWhite Developers have successfully delivered three (3) projects for our client Touching Lives Skills Nigeria so far. We currently maintain these systems, while adding minor changes to them.

The team of GreenWhite Developers have come up with a reviewed upgrade/development plan for Touching Lives Skills IT Projects. This can serve as a guide to what projects can be achieved within an estimated time frame. The projects will comprise of major upgrades and development of new systems.

The upgrade and development plan listed out 9 projects that could be executed and implemented within the range of 33 to 46 weeks. The development plan provides a priority list for the guide and review of our client

GreenWhite Developers use the Three-Point Estimating approach for projects of this scale. This technique is used to reduce the biases and uncertainties in estimating assumptions. Instead of finding one estimate, three estimates are determined and then their average is taken to reduce the uncertainties, risks, and biases.

The cost for the project is estimated at ₦61,000 per developer. The cost is an estimate of the minimal operational costs required for involving a developer in a software development project, **excluding the costs for wages and salaries.**

In a bid to reduce cost, and execute this project efficiently within the specified time range and with the limited resources, we suggest restricting the team size to a minimum of 6 developers/specialists. We believe that a combination of this team size will deliver the projects effectively and efficiently within the specified time range, and with our limited resources.