UNIVERSITY OF NAROBI

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Project proposal

Project title: Online Skilled Labor Hub

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INTRODUCTION

1.1 Background

We are living in a period in time in which the whole globe spins on the concept of the World Wide Web. Ever since the internet came into being late 1990s the world has slowly shrinking into smaller versions of the global village with communications being enhanced to be as simple as a simple finger-click away. With such an advancement the rate of industrializations has also been taking on an automated directions with people rapidly exiting the comfort of their offices and opting for far more mobile means of completing the same tasks thanks to the mobile technology of computers which never seizes to evolve with every day that goes by. That having been said there is a vast number of services that can be available based on the type of mobility experienced by the world thanks to the advent of technological advancement. This services range from educational, financial entertainment to skilled labor leasing services all of which could be availed to any individual in need of one.

Despite having all this services and the flexibility gained from the internet most of the existing systems connecting the *fundis* (skilled laborers) to the clients simply take the clients requests and then they match their needs to the available *fundi* within the system. As convenient as this sounds a lot is usually left unattended to by the system. For instance issues such as the locality of the client and the laborer and the depth of detail of the service to be given to the client are usually overlooked. This project is aimed at tackling such issues and ensuring that the *fundis* will offer services and the clients will get served in a manner in which both of them will be satisfied with what they all receive from each other.

PROBLEM DEFINITION

In our daily lives we live in households with tools, equipment, devices and services that are integrated to give some level of convenience that enables individuals and even to carry out tasks at with ease. This can range from your electric connection in your, your home's drainage system to the heavy farm equipment safely tucked within the confines of your workshop. This devices and services and devices have become part and parcel of our daily lives that we can't imagine going a day without them knowing the kind inconvenience that awaits us if this devices and service are suddenly omitted from our daily routines. At some point in time this smooth flow of activities is usually interrupted with the breakdown,

malfunctioning of such systems in our houses. When such happens many are usually left helpless and desperate for any help that will get the problem fixed and restore the once existing state of balance in our homes. Out of desperation most home owners have ended seeking help from individuals who in one way or the other ended up worsening the situation by their insufficient knowledge of how to tackle the problem at hand. This has led to most of the home owners losing their devices or incurring losses due to failure of home based systems such as electric circuit failure, clogging of drainage systems, and damage to furniture or break down devices household equipment such as refrigerators, television sets and ovens.

Such situations usually require the attention of individuals with a technical knowledge of how the systems devise and equipment work in order to repair and restore them to their previous working state. When such occurrences take place the home owner usually has to spend a good portion of time scouring browsing through their list of contacts and literally asking hoping to find someone who can offer repair services within a good period of time if luck is on their side. If this fails the home owners are usually forced to abandon all hope and opt to buy new devices, or spend the remaining period of time with the faulty device until their financial ability allows them to make new purchase or installations with respect to the situation at hand.

Home owners are not the only ones who are affected by this for we also have skilled individuals who due to the current economic constrain end up trying to find people in need of their services. In most cases this individuals end up concentrating at particular areas of interest and due to competition and favor most are forced to return home empty handed having taken their services to places where they were less and never getting to individuals who required their services due to being unaware of them.

In the instance where the client and the service provider (*fundis*) get connected through existing labor leasing platforms chances that the clients will be linked to the laborers who is not in their area of locality is also high. This will serve as a disadvantage since the clients will have to wait longer than expected to receive the desired service. The *fundis* might also be a disadvantaged by this since they will end up spending more to get to the clients and end up getting very little from the

service they provided to the clients after payment. This can be very discouraging to the laborer.

There is also the issue of ambiguity in the service requested by the clients since most of the existing platforms offer requesting for service in text format. This will be a constraint since it will not provide room for clarity on the specific task to be tackled. This might in turn lead to the *fundi* showing up only to be presented by a task that is beyond the description that he/she received, hence leading to poor service due to misunderstanding and unpreparedness by the labor

The above are among the key areas that will be tackled by this project.

OBJECTIVES

Research Objectives

i. Research on online labor leasing services and existing platforms.

System development objectives

i. Creating a system that will enable users to login as either clients or workers.
ii. A system that will enable clients to connect to users within a similar geographical so as to save on time and cost of services between both parties.
iii. Creating a system that enables users to evaluate the workers prior to booking them for services.
iv. Workers should be notified once they have been booked for service by the client.
v. Workers should have an easier means of navigation to the premises so as to save on time and provide convenience in service delivery.
vi. Clients should be able to keep track of the services they received.
vii. Workers should also be able to keep a track on the service that they received.

JUSTIFICATION

With the current technological advancement a lot of services are moving from traditional “go to the office” type of set-up to platform that can be access by individuals remotely using desktop computers and mobile devices such as laptops, tablets and smartphones. Currently as it stands, 88% of the Kenyan population

have access to either mobile phone or internet services meaning approximately 8 out of every 10 Kenyans can gain access to the internet and the World Wide Web using the device of their choice based on their ability. Placing such a service on a web- based therefore ensure access a bigger portion of the population requiring these services. The number of people who will benefit with also increase with the level of urbanization of the individual's locality (Kenya, 2017). Another advantage of having of this service being web-based is that the access will be cross i.e. anyone with a device that has internet access capability will be able to access the services. This will also help in dealing with the vast unemployment currently being faced by youth in the country for they make up a bigger portion of skilled individuals who haven't been able to secure permanent jobs.

LITRATURE REVIEW

2.1 Introduction

The technological advancement had brought with it a lot of that has been very helpful to the each and every individual that has crossed path with it. A lot of services ranging from educational, governmental, entertainment have moved from the traditional manner of delivery to and can now be accessed at just a click of a finger using mobile handsets (smartphones), computer desktop applications and websites. This and many more have been done with an aim of bring about efficiency and saving time in service delivery, something that was just concept sometime back.

2.2 Professional Employer Organizations (PEO)

Home based services have also taken on the same trend and this has also changed the way a lot of such services are delivered to those in need. This has been done through professional employer organizations which are basically organizations that have a pool of workers with different skills and own various platforms that assist in the deployment of their workers to clients requiring their services but have little or no knowledge on how to get their hands on individual with the professional skills for their day to day household needs. This organizations usually take responsibility of the workers their reporting for duty and payment of wages after each and every task handled by the employee. The workers (skilled laborer) usually gets into a contract with the company/organization which will then connect them to the client. After each task is completed the client will then make a payment to the PEO which will then make the required deduction as per the agreement with the worker before

the worker gets the final payment. The PEO also has to ensure that each of its operations are legal as per the law dictated by the authority in the given area of operations (The Entrepreneur, 2016). Most of the PEOs usually render their services on platform such as Websites and dedicated desktop and mobile applications Despite of the convenience that this brings there are also constrains that may come with it.

Advantages of PEOs

i. Managing certain critical HR service responsibilities such as payroll, benefits and workers' compensation
ii. Shouldering many common employer risks
iii. Provide access to high quality health care
iv. Providing IT infrastructure for HR management
v. Training your employees in both online and classroom venues
vi. Provide their workers with client and market exposure
vii.

Disadvantages PEOs

i. The systems might be affected by internet downtimes hence hinder efficient transfer of data between clients and servers in the network.
ii. People with no knowledge of computer and uses

2.2 Preview on existing systems

a) Juakali Kenya

Juakali Kenya is among the current existing systems providing services that link skilled laborers to clients. Their services are rendered on a website platform. Users get to login into the system either as laborers or clients. Once in the system a client will post his or her issue that requires the attention of skilled laborer. The system with then link the client and the best suited laborer.

b) Nani

Nani Kenya is also another professional employer organization. It mainly though similar in mode of operations to Juakali Kenya, it uses a rather different approach when it comes to

acquiring the laborers which is not conducted on the website but applications which are sent to the organization through emails and interviews to determine who to employ/manage. Only the clients get to interact which the website for a better part of the websites operation.

Both of the above mentioned systems (organizations) have served the purpose of bridging the gap between the clients and the employees (skilled laborers). Despite having achieved all of this there is still a lot that was still left out by this two systems. This may include locations of the using the location of the users to enhance the delivery of the service while saving on time. Another critical area that was also left out was the profiling of both the clients, but when it comes to this the emphasis is mainly placed on the laborers profile. This is quite important since the clients must have thorough knowledge of the employee who will be serving so as to be at ease with him/her once the employee shows up at the client's premises to deliver the services required by them.

METHODLOGY

3.1 RESEARCH METHODOLOGY

This is the manner in which the problems to be solved while creating a new system will be identified and solved. In this case the internet will be of great use in providing the information on the existing systems and the problems being faced by the existing.

User based reviews on the existing platforms will also be useful in giving the general outlook of the systems and the level of satisfaction currently being given by the organizations to their users.

If need be the owners of the systems will be contacted and brief interviews conducted with an aim of gaining more clarity on how the systems are deployed and mode of functioning.

3.2 SYSTEM DEVELOPMENT METHODOLOGY

The system will be developed using the Waterfall Project Management model. The model will contain the following steps:

i. Requirement specifications
ii. Analysis and System design
iii. System coding
iv. Testing and Debugging
v. Deployment and Maintenance

3.2.1 Requirement Specifications

Functional requirements

The system should be able to meet the following functional requirements:

i. Give users the ability to create accounts based on their interests i.e. clients or skilled laborers
ii. The system should allow clients to request for services
iii. Allow the skilled laborers to post the services which they offer on the website
iv. The system should enable the notification of the laborers once there is a pending duty for them to attend to.
v. The system should enable the clients to make payments for their service and also enable the payment of the laborers upon the completion of each domestic task.
vi. The system shout enable the client to view the list of available laborers and viewing of their profiles.
vii. The system should enable the clients to keep track of all the devices that they received and for the workers to also keep track of the clients that they have served.

Non-Functional Requirements

The system should be able to meet the following non-functional requirements:

i. The system should have a user friendly interface.
ii. The system should be able to be accessed by any device that support internet access seamlessly

iii. The system should ensure the security of user account and information by only allowing limited access to users and their respective accounts.

3.2.2 System analysis and design

The system will be broken down into two parts:

i. The front end – this will be the website which the users will be interacting with. It will be composed of several webpages based on the user's activity in the system.
ii. The back end – this will be the part of the system that will be made up of the system's database

The design of the system in terms of data flow will be represented using data flow diagrams and entity relationship diagrams.

3.2.3 System coding

The coding of the system will be done using the following software:

i. WAMP server – this will be localhost software for the system
ii. PHP storm – this is the integrated development environment that supports HTML, CSS, JavaScript and PHP scripting languages.
iii. MySQL – this will be software where the system's database will reside.
iv. Google Chrome browser – this will be the testing browser for the system.
v. Windows 10 operating system – the operating system upon which the system will be deployed

The following scripting languages will be used:

i. HTML and CSS – language for the front end design of the system's webpages
ii. JavaScript – language for enhancing interactivity and data entry validation on the webpages.
iii. PHP – the language for connecting the webpages to the database of the system.
iv. MySQL – the language implementing the system's database.

3.2.4 System testing and debugging

After completing the development of the system testing will be done in order to ensure that the system functions as expected. The testing will be done in the following terms:

a. Unit testing – This will involve testing each module in the system for any error during performance.
b. Integration testing – this will involve the testing of how different in the system work when combined to work on a given task in the system.
c. Data validation and exception testing – this will done by entering both correct and incorrect data input into the system so as to see how the different modules will process data even in exceptional situations.
d. System testing – when all the above stages of testing are completed the whole of the system will be tested before being deployed.

3.2.5 System deployment and Maintenance

After completion of the testing and debugging phase of the system development life cycle, the system will then be deployed to a few users for testing for a given period of time so as to get the overall response on the system from users. The feedback from the users will then be used to tweak the system further in order to fit the overall user liking.

3.2.6 Resources required.

The hardware resources required for the development of the system will include:

a. Desktop computer or laptop having 4 GB of RAM, 300 GB of storage space 1 GB graphics memory.

The software resources required for the development of the system will include:

a. Windows 10 operating system
b. PHP storm IDE
c. MySQL
d. Google Chrome Browser
e. WAMP server software

3.2.7 System development Timeline

Task No	Task Name	Planned Hours	Planned Start Date	Planned End Date	March	April	may
1	Problem Definition	5	13/03/2017	17/03/2017			
2	Requirement Analysis	2	18/03/2017	25/03/2017			
3	System design	5	26/03/2017	8/04/2017			
4	System coding	30	9/04/2017	30/04/2017			
5	Testing and debugging	100	1/05/2017	7/05/2017			
6	Deployment and maintenance		8/05/2017	14/05/2017			
7	System documentation		15/05/2017	21/05/2017			

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