

# Smart Mobile Application for Allowance Calculation, Opportunities and Labour Hiring on Site- Labour Dome

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**Abstract** - Construction is a sector with a different role to develop the organization, involving planning, processing, and execution along with the need of material, machine, money, and men, etc. The construction industry relies on workforce which are involved in construction site, so accordingly it is important to increase the efficiency of labour by their presence and providing a proper amount of wages. As we know the wages paid to the workforce is calculated manually, added in the muster book and then distributed to the workers. Also the hiring of labours is done through the on-site method by visiting the location and selecting the labour as per the requirement in construction. By considering the above parameters this paper aims to develop a mobile application through data collection and internet-based research with various socio-economic issues. This application is used to show the labour attendance, calculating of wages of the labours regularly on a daily and hourly basis also providing us with new opportunities to collect, and analyze the data for the labour market issues as per the requirement of the employees. This study of calculation for allowance in the construction industry helped in knowing that this application is an efficient and effective, and also the aim is to give an online portal in the way of finding the labours required to work on-site. A large number of observations can obtain from online job portals. This application is used to minimize the task and develops a system for enhancing for betterment in the process.

**Key Words:** Allowances calculation, Attendance recording, Labour hiring, Labour Opportunity, Mobile application

## 1. INTRODUCTION

The construction industry is one of the largest sectors in the society, the reason to boost our construction industry is for betterment in living standards [1]. Mobile technology reduces all the depth in work with the introduction of software system applications. Web-based system plays an important role in the construction industry, variety of application, the software is developed to enhanced efficiency in the construction industry. It is apparent that construction

companies also make advancement and feels essential to establish mobile device its application to make progression in industry with faster and advancement in a working process. Automation and digitalized construction work makes the activities much ideal and desired. Mobile technologies will be utilized in construction sites as a wiser method for development. Even until currently, some construction information exchange is completed through ancient information and communication strategies so to cut back such a long methodology this mobile application technology is increased. Having construction elaborated information digitalized by use of a mobile computing technology that runs automatically becomes ideal and far desired. Mobile technologies will be utilized in construction sites as a wiser method for development [4]. Even until currently, some construction information exchange is completed through ancient information and communication strategies so to cut back such a long methodology this mobile application technology is increased. Having construction elaborated information digitalized by use of a mobile computing technology that runs automatically becomes ideal and far desired. Mobile application is efficient to enhance development in nature and to maximize potency and scale back errors. Construction processes and management applications are effective and easy for the users after the unit operates as a result of it will be utilized by anyone as there's no specific coaching needed to run the system of the application [20]. In this project, we are going to study the secure method for calculative wages. The work which is carried on construction site, their allowances are paid consistent with the work assigned to them within which their wages are entered in mobile application. The calculations are done manually, to avoid fraud within the work, and for correct calculation and distributing the proper quantity this application is developed. By this method, we can avoid fraud within the work to some extent. Also along

with it, a large number of construction sectors face such problem due to unemployment in the construction industry. Labours are affected much by such problems, resolving such problems are also necessary for proper development. This problem arises due to less number availability of labours, the supply of labours, and the efficiency of the labour market. Utilization of technology and making available anytime the wireless system can be beneficial; it can easily transfer the data, can be informative and made available with easy

access. The mobile application plays an important role in design and development and also in the construction site which showcases every resource properly without any error, also time-consuming, and giving better result. Through this mobile application, labours will get the platform to showcase their work; also contractor can easily find the labour as per their requirement for work. . In this project, we are going to study the secure method for calculative wages. The work which is carried on construction site, their allowances are paid consistent with the work assigned to them within which their wages are entered in mobile application. The calculations are done manually, to avoid fraud within the work, and for correct calculation and distributing the proper quantity this application is developed. By this method, we can avoid fraud within the work to some extent and also by the combination of preference and technology ensures both development and exogenous to increase the labour market by online platform mode. Through this application, he can directly contact the labour. This increases efficiency, betterment in the work, easy sorting and finding labours.

## 2. OBJECTIVE

1. To study various aspects related to labour allowance, opportunity and hiring on job site.
2. To study the factors related to data collection, look-in and employment of labours.
3. To conduct questionnaire survey to analyze the factor occurring for data entry and its accuracy.
4. To develop smart mobile application for easy and accurate calculation of wages, and also including attendance of the labours and its distribution, also for convenient availability of labour resource.
5. To enroot smart mobile application convenient for contractor and labour use.

## 3. LITERATURE REVIEW

Indira Hirway, Neha sovereign this study shows that the ascent within the state has not been shared by labour. This study additionally argues that Associate in Nursing unfair deal to labour needn't be a locality of neo-liberal economic reforms which providing a simply share to labour will

contribute towards promoting effortful and just growth within the state [1]. Jacob A. Benfield, William J. Szlemko during this discussion focuses on ethics and review board problems, accomplishment and sampling techniques, technological problems and errors, and information assortment, cleaning, and analysis. Conducting Internet-based analysis remains that the investigator should weigh fastidiously [2].Luz Azlor, Pakistani monetary unit Piil Damm, Marie Louise Schultz-Nielsen This study investigates

the result of native labour demand on employment of migratory staff, its findings of great effects of the native labour market conditions support the reform, our results give quasi-experimental proof that immigrant employment is sensitive to labour market conditions within the initial location and highlight the importance of fastidiously coming up with exile al- location policies [3]. Dr. Anoop Sattineni and Taylor Schmidt mobile device on construction place have effectively increase the benefits on job-site, it helped to achieve full interpretation of use of mobile device with respect to the product needed[4]. Richard B. freewoman this text that computerized and use of net square measure related to hours and wages paid and therefore the job search and accomplishment and moving speedily to the online coupling to the members and carrying messages [5]. Bretz, R.D., Boundreau, J.W. and Judge, T.A the aim of this text is to review the previous analysis in every of the 3 job search contexts associate provide an integrative analysis of the predictors, processes, consequences, and ranging objectives of job search behavior across Associate in Nursing individual's potential employment things, implications for future analysis on job search behavior square measure mentioned [6]. Kelvin Onoka This shows the challenges that effect the implementation of mobile technology on data collection also defines mobile technology challenges to remote environment and provide adaptable systems [7]. Sivanaadhbaazi Karampudi, Sunil Kumar Dasari, Yedukondalu Ravuri, Nazeer Shaik, Veerababu Reddy 2012 this paper shows the application that was develop to reduces the fraudulent of the workers in government organization, to show the work progress and the distribution of labours wages on daily basis. Also the system increase more security and provides reliable and related data while taking the login in to the application and attendance [8]. Brats berg et al., While prior studies of immigrants' long-term performance in the Norwegian labour market have been mainly descriptive in this article, we complement descriptive overviews with regression-based analyses that seek to identify cohort-specific assimilation profiles by years since migration. While prior studies of immigrants' long-term performance in the

Norwegian labour market have been mainly descriptive in this article, we complement descriptive overviews with regression-based analyses that seek to identify cohort-specific assimilation profiles by years since migration [9]. Lawler 2013 According to Lawler, job satisfaction represents a measure of the quality of life for every worker and has to do with the perception of the meaning of fairness through attitudinal responses. In turn the meaning of fairness is perceived in facets such as the work itself, pay or

remuneration in the form of salaries and wages, supervision for technical and behavioural support, promotion and association with co-workers [10]. Robert S. Walker, James A Pettitt The collection and organization of data for infrastructure assessment have traditionally been laborious and lengthy tasks. Smartphones now provide the to ease the burden of these chores. It can improve the effectiveness and efficiency of information collection and organization [11]. Jun Iio 2016 this involves the novel which shows the attendance of the participants through mobile application, this paper shows the overview of the system and the result indicated that the proposed system was efficient for managing attendance records and its usability was appreciated [12]. Bino Paul G D, Susanta Datta, Krishna M In this chapter, we provide an overview of the emerging dynamics of Indian labour market, covering the trends of select demographic variables such as labour force participation ratio, trend of employment status, wage scenario, an overview of India's largest public work programmed [13]. Aceleanu Mirela Ionela The study of the project results focus on identifying actions to encourage lifelong learning in Romania and to improve educational and employment policies, to improve the quality. To obtain the best results, these measures applied in education must be completed with active labour market measures, as well as appropriate social and fiscal policies. By implementing lifelong learning programs Romania can recover the gaps compared to the developed countries, improve work efficiency and employment [14]. Mahamid Labour productivity plays a key role in assessing the success of construction projects which reflects the significant effect of this resource in the construction sector, meaning that any enhancement in labor productivity will contribute a high deal to enhance the project effectiveness [15]. From the above literature it is identified that most of the work is carried out for data entry, storing, data collection, etc. and very less application is of calculating by mobile application rather than traditional method. So along with the concept used on daily basis the other concept of calculating through device is initiated, this application can be easily opened at

any time, any location whenever needed making work easy, along with the concept used on daily basis the other concept of calculating through device and finding the work is initiated, this application can be easily opened at any time, any location whenever needed making work easy.

#### 4. METHODOLOGY

The study of this project is the application of technology in the construction industry that brings the production,

effectiveness, efficiency, enhancement, effective communication and coordination amongst the work and leading to proper management. In this research study, the data is directly entered in the mobile application rather than entering in the book or manual. Analyzing the easy method to obtaining their daily attendance, calculating allowance of the worker daily and hourly basis, and also gives the monthly data as required. Through this application we can easily calculate the wages required without any occurrence of error and also this application involves long term labour market, which helps the labour to increase the work efficiency and getting the stage to enhance the skills; this increases the labour hiring and labour opportunity to get employed. The study enables us to know the purpose of whether the hiring of labour will be profitable and become easy through the process of mobile application searching. Through the mobile application the efficiency of the work increases. Applying this application on site will help for faster work and a tool for easy working. Frame work of mobile application is represented below. This helps in easy understanding the process involved in the mobile application.

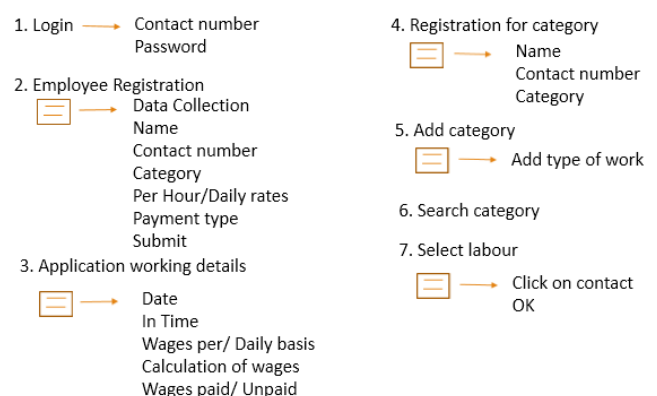


Fig -1 Flow Chart of Mobile Application Process

#### 5. RESULT AND DISCUSSION

Mobile application for allowance calculation in the construction industry ensures the principal study of the specification of calculating the wages which reduces error occurring at the time of data entry and helps in proper distribution of allowance, also through this mobile application, the labours can easily get the platform to showcase their work, the contractor can directly contact the person selected through the contact who are registered. The input given in the application will help the contractor to direct the call directly to the labour. This saves time and also allows the labours to work.

### A. Mobile Application Logo

The mobile application has various features titled “Labour Dome”- Attendance, Wage Calculation, Labour employment. The application consists of details of labour opportunities, hiring on-site work required for various works, allowance calculation. As shown in figure 2



Fig -2 Mobile Application Logo

### B. Login in Page

The login form is the page for a user, on this, the user has to login by username as contact number and password and then click on the login button. When the contractor fills in the password and username the system gets login to the main page. As shown in figure 3

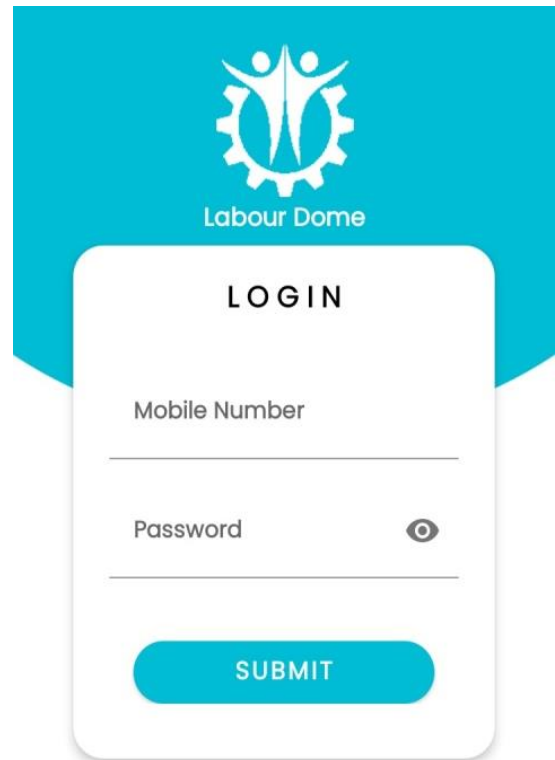
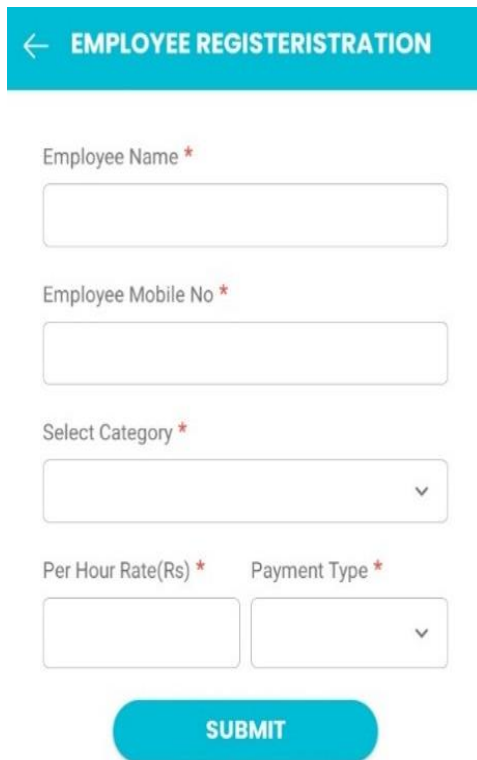


Fig -3 Login page- Contact no. & Password

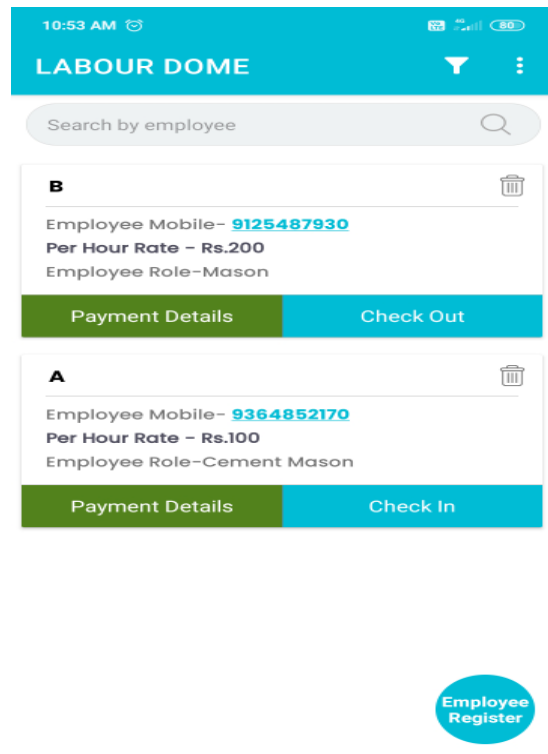
### C. Workers registration

Once the system gets logged in the contractor gets access to the application. The contractor has to add the staff with their personal information including name, type of work they are allotted, Contact number, per hour rates or daily rates depending on the basis of work, and also the payment type involving wages to be paid on hourly or daily basis. At the end submit the registered data which will save the person's details. This information helps us to get access to his data whenever required. As shown in figure 4



The form is titled 'EMPLOYEE REGISTERISTRATION' and contains the following fields: 'Employee Name \*', 'Employee Mobile No \*', 'Select Category \*' (a dropdown menu), 'Per Hour Rate(Rs) \*', and 'Payment Type \*' (a dropdown menu). A blue 'SUBMIT' button is located at the bottom.

Fig -4 Employee Registration



The interface is titled 'LABOUR DOME' and features a search bar 'Search by employee'. It lists two employees:

- B**: Employee Mobile- 9125487930, Per Hour Rate - Rs.200, Employee Role-Mason. Buttons: Payment Details, Check Out.
- A**: Employee Mobile- 9364852170, Per Hour Rate - Rs.100, Employee Role-Cement Mason. Buttons: Payment Details, Check In.

An 'Employee Register' button is visible at the bottom right.

Fig -5 List of Labour Employees

### D. Workers registration

This page includes the list of labour employee registered. The number of labour employees can be registered as needed. To reduce the time required to search each labour employee can be reduced as the required labour can be searched by a click on the search button. Its shows the payment mode, wages decided, contact number. Payments details show the details regarding each pay. The check-in and check-out button enables us to know the total working hour, calculates the wages and also helps in maintaining the attendance of the person. Shown in figure 5

### E. Result showing payment Paid/ Unpaid

This page shows the payment details of particularly each employee who required. Including the date which helps to maintain attendance of labour employee. The total amount of payment paid/ unpaid marked with green and red colour respectively. Accordingly, it shows the complete data analysis of the month. Helps in easy sorting and reduces confusion and develops an easy way to calculate and store the data. Shown in figure 6

← A's Payment Details	
<b>03 Jun 2021</b>	<b>Paid</b>
Total working hours-3	
Total Salary of day Rs.300.0	Pay Type:Hourly
<b>04 Jun 2021</b>	<b>Unpaid</b>
Total working hours-10	
Total Salary of day Rs.1000.0	Pay Type:Hourly

<b>Total UnPaid</b> RS.1000.0	<b>Total Paid</b> RS.300.0
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Fig -6 Result showing payment Paid/ Unpaid

### F. Application Control Desk

On this page the various details of labours can be added. It includes initial stage process activity, for adding new information or registration. For this the users has to click on a three dot menu at the top right corner of the page. It involves categories and the workers. Number of different categories and workers can be added in this page. As shown in figure 7 (Mobile Application Control Desk).




Fig -7 Mobile Application Control Desk

### G. Application Category list

On this page the different working categories can be added. The different type of working categories involved in construction like Mason, Bhisti, etc. Various type of work can be added, which helps in construction, also this technique helps to sort the work properly and can be made available easily through various aspects. The labour required can be easily identified and be easily selected as the labours are properly separated according to the type of work. Click on add category button and required categories can be added. As shown in figure 8

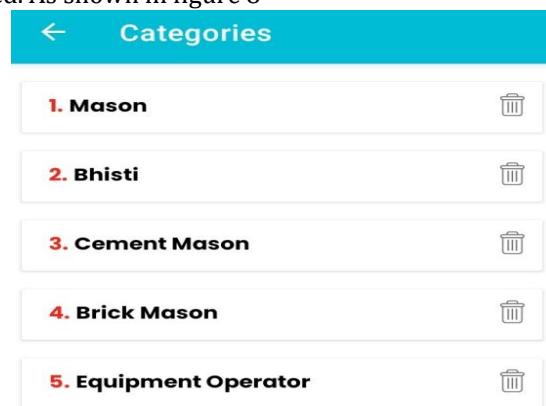


Fig -8 Application Category list

### H. Registration

In this page the registration of labour is done which includes name, contact number of the labour and type of categories. This registration is done by the contractor working on site and also the registration of the labour can be done who are in search of labour work. On this page the type of work that is allotted to the labour is selected. Click on submit button once the workers registration is completed. As shown in figure 9.

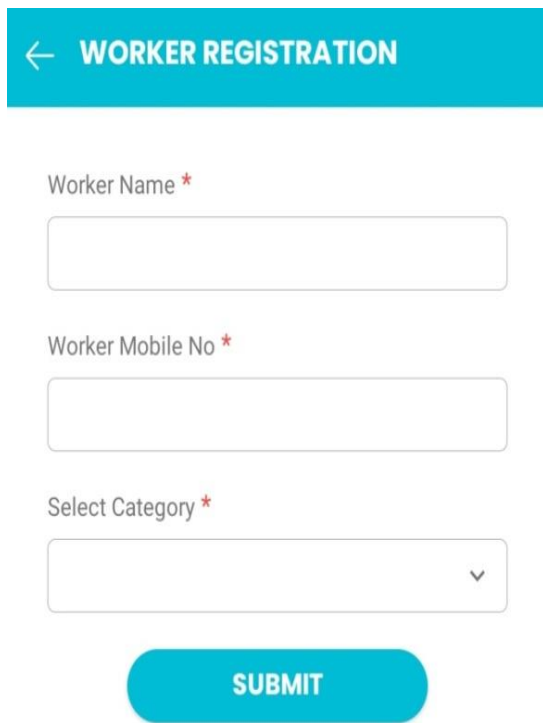


Fig -9 Workers registration- Name, Contact No, Type of category allotted.

### I. Workers Contact details

On this page, the contactor can choose the required labour by searching by name of labour on search tab provided at the top of the page. This page includes the details of the labour including name, contact of the labour and the role of the worker allotted. When user once clicks on the contact number saved in the registration. The number is dialed automatically and the contractor can easily contact the labour he requires. This helps in easy contacting to the labour. As shown in figure 10.

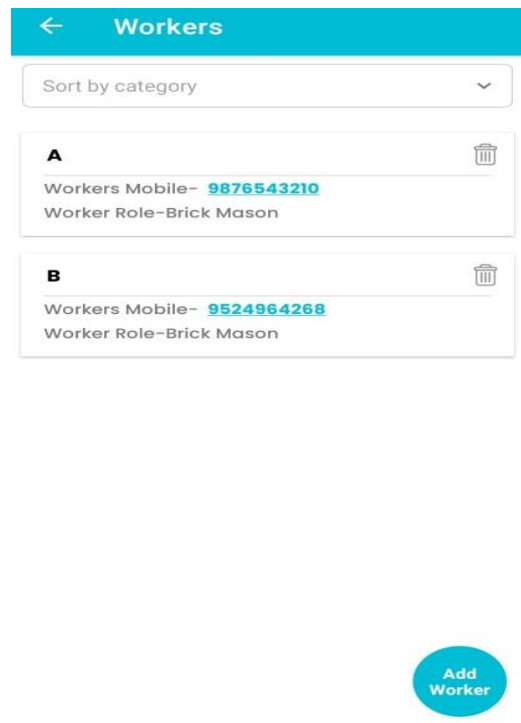


Fig -10 Workers details including the contact number to direct contact.

### J. Dialed Contact details

On this page, the labour required is directly contacted. The required worker's contact is directed to him. This saves time and also the number of workers gets the opportunity to carry the work and saves time including the increase in efficiency in work. As shown in figure 11

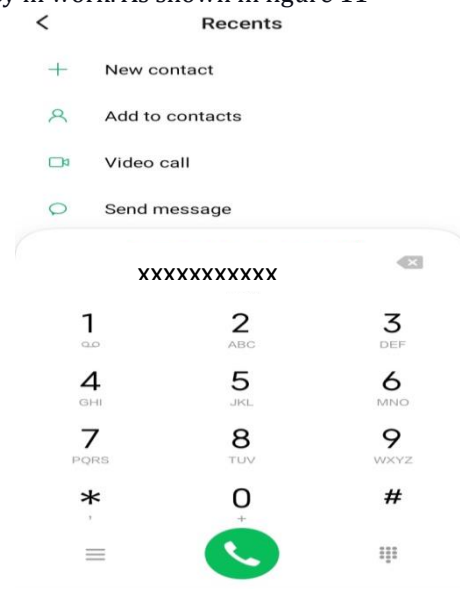


Fig -11 Contact dialed to selected labour.

## 6. CONCLUSION

In the construction industry this application can be an efficient and effective way to achieve efficiency in the work without much effort in the calculation, maintaining attendance, storing data as long as required and the problem related to labour hiring can be implemented. This study helped to reduce various aspects related to labour allowance, opportunity and hiring on job site. Study of mobile application concludes that the problem related to labour hiring and their wages calculation can create the problem related to the misunderstanding if proper care is not taken. By this method of a mobile application, the traditional method can be reduced and the implementation of new technology can be involved. This application helps in record maintaining and the application is cost-efficient and reliable. The application is helpful in time-saving as no need to give more time for labour finding and manual calculation. This is single stage platform that helps in the time-saving of the contractor and also helps in getting new opportunities. This application becomes helpful in as no laptop or other devices are specially needed to be opened or maintained, accuracy and minimization of fraud can be done.

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