

## WEB-BASED E-RECRUITMENT APPLICATION DEVELOPMENT USING THE WATERFALL METHOD: A CASE STUDY OF THE COMPANY PT. XYZ

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### ABSTRACT

*The Web-Based Employee E-Recruitment Application is an application used to facilitate job seekers in searching and applying for jobs as well as providing facilities for companies in carrying out the employee recruitment process. This is because there are a large number of applicants who apply to the company to get a job, with a large number of applicants there will be a lot of documents that will be received and read by the company's recruiters. This clearly requires quite a long time for the applicant selection process to find employees who match the criteria required by the company. Based on these problems, an application was built which aims to find employees who meet the criteria or skills required but can also save time as efficiently as possible. The method proposed for developing this system is using the waterfall method, using a MySQL database, and testing the application using the Black-Box testing method.*

**Keywords:** Recruitment, Waterfall, Black Box Testing, MySQL, Web

### 1. PREFACE

#### Introduction

The development of science and technology is happening exceedingly fast, especially in the current era of globalization, which requires us to follow these developments. Employee recruitment is the process of searching for and attracting candidates who have the ability to apply for jobs offered by an organization or company. This is usually carried out by a team from the Human Resources Development (HRD) Department which is responsible for selecting prospective employees to fill the required job sections. Widhayani and Vishnu said that for several reasons, HRD sometimes made mistakes in selecting new employees [1]. One of many reason is the limited time for the HRD to sort through too many varied applicants.

PT Berca Hardayaperkasa (Berca) is one of the pioneer companies operating in the telecommunications sector, both in terms of network service providers and infrastructure. Until

now, the recruitment process at PT XYZ itself is conventional or manual, while according to Taqwiym & Wijaya, as information technology develops, more jobs are available via social media or via the internet [2]. Based on the existing problems, an online recruitment tool is needed that can help HRD recruit employees more easily and help companies find potential candidates with the right criteria or skills needed by the company. On this basis, the researcher proposed the title "Creating an E-Recruitment Application Program at PT XYZ" which is expected to help provide solutions for Berca, especially the HRD department in employee recruitment. There are several studies that have developed website-based e-recruitment applications that have been published, such as the Web-Based New Employee Recruitment Application, Case Study of PT Esensi Indonesia. The creation of a web-based e-recruitment application was also carried out in this research, supported by the Waterfall method in its development.

## 2. RESEARCH METHOD

### Data Collecting Method

The method used by the author is a descriptive method used to collect data, analyze data and interpret the state of the system design object and all data relating to the system in place and obtained through survey techniques, literature studies and interviews.

### System Development Method

The system development method used by the author is the waterfall method, or "Linear Sequential Model" which describes a systematic and sequential approach to software development, starting with the specification of user needs and then continuing through the planning stages, modeling, construction, and delivery of the system to users (deployment), which ends with support for the complete software produced.

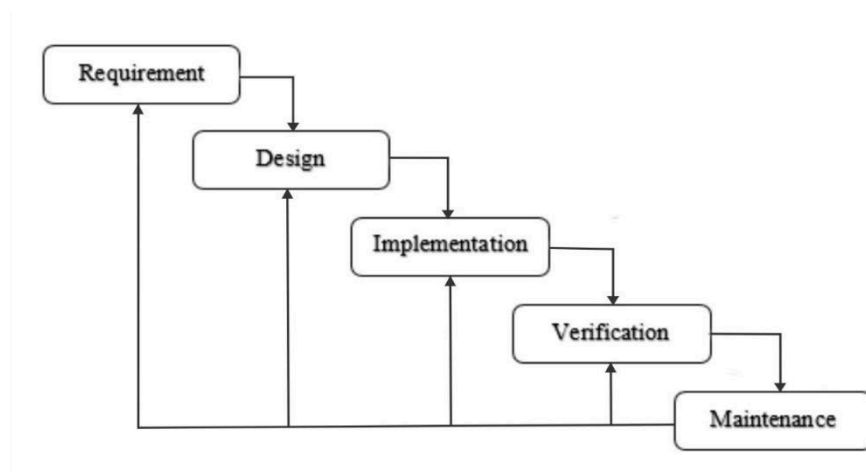


Figure 1. SDLC

Source: <https://salamadian.com/sdlc-system-development-life-cycle/>

### Materials

The data collection technique that the author uses is observation where the author directly sees the business processes running at PT XYZ. The object of system design is the website-based E Recruitment application at PT XYZ. The author also collects data using the library study method coupled with a direct interview with the IT General Manager of PT XYZ to ask about the application that would be created.

### 3. RESULT AND DISCUSSION

#### Login Interface Design

In figure 2 is the design of the login interface for the company admin.

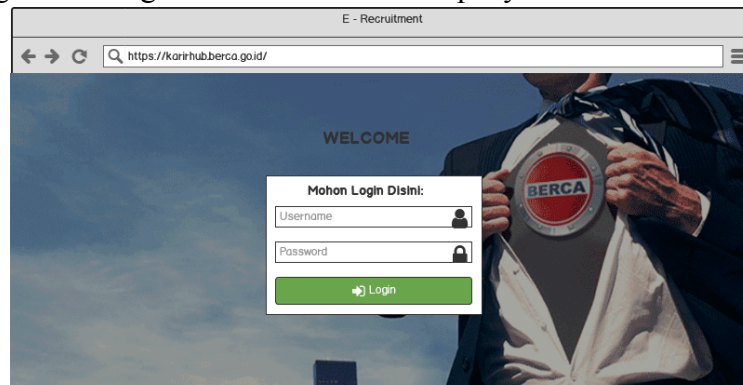


Figure 2. Login

#### Admin Dashboard Interface Design

In figure 3 is the dashboard interface design for company admin.

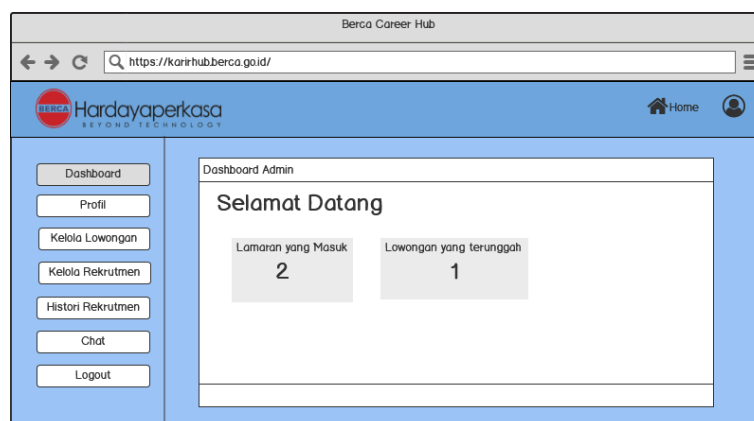
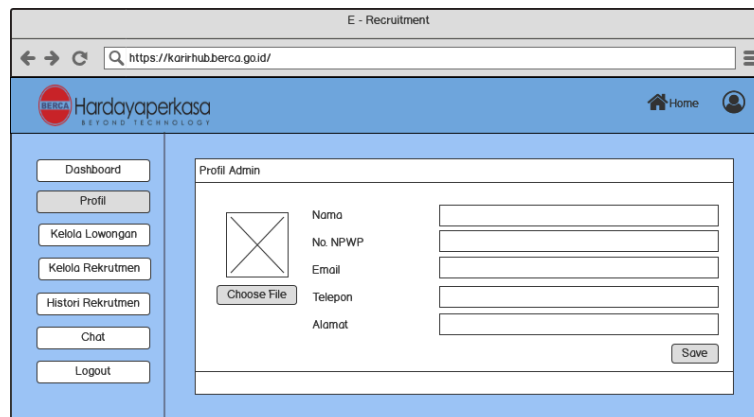


Figure 3. Dashboard Admin

#### Company Admin Profile Interface Design

In figure 4 is the design of the company admin profile management interface.

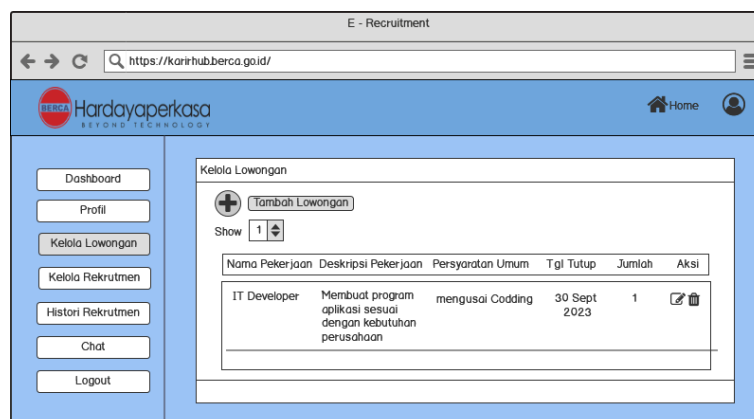


The screenshot shows the 'E - Recruitment' web application. The sidebar on the left contains links: Dashboard, Profil, Kelola Lowongan, Kelola Rekrutmen, Histori Rekrutmen, Chat, and Logout. The main content area is titled 'Profil Admin' and contains a form with the following fields: Nama, No. NPWP, Email, Telepon, and Alamat. There is a 'Choose File' button for profile picture upload and a 'Save' button at the bottom right.

Figure 4. Admin Profile

### Job Vacancies Management Interface Design

In figure 5 is the job vacancies management interface design for company admin.



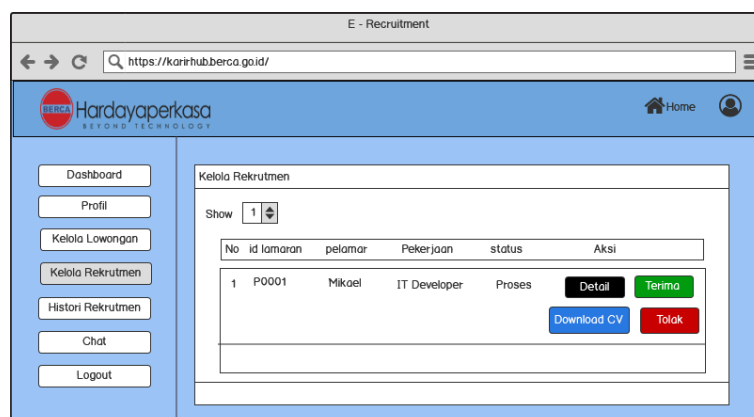
The screenshot shows the 'Kelola Lowongan' (Manage Job Vacancies) page. It features a sidebar with navigation links. The main content area includes a '+ Tambah Lowongan' button, a 'Show' dropdown set to 1, and a table of job vacancies.

Nama Pekerjaan	Deskripsi Pekerjaan	Persyaratan Umum	Tgl Tutup	Jumlah	Aksi
IT Developer	Membuat program aplikasi sesuai dengan kebutuhan perusahaan	menguasai Coding	30 Sept 2023	1	[Edit] [Delete]

Figure 5. Job Vacancies Management

### Recruitment Management Interface Design

In figure 6 is the design of the recruitment management interface for company admin.



The screenshot shows the 'Kelola Rekrutmen' (Manage Recruitment) page. It features a sidebar with navigation links. The main content area includes a 'Show' dropdown set to 1 and a table of recruitment data.

No	id lamaran	pelamar	Pekerjaan	status	Aksi
1	P0001	Mikael	IT Developer	Proses	[Detail] [Terima] [Download CV] [Tolak]

Figure 6. Recruitment Management

### Recruitment History Interface Design

In figure 7 is the design of the recruitment history interface for company admin.

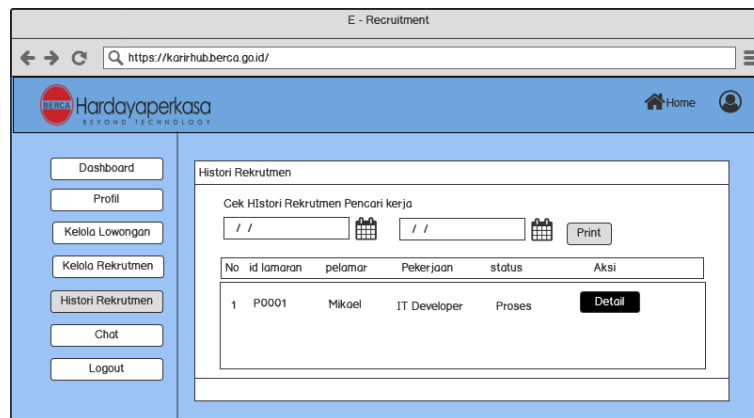


Figure 7. Recruitment History

### Message Notification Interface Design

In figure 8 is the design of the message notification interface from job seekers for companies.

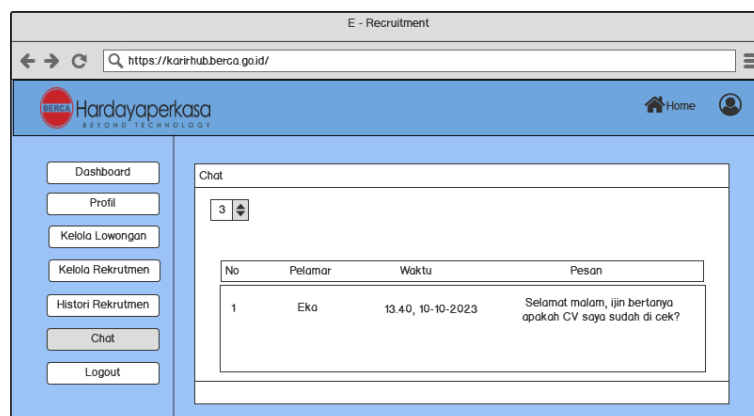


Figure 8. Chat

### Job Seeker Dashboard Interface Design

In Figure 9 is the dashboard interface design for job seekers.

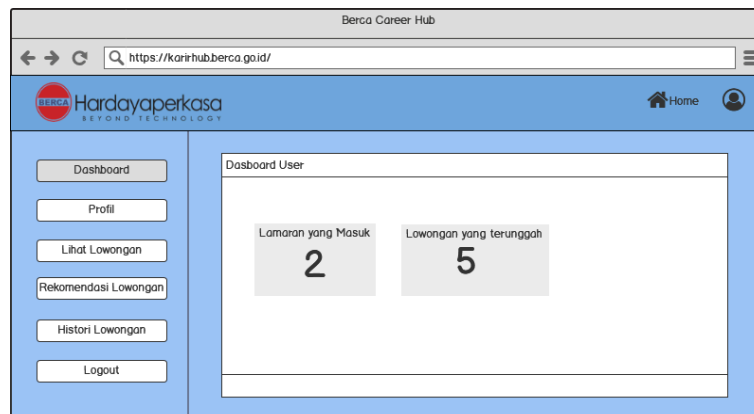


Figure 9. Job Seekers Dashboard

### Job Seeker Profile Interface Design

In figure 10 is the the profile interface design for the job seekers.

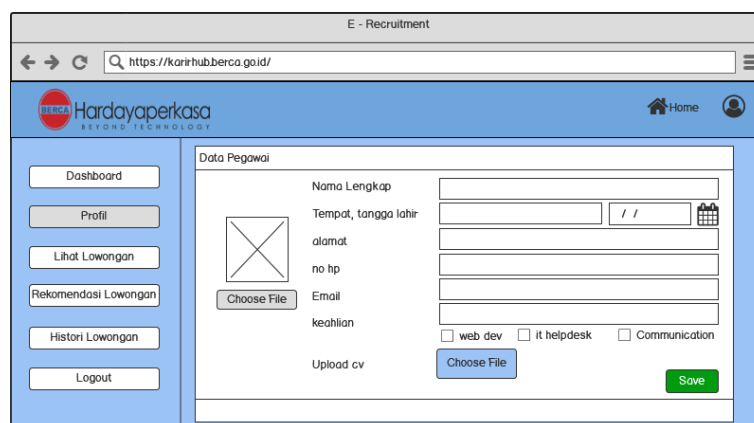


Figure 10. Job Seekers Profile

### Vacancies Interface Design

In Figure 11 is the interface design for viewing vacancies for job seeker users.



Figure 11. Available Vacancies

### Job Recommendation Interface Design

Figure 12 shows the interface design for viewing vacancy recommendations for job seeking users.

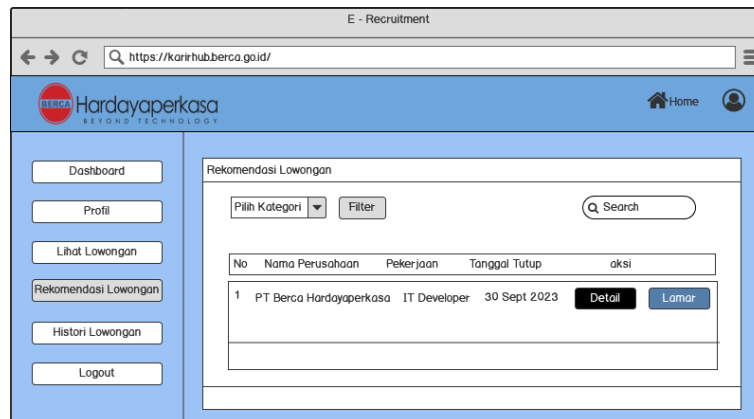


Figure 12. Vacancies Recommendation

### Application History Interface Design

In Figure 13 is the design of the application history interface for job seeker users.

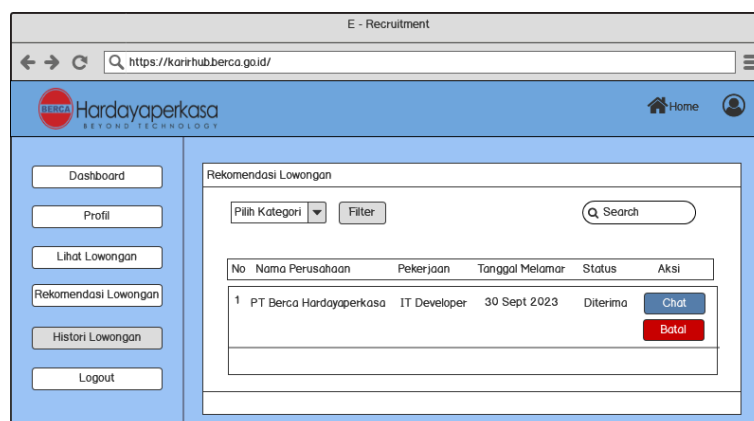


Figure 13. Application History

## 4. CONCLUSIONS AND RECOMMENDATIONS

The result of this research is the creation of a website-based e-recruitment application program at PT XYZ. This application can provide profile information and job vacancies to the general public so that the reach of applicants will be greater. Job seekers can apply for jobs through the application by registering first to create an account that will be used to log in when they want to apply for a job on the platform. Then, job seekers can continue by filling in one's personal data in detail, including their expertise, educational skills and work experience. Apart from that, this application also makes things easier for the Human Resources Development (HRD) team because it will save time and recruitment costs.

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## REFERENCE

- [1] Widhayani Puri S and Utama Wisnu W, “Analisis Faktor-Faktor Yang Berperan Dalam Pelaksanaan E-Recruitment Pada Pt.Cipta Aneka Selera,” *Maj. Ekon.*, vol. 25, no. 2, pp. 61–69, 2020, doi: 10.36456/majeko.vol25.no2.a2937
- [2] Taqwiym and N. Wijaya, “Perancangan Lowongan Kerja Online Berbasis Web Pada Pt Anh,” *J. Ilm. Inform.*, vol. 2, no. 1, pp. 112–116, 2017, doi: 10.35316/jimi.v2i1.461.
- [3] Thamrin, *Perancangan Manajemen Sumber Daya Manusia*, Yogyakarta : CV Budi Utama, 2014.
- [4] S. Wijaya, P. A. Nurdin, and D. Pibriana, “Rancang Bangun Sistem Informasi Kepegawaian Berbasis Web Pada CV Citra Pratama Global,” *J. Teknol. Sist. Inf.*, vol. 1, no. 2, pp. 168–179, 2020, doi: 10.35957/jtsi.v1i2.514.
- [5] H. Haryanto, M. F. Wahyutama, U. M. Damayanti, N. Natasyah, and A. Amelliani, “Perancangan Sistem Informasi Platform Pencarian Kerja Pada PT.Wira Karya Indonesia,” *ADI Bisnis Digit. Interdisiplin J.*, vol. 1, no. 2 Desember, pp. 46–59, 2020, doi: 10.34306/abdi.v1i2.218.
- [6] Karim, W. S. (2012). PEMROGRAMAN WEB II. [http://repository.ung.ac.id/categori/materi\\_kuliah/](http://repository.ung.ac.id/categori/materi_kuliah/)
- [7] Radanne, G. (2017). Tierless Web programming in ML.
- [8] Charzon. (2018). PENGERTIAN DAN FUNGSI DATABASE UNTUK PROGRAM DELPHI. <https://doi.org/10.31219/osf.io/z26fa>
- [9] Raymond Mc Leod, Jr., George P. Schell. *Sistem Informasi Manajemen*. Edisi 10<sup>th</sup> . Alih bahasa Jakarta : Salemba Empat, 2008.
- [10] Rival, Veithzal. *Manajemen Sumber Daya Manusia untuk Perusahaan dan Teori ke Praktik*, Jakarta : PT. Raja Grafindo Persada, 2004.
- [11] David Yoon Kin Tong. *E-recruitment Service Providers review International and Malaysia*, 2004. <https://www.emerald.com/insight/publication/issn/0142-5455>
- [12] R. S. Pressman, *Rekayasa Perangkat Lunak (Pendekatan Praktisi)*, Yogyakarta: Penerbit ANDI, 2012.