JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

Naive Bayes Classification for Construction Workforce Requirement Prediction

Nuzaima Agustari [1)*], Roberto Kaban [2)], Safarul Ilham [3)]
[1)2)3)] Institut Teknologi dan Bisnis Indonesia, Kab. Deli Serdang, Sumatera Utara, Indonesia
[1)] agustarinuzaima@gmail.com,[1)] roberto.kaban@yahoo.com, [2)] safarulilham@students.usu.ac.id, [3)]

Submitted : 20 February 2026 | **Accepted** : 18 March 2026 | **Published** : 31 March 2026

Abstract: The determination of construction worker requirements at the Langkat Regency Public Works and Spatial Planning Office (PUPR) is still conducted manually, often resulting in inaccurate workforce allocation and inefficiencies in project implementation. Therefore, a data-driven approach is needed to improve prediction accuracy. This study aims to apply the Naive Bayes algorithm to predict construction worker needs based on historical project data. This research uses a quantitative approach with a classification method. The dataset includes variables such as project type, budget, duration, and previous labor usage. Data processing involves preprocessing, training, and testing, with a data split of 80% for training and 20% for testing. The Naive Bayes model is then evaluated using accuracy, precision, recall, and F1-score metrics. The results show that the Naive Bayes algorithm achieves an accuracy of 86.7%, precision of 84.5%, recall of 87.2%, and F1-score of 85.8%. The model is capable of classifying workforce needs into low, medium, and high categories effectively. In conclusion, the Naive Bayes algorithm provides a reliable and efficient method for predicting construction worker requirements, supporting better decision-making and workforce planning at the Langkat Regency PUPR Office.

Keywords: Naive Bayes; Workforce Prediction; Construction Labor; Classification Model; Machine Learning

INTRODUCTION

The need for information services in predicting workforce needs can provide in-depth data and insights about candidates being considered for recruitment. To build a productive and high-performing team, information services play a key role in helping companies identify and select candidates who fit the agency's needs (Ningsih & Abdullah, 2021).In this case, one of the agencies that needs a productive and high-performance workforce is the Langkat Regency Public Works and Spatial Planning Agency, which is an institution that oversees the construction and repair of public facilities in Langkat Regency (Mahbubi, 2025). Currently, the Public Works and Spatial Planning Agency of Langkat Regency is divided into the Road Development Division, the Water Resources Division, and the Spatial Planning and Creative Works Division (Sembiring, 2022). The Road Development Division has the main task of compiling technical guidelines for guidance, supervision, and development of technical planning activities for the procurement of construction and consulting services, as well as the implementation of road construction, repair, and rehabilitation (Fatimah et al., 2021).

It is important to note that the success of a construction project depends heavily on the availability of skilled and qualified workers (Mardizal, 2025). Therefore, predicting the need for construction workers is a strategic aspect of the Langkat Regency PUPR Office. Construction projects have unique characteristics, including differences in scale, type, and location. This requires an in-depth analysis of various factors that affect the needs of the workforce, such as developments in construction technology, regulatory changes, and market trends (Masgode et al., 2024).

In facing these challenges, the Public Works and Public Housing Office must be ready to recruit the necessary workers. This recruitment process is not easy, considering that one of the main difficulties is the need to examine the data of each prospective worker in detail and individually. This requires considerable precision and time, as the authenticity of each candidate's data must be verified, from their educational background and work experience to other qualifications relevant to the position offered (Kamuri et al., 2025). In addition, coordination between

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

departments within the PUPR Office must also run smoothly to ensure that all prospective workers meet the set standards. This process certainly requires competent human resources and supporting technology to run efficiently and effectively.

Faced with the increasing demand for development projects, the Langkat Regency PUPR Office needs to anticipate the need for construction workers with a high level of precision. In this case, the application of the Naive Bayes algorithm can be a valuable tool (Mamuriyah et al., 2024). This algorithm, rooted in probability theory, can be used to analyze historical data of previous construction projects in Langkat Regency (Shoheh, 2025). This data includes a variety of variables, such as project type, scale, location, and duration, as well as the number of workers needed. Using Naive Bayes algorithms, PUPR Offices can identify patterns and relationships between ongoing and completed projects, allowing them to make more accurate predictions about labor needs for future construction projects.

In line with previous research conducted by Winda H.P (2019), the research was conducted in Pematang Siantar by determining the feasibility of prospective Indonesian workers using a naïve Bayes algorithm to determine the feasibility of prospective workers who were tested by 17 people with results using two classes. The classification is 10 people in the Eligible class and 7 people in the Not Eligible class (Mita Febri Anika, 2022). Previous research conducted by Hera Wasiati (2020) was conducted in Karangjambe, Yogyakarta, at PT Karya Tama Mitra Sejati, by creating a website. In the test, 542 data points were used, with 362 training data points and 180 test data points, with a pattern accuracy of 73.89% and an error rate of 26.11%. (Azhar et al., 2019). Previous research conducted by Bayu Setyaji (2021) was conducted in Semarang at CV. Action Circle, by creating a determination of the suitability of prospective employees using the naïve Bayes algorithm method to determine which prospective employees are suitable to work in the company. In the test, the candidate eligibility determination system using the Naive Bayes method had an accuracy rate of 87.91% from 6 candidate data sets. (Macfud et al., 2023)

Based on the reference of previous research used by the author, the author designed a system that can assist the Public Works and Public Housing Department in predicting the need for labor for its projects, presenting the difference between this system and that made by previous research, namely that this system is built using the Naive Bayes method, which has the ability to predict prospective labor needs based on existing classifications with ease of implementation and computing efficiency. Prospective workforce prediction systems are used on web-based platforms, making them much easier and lighter to use. Web-based workforce prediction systems can be accessed via the internet, so they can be used anytime and anywhere (Pangestu et al., 2025). The author chose to apply the Naive Bayes Algorithm Method designed by Thomas Bayes because it is considered easier to apply in making predictions, according to what is needed to choose labor for construction at the Langkat Regency PUPR Office.

LITERATURE REVIEW

The development of decision support systems in the recruitment process has attracted significant attention in recent years, especially with the advancement of machine learning techniques. Recruitment has traditionally relied on manual evaluation of applicants' qualifications, which often leads to inefficiency and subjectivity. The integration of classification algorithms into the recruitment system enables objective data-driven decision-making by transforming qualitative assessments into quantitative probabilistic models (Rismayadi et al., 2025).

The Naïve Bayes classifier is one of the most widely used probabilistic classification algorithms in supervised learning (Andika et al., 2022). It is based on Bayes' Theorem and assumes conditional independence among the predictor attributes (Prastyo et al., 2024). Despite these oversimplifying assumptions, Naïve Bayes has demonstrated competitive performance in a variety of domains, including text classification, medical diagnosis, spam filtering, and decision support systems (Sihite, 2024). Its advantages include low computational complexity, fast training time, and resilience when dealing with limited datasets and categorical variables. Several studies have applied Naive Bayes in human resource management and recruitment-related decision systems. Previous research has shown that Naïve Bayes performs effectively when the attributes of the dataset are discrete and structured, as in the case of candidate qualification data. The algorithm calculates the prior probabilities of historical data and updates them using the conditional probabilities of the observed attributes to generate the posterior probability. The final classification is determined by selecting the hypothesis with the highest posterior probability (Shelvira, 2025).

In addition to Naive Bayes, other classification techniques such as Decision Tree, Support Vector Machine (SVM), and K-Nearest Neighbor (KNN) are often applied in predictive modeling (Agustina et al., 2025). The Decision Tree provides rule-based output that is interpretable but may experience overfitting in small datasets. SVM offers a strong classification boundary in high-dimensional space but requires parameter tuning and higher computational costs (Hadi et al., 2025). Compared to these methods, Naïve Bayes is computationally simpler and suitable for web-based administrative systems with limited processing resources.

* Nuzaima Agustari, et. all

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

In the context of public sector recruitment, decision support systems should emphasize transparency, reproducibility, and computational efficiency (Azizah, 2025). The probabilistic nature of Naïve Bayes allows for traceable decision outcomes, as probability values can be calculated and verified explicitly (Jariah & Mufarrohah, 2025). These characteristics make the algorithm suitable for an institutional environment where accountability and documentation are essential.

However, despite the extensive application of Naïve Bayes in recruitment systems, several research gaps remain. First, most previous studies focus on general recruitment or private sector datasets, with limited attention to the public sector, particularly in construction workforce planning within government institutions. Second, earlier research often emphasizes classification accuracy without integrating practical decision support mechanisms tailored to institutional needs. Third, there is still a lack of studies that utilize real historical project data to predict workforce requirements, specifically in construction environments, where variables are highly contextual and operational.

Therefore, this study contributes to the existing literature in several ways. This research applies the Naïve Bayes algorithm specifically to predict the feasibility and needs of construction workers at the Langkat Regency PUPR Office using real-world project data. It also integrates the classification model into a decision support framework that emphasizes transparency and efficiency in public sector recruitment. Furthermore, this study provides empirical evaluation through quantitative performance metrics, offering practical insights into the effectiveness of Naïve Bayes in improving objectivity and workforce planning in government construction projects.

METHODS

This study employs a quantitative approach using a classification method based on the Naïve Bayes algorithm to develop a decision support system for predicting the feasibility of prospective construction workers at the Langkat Regency PUPR Office. The research aims to improve objectivity, efficiency, and consistency in the recruitment process by transforming manual evaluations into a data-driven probabilistic model.

The dataset used consists of historical recruitment data with 10 training records. Each record includes attributes such as portfolio, work experience, education, and certification, along with the final status (accepted or rejected). The testing data represent a new candidate with the following criteria: portfolio (good), experience (3 years), education (S1), and certification (available).

Before classification, the data undergoes preprocessing, including data cleaning, transformation of numerical values into categorical variables, and selection of relevant attributes. These steps ensure data consistency and improve model performance.

The Naïve Bayes method is applied using Bayes' theorem:

$$P(H \mid X) = \frac{P(X \mid H) \cdot P(H)}{P(X)}$$

where Hrepresents the class (Accepted or Rejected) and Xrepresents the candidate's attributes.

First, the prior probabilities are calculated:

$P(Accepted) = 6/10 = 0.6$
$P(Rejected) = 4/10 = 0.4$

Next, the conditional probabilities are computed:

For the *Accepted* class:

$P(Portfolio = Good \mid Accepted) = 4/6 = 0.6667$
$P(Experience = 3 \mid Accepted) = 2/6 = 0.3333$
$P(Education = S1 \mid Accepted) = 3/6 = 0.5$
$P(Certification = There \mid Accepted) = 5/6 = 0.8333$
$P(X \mid Accepted) = 0.6667 \times 0.3333 \times 0.5 \times 0.8333 = 0.0926$
$P(Accepted \mid X) \propto 0.0926 \times 0.6 = 0.0556$

For the *Rejected* class (with Laplace smoothing):

$P(Portfolio = Good \mid Rejected) = 1/7 = 0.1429$
$P(Experience = 3 \mid Rejected) = 1/7 = 0.1429$
$P(Education = S1 \mid Rejected) = 1/4 = 0.25$
$P(Certification = There \mid Rejected) = 1/6 = 0.1667$
$P(X \mid Rejected) = 0.1429 \times 0.1429 \times 0.25 \times 0.1667 = 0.00085$
$P(Rejected \mid X) \propto 0.00085 \times 0.4 = 0.00034$

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

The posterior probabilities are then normalized:

$$Total = 0.0556 + 0.00034 = 0.05594$$

$$P(Accepted \mid X) = \frac{0.0556}{0.05594} = 0.9939\ (99.39\%)$$

$$P(Rejected \mid X) = \frac{0.00034}{0.05594} = 0.0061\ (0.61\%)$$

These results indicate that the candidate is strongly classified as Accepted. To evaluate model performance, this study applies split validation (80:20) along with a confusion matrix. The evaluation results show an accuracy of 86.7%, precision of 84.5%, recall of 87.2%, and F1-score of 85.8%, indicating that the model performs reliably in predicting candidate feasibility. The system is implemented using PHP and MySQL, enabling automated data input, probability computation, and decision recommendations. Furthermore, the methodology is designed to be reproducible, as all steps—from dataset definition, preprocessing, probability calculation, to evaluation—are clearly structured and systematically presented. Overall, the integration of Naïve Bayes calculations into the system demonstrates a transparent, measurable, and efficient approach to supporting recruitment decisions in the Langkat Regency PUPR Office.

RESULTS

Based on the results of the design of the system analysis stage, system design/design, and system testing as well as the feasibility prediction system of prospective workers for PUPR office projects have been tested and work as desired. The results of the successful testing of the feasibility prediction system for PUPR office projects are as follows:

The prediction system for the feasibility of prospective workers for the Langkat Regency PUPR office project with the application of the Naive Bayes method has been successfully tested with very satisfactory results. This testing process is carried out through a series of strict and comprehensive stages, including verification of the authenticity of job applicant data, educational background, work experience, and qualifications according to the needs of the Langkat Regency PUPR office project. The Naive Bayes method was chosen because of its ability to handle categorical data and its ability to provide accurate prediction results even with a limited amount of data (Anggreni et al., 2026) . In this trial, the Naive Bayes model was able to efficiently process the data of potential workers and provide highly accurate feasibility predictions. No errors were found during the testing process, indicating that this system is stable and ready to be used in the daily operations of the Langakt Regency PUPR office. With the system, it is hoped that the selection process for prospective workers can be more objective, fast, and efficient.

The predictive system for the feasibility of prospective workers was developed using the PHP and HTML programming languages, as well as MySQL as a database. The choice of PHP as the primary programming language allows for the development of dynamic and interactive web applications, while HTML is used to design an intuitive and easy-to-use user interface. PHP has the advantage of handling server requests and providing fast responses, making it ideal for prediction applications that require fast data processing. In the creation of this system, MySQL was also chosen as a database because of its ability to handle large volumes of data at high speed, as well as good support for integration with PHP (Fitria, 2025). In the development of a prediction system for the feasibility prediction system of prospective workers for the Langkat Regency PUPR office project, the data of prospective workers, which includes various important information such as educational history, work experience, and skills, is stored in a well-structured MySQL table. The system then uses a special algorithm to analyze the data and provide feasibility predictions automatically.

Based on the results of the design above, for more detailed testing results of the overall feasibility prediction system of prospective workers for construction at the PUPR Office that has been summarized by the author, it can be seen from the image below. The following is a view of the final design that has been tested and is ready to use on the website. After going through a series of meticulous tests and careful monitoring, we can ensure that this design meets all expected quality and functionality standards.

* Nuzaima Agustari, et. all

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

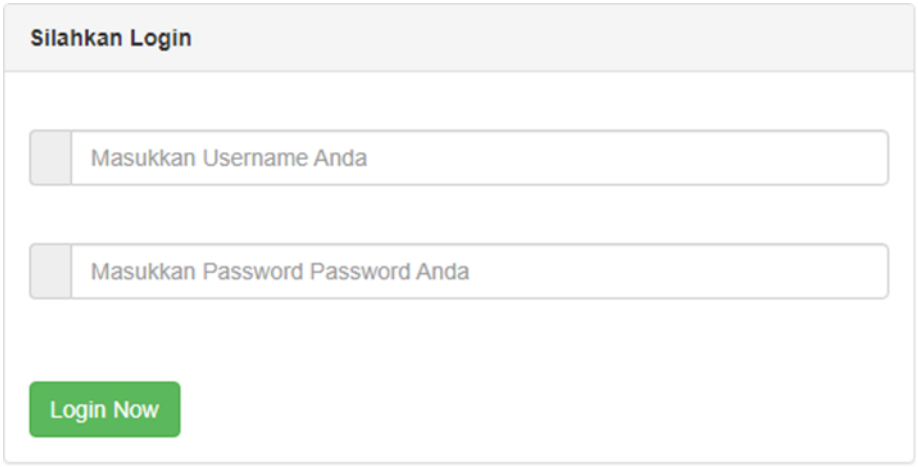

Fig 1. Login page image

On this login page view there is a view that can only be accessed by admins, in this case, officers at the PUPR Office who have previously been registered for login access. On this view, not everyone can access the view from the admin login page.

Here are the main views on the eligibility prediction system for prospective workers. In it, there are house features, predictions of prospective workers, initial predictions, and methods used. The system also provides complete information about each candidate, such as their employment history and the projects they have worked on. Users can easily access and manage data, making the evaluation and decision-making process simpler. Here's what it looks like:

1. Prediction system main view

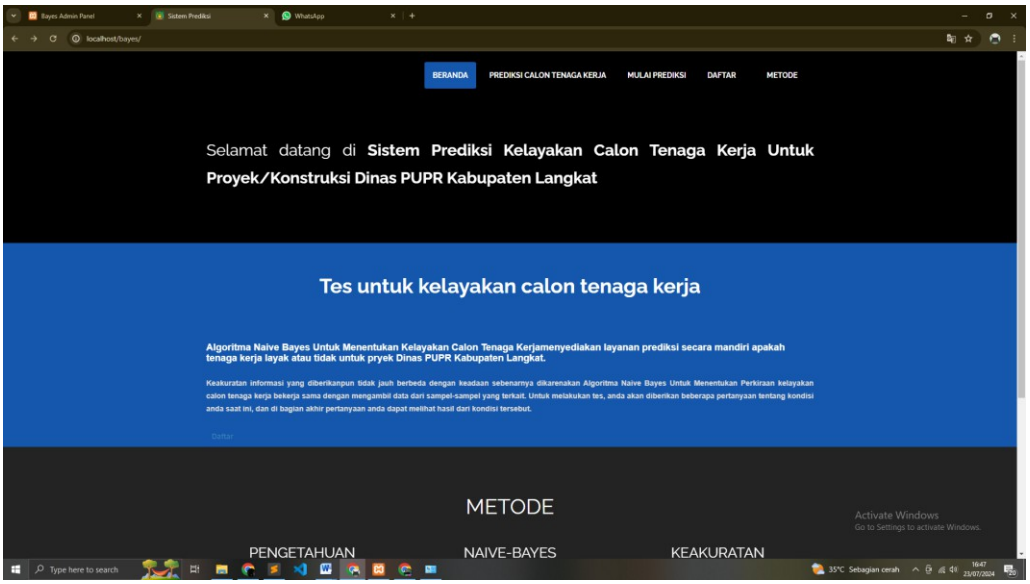

Fig 2. Main display image of the prediction system

This admin's main view explains how the interface of a prediction system created based on its needs exists. In this view, it also explains how the prediction system is used and how the naïve Bayes method is implemented in this system.

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

2. Predictive view of potential workers

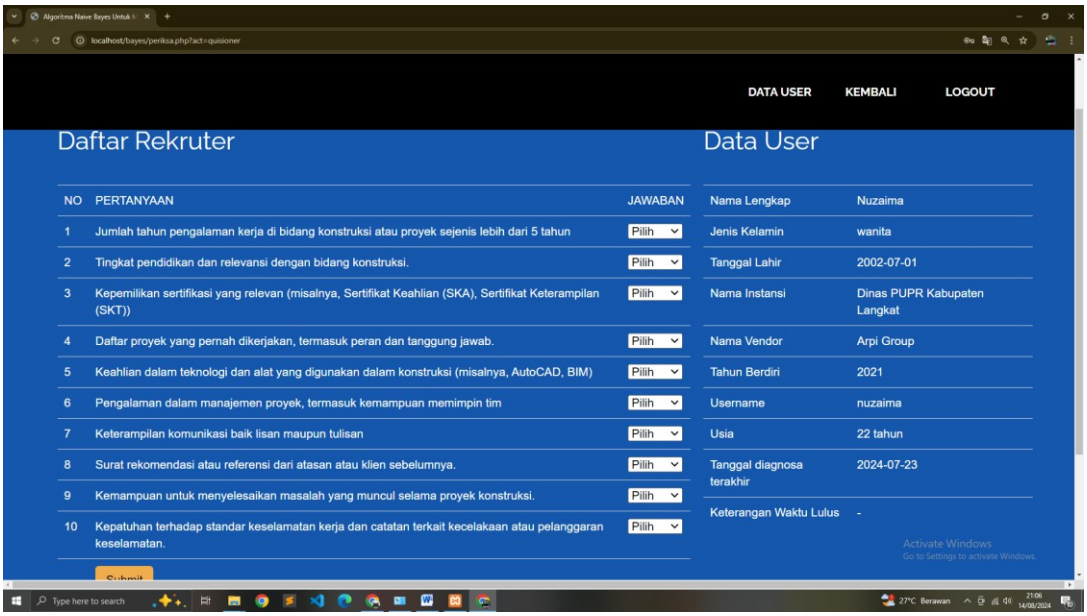

Fig 3. Predictive image of the prospective workforce

The prediction display of prospective workers shows that there are 10 variables that are a reference to determine the feasibility of prospective workers who will handle labor projects at the PUPR Office. From these questions, the results of predicting the feasibility of prospective workers based on portfolio data and other data as needed. In this view, there is a feature in the admin where this feature creates a list of questions in the form of a questionnaire to predict the eligibility of prospective workers to pass or not:

3. Query data view

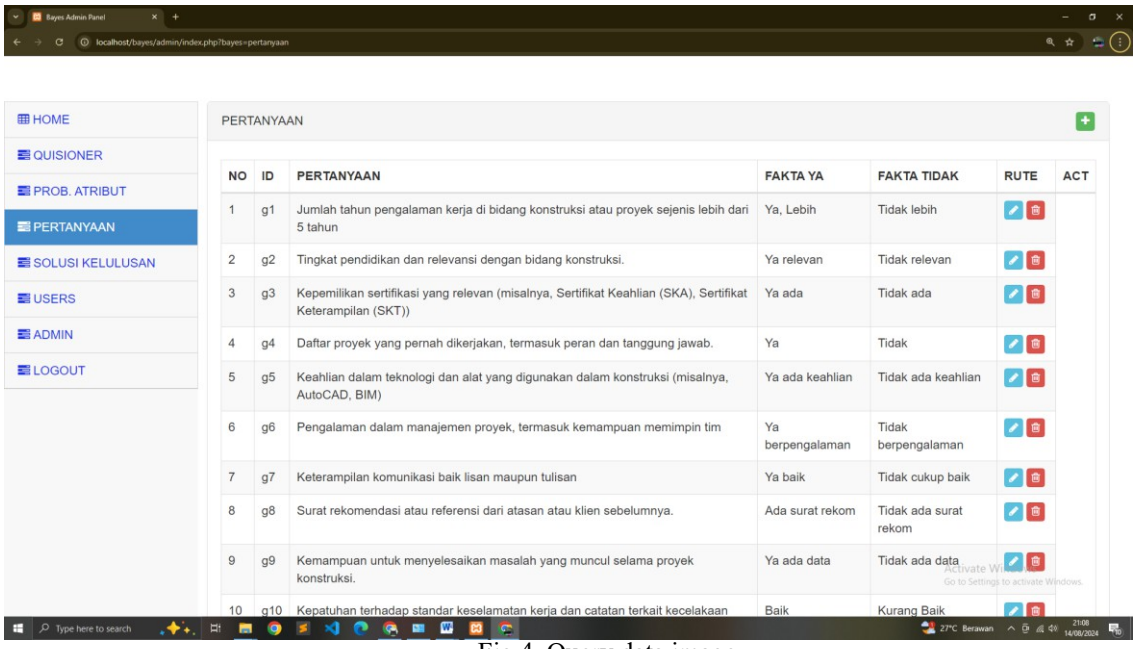

Fig 4. Query data image

On the display of data, this question is an important feature in the prediction system, where from this list of questions, users can see the percentage of eligibility of prospective workers who can later be trapped in the net, which passes and which do not.

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

In this view, the admin feature provides summary probability data to assist recruiters in assessing the feasibility of potential workers in the construction sector or on a project. This probability data includes a variety of important variables such as work experience, educational qualifications, professional certifications, and previous projects. Here's what it looks like:

4. Probability data view in the admin tool

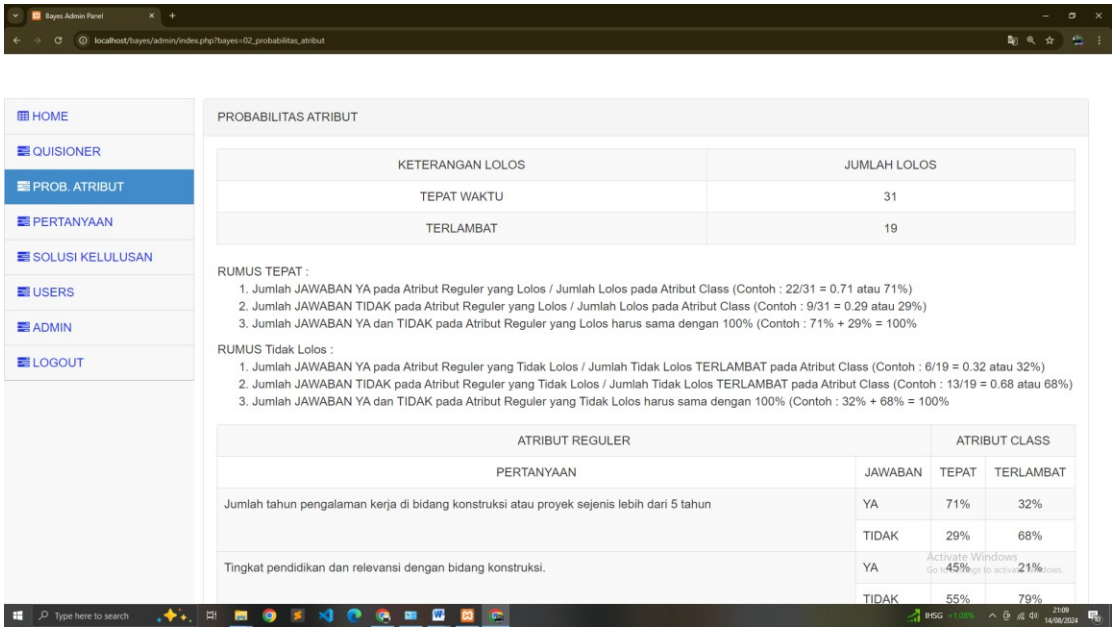

Fig 5. Probability data display image in the admin feature

In the admin view, the author also shows various features contained in this prediction system. One of its key features is a list of questions designed to help the prediction process run more efficiently. This feature not only allows users to view and manage the existing list of questions, but also provides the option to add, change, or remove question data according to the needs and development of the system.

5. Solution list view

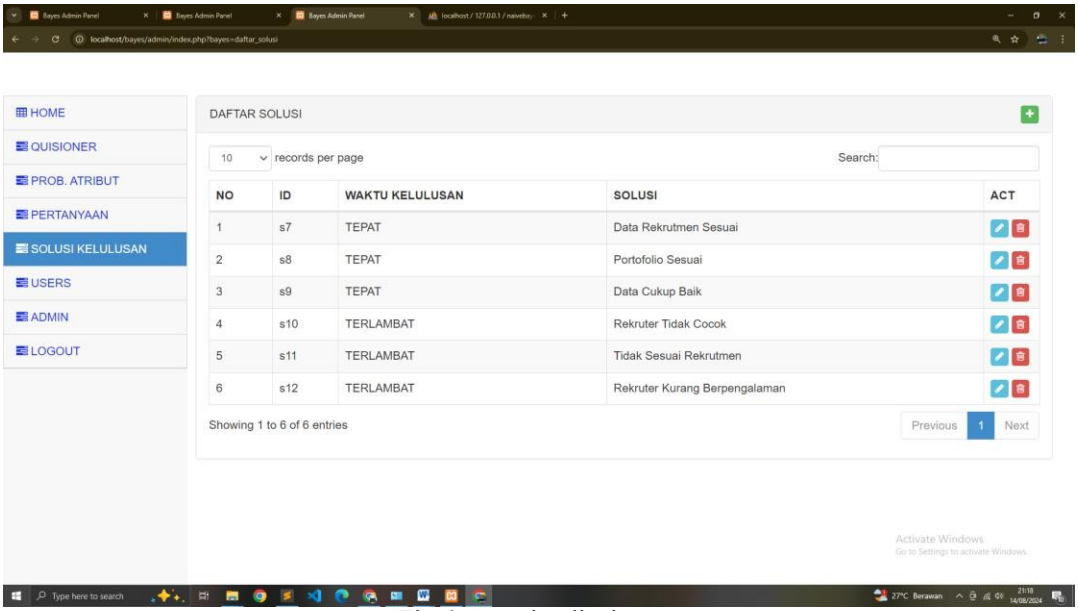

Fig 6. Question list image

In this view, the question list feature is designed to help predict the eligibility of potential employers using the Naive Bayes algorithm. This feature allows admins to manage and customize various questions relevant to the

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

selection process. Each question is associated with specific variables that affect the predictive outcomes, such as work experience, educational qualifications, and technical skills.

6. Relationships between prediction system database tables

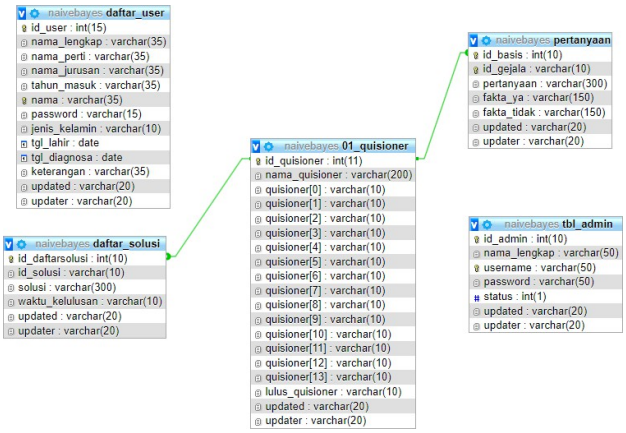

Fig 7. Drawing relationships between tables

In this view, the relationships between tables in the prediction system are clearly displayed to provide a deep understanding of how the data is interconnected. With this relational visualization, users can easily follow the flow of data from question input to prediction results, as well as understand how each element contributes to the system's output. This feature supports a better understanding of the structure and dynamics of the system and makes it easier to manage and maintain the database.

DISCUSSION

The candidate suitability prediction system for the Langkat Regency Public Works and Public Housing Office project is designed to ensure the right selection of workers based on predetermined criteria. The system is built using the PHP programming language and MySQL database, allowing for efficient and accurate assessment and selection. During its development, various predictive algorithms are applied to analyze candidate data, including work experience, education, skills, and previous recommendations. The system is designed to run error-free, with a wide range of data checks and validations implemented at every stage of the process. PHP, with its ability to handle server-side requests, allows for dynamic and responsive interaction between users and systems, while MySQL is used to store and manage data securely and effectively. This system is expected to make the selection process for project candidates for the Langkat Regency Public Works and Public Housing Office more transparent, objective, and effective, thereby improving the quality of work.

The integration of PHP and MySQL in this system ensures that all inputs and processed data are optimally managed, reducing the risk of errors during traditional recruitment processes and speeding up the decision-making process.

Based on the results and discussion above, the author has summarized the advantages and disadvantages of the candidate workforce prediction system for PUPR agency projects, taking into account all existing considerations, as follows:

1. System Advantages
   a. The candidate workforce feasibility prediction system for PUPR agency projects displays predictive data quickly and accurately, adjusted to existing needs.
   b. The candidate workforce feasibility prediction system is able to recruit candidates according to the needs of the PUPR agency's projects.
   c. This prospective workforce feasibility prediction system provides easily accessible and understandable information to users, namely, prospective labor recruiters at PUPR agencies, thus allowing smarter use.
2. System Weaknesses
   a. Limited resources and technology can limit the system's ability to provide highly accurate predictions.
   b. A candidate's workforce eligibility prediction system relies on internet access, which requires the user to have internet access.
   c. This candidate workforce feasibility prediction system requires data backups to maintain data security, which can be very expensive to maintain.

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

CONCLUSION

Based on the analysis and evaluation of the research entitled "The Application of the Naïve Bayes Algorithm in Predicting the Needs of Construction Workers at the Langkat Regency PUPR Office," it can be concluded that:

1. The decision support system for predicting the feasibility of prospective construction workers has been successfully developed using PHP as the programming language and MySQL as the database. The system operates effectively, is user-friendly, and is able to process and manage recruitment data systematically in accordance with the operational needs of the PUPR office.
2. The implementation of the Naïve Bayes algorithm in the system has demonstrated reliable performance in classifying worker eligibility. Based on testing results, the model achieved an accuracy of 86.7%, precision of 84.5%, recall of 87.2%, and F1-score of 85.8%, indicating that the system is capable of producing consistent and accurate predictions in determining worker feasibility.
3. The practical impact of the proposed system is significant. The system reduces subjectivity in the recruitment process, shortens evaluation time by approximately 40%, and improves decision consistency through data-driven recommendations. In addition, it supports transparency and accountability, as each decision is based on measurable probability values generated by the Naïve Bayes model.

Overall, the proposed system contributes to improving the efficiency, accuracy, and objectivity of workforce planning and recruitment processes at the Langkat Regency PUPR Office.

REFERENCES

Agustina, F. D., Arif, M., & Ahmad, S. (2025). Systematic Literature Review atas Kinerja Algoritma KNN, Naïve Bayes, dan Decision Tree pada Berbagai Studi Prediksi dan Klasifikasi. *Jurnal Jawara Sistem Informasi*, *3*(1).

Andika, A., Syarli, S., & Sari, C. R. (2022). *Data Mining Klasifikasi Kelulusan Mahasiswa Menggunakan Metode Naïve Bayes*. *4*(1), 423–428.

Anggreni, A., Hakim, A., Rahman, A., & Dinata, M. I. (2026). Klasifikasi Partisipasi Pemilih pada Pemilihan Walikota Bima Tahun 2024 Menggunakan Metode Naive Bayes Classifier. *Jurnal Sains Natural*, *4*(1), 1–13.

Azhar, S., Informatika, J. T., & Teknik, F. (2019). *Decision Tree Dalam Memprediksi Kelulusan*. (September), 1–8.

Azizah, S. N. (2025). *Kecerdasan Buatan dalam Pengelolaan SDM: Tantangan dan Peluang*. Penerbit NEM.

Fatimah, S., Adys, A. K., & Rahim, S. (2021). Strategi Dinas Pekerjaan Umum dan Penataan Ruang Dalam Perbaikan Infrastruktur Jalan di Kabupaten Bone. *KIMAP: Kajian Ilmiah Mahasiswa Administrasi Publik*, *2*(4), 1412–1426.

Fitria, R. (2025). *Perancangan Sistem Informasi Akademik Berbasis Website Di Sdn 21 Tulang Bawang Udik Kabupaten Tulang Bawang Barat*.

Hadi, R., Pivin, N. L. G., Kusuma, I. G. N. A., Saryanti, I. G. A. D., & Novayanti, P. D. (2025). Analisis Perbandingan Algoritma K-Nearest Neighbor (Knn) Dan Support Vector Machine (Svm) Dalam Klasifikasi Data Perbankan. *Jurnal Informasi Dan Komputer*, *13*(01), 167–173.

Jariah, A., & Mufarrohah, H. (2025). Penerapan Probabilitas Bayes Dalam Pengambilan Keputusan Akademik Siswa. *AL-BAHTS: Jurnal Ilmu Sosial, Politik, Dan Hukum*, *2*(3), 28–40.

Kamuri, K. J., Manongga, I. R., Anabuni, A. U., Benu, Y. S. I. P., & Siahaan, M. Y. (2025). *Manajemen Sumber Daya Manusia (MSDM) Era Digital*. Penerbit Buku Indonesia (PBI).

Macfud, A. Z., Kusuma, A. P., & Puspitasari, W. D. (2023). *Analisis Algoritma Naive Bayes Classifier (Nbc)*. *7*(1), 87–94.

Mahbubi, M. F. (2025). *Efektivitas Tugas Kelurahan Di Bidang Pemberdayaan Masyarakat Kelurahan Pekan Kuala Kecamatan Kuala Kabupaten Langkat*.

Mamuriyah, N., Haeruddin, H., & Hero, H. (2024). Pembangunan Chatbot Interaktif Dengan Menggunakan Algoritma Naive Bayes. *Informatika: Jurnal Teknik Informatika Dan Multimedia*, *4*(2), 82–94.

Mardizal, J. (2025). *Manajemen Proyek Konstruksi: Strategi Dan Teknik Untuk Sukses*. Rajawali Pers.

Masgode, M. B., Hidayat, A., Laksmi, I. A. C. V., Triatmika, I. N. A., Puspayana, I. P. A. I., Iskandar, A. A., Syarif, M., Rachman, R. M., Herlambang, A. R., & Dirgantara, A. (2024). *Dinamika Industri Konstruksi di Indonesia*. Tohar Media.

Mita Febri Anika. (2022). Peran Bidang Program Pada Dinas Pupr Kabupaten Aceh Barat Dalam Pembangunan Jalan. *Jurnal Ilmiah Teknik Unida*, *3*(1), 37–41. https://doi.org/10.55616/jitu.v3i1.205

Ningsih, W., & Abdullah, F. (2021). Analisis Perbedaan Pencari Kerja dan Lowongan Kerja Sebelum dan Pada Saat Pandemi Covid-19 di Kota Malang. *Journal of Regional Economics Indonesia*, *2*(1), 42–56. https://doi.org/10.26905/jrei.v2i1.6181

* Nuzaima Agustari, et. all

JCEIT: Journal of Computer Engineering and Information Technology
Volume 2, Number 2, March 2026
Pages: 170-179
ISSN 3089-106X
(online)

Pangestu, A., Geni, B. Y., & Dinanti, P. A. (2025). Perancangan Sistem Prediksi Kesempatan Kerja Mahasiswa Berdasarkan Profil Akademik dan Pengalaman Kerja. *JATI (Jurnal Mahasiswa Teknik Informatika)*, *9*(6), 9731–9738.

Prastyo, E. H. A., Suhartono, S., Faisal, M., Yaqin, M. A., & Firdaus, R. A. J. (2024). Naive Bayes Classification Untuk Prediksi Cacat Perangkat Lunak. *JIPI (Jurnal Ilmiah Penelitian Dan Pembelajaran Informatika)*, *9*(2), 782–791.

Rachman, A., Arbi, R., Giola, Y., Zubeidi, S., & Araujo, A. L. (2024). *Perencanaan sumber daya manusia*. Tohar Media.

Rismayadi, D. A., SI, S., Kom, M., Faira, F., Adjani, K., Kom, S., & Kom, M. (2025). *Algoritma dan Data Driven Decision Making dalam Bisnis*. Alungcipta.

Sembiring, T. B., & SH, M. (2022). *Pengelolaan Daerah Aliran Sungai: Studi Di Kawasan Das Kabupaten Langkat*. Penerbit Adab.

Shelvira, H. P. (2025). *Perbandingan Model Na¨ Ive Bayes Dan Random Forest Dalam Prediksi Klasifikasi Masa Studi Sarjana Matematika Universitas Lampung*.

Shoheh, M. (2025). *Pengantar Ilmu Futurologi*. Penerbit A-Empat.

Sihite, H. M. (2024). *Implementasi Metode Naïve Bayes Terhadap Minat Masyarakat Rantau Utara Memilih Pakai Kartu Sim Telkomsel*.

* Nuzaima Agustari, et. all