KEMENTERIAN PENDIDIKAN, KEBUDAYAAN
RISET, DAN TEKNOLOGI
UNIVERSITAS DIPONEGORO
FAKULTAS SAINS DAN MATEMATIKA

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# UJIAN TENGAH SEMESTER GASAL 2023/2024

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|---|---|---|
| Mata Kuliah | : | Metodologi dan Penulisan Ilmiah |
| Kelas | : | A, B, C, D |
| Pengampu | : | Dr. Retno Kusumaningrum, S.Si, M.Kom./ Prajanto Wahyu Adi, S.Kom., M.Kom. |
| Departemen/Program Studi | : | Ilmu Komputer / Informatika |
| Hari/Tanggal | : | Jum'at, 5 April 2024 |
| Jam/Ruang | : | 10:00 - 11:40 WIB (100 menit) / A303 |
| Sifat Ujian | : | Buku Tertutup |

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| Capaian Pembelajaran Lulusan (CPL) | **CPL-P02:**<br>Mampu menerapkan dan menunjukkan nilai, norma, etika akademik, prinsip keberagaman pendapat dan budaya, serta kepedulian sosial dalam berkolaborasi.<br>**CPL-P06:**<br>Mampu menerapkan pemikiran analitis berbasis data untuk memformulasikan penyelesaian permasalahan kompleks untuk suatu organisasi<br>**CPL-P08:**<br>Mampu menerapkan pemikiran logis, kritis, sistematis, dan inovatif dalam mengkaji implikasi pengembangan hasil riset bidang Informatika terkini sebagai educator pembelajar sepanjang hayat |
| Capaian Pembelajaran Mata Kuliah (CPMK)<br><br>dan Sub-CPMK | **CPMK02-1:**<br>Mampu menerapkan dan menunjukkan nilai, norma, dan etika akademik<br>**Sub CPMK02-1:**<br>1. Mampu menerapkan (A2) dan menunjukkan (A3) ketaatan terhadap nilai, norma, dan etika akademik dalam menghasilkan rancangan penelitian bidang Informatika dalam bentuk proposal penelitian maupun luaran hasil penelitian bidang Informatika dalam bentuk artikel ilmiah, poster ilmiah dan presentasi ilmiah.<br>2. Menjelaskan (C2) definisi dan jenis *research misconduct* serta mengimplementasikan (C3) teknik-teknik untuk menghindari plagiarisme dalam penyusunan artikel ilmiah.<br>**CPMK06-2:**<br>Mampu memformulasikan penyelesaian permasalahan kompleks<br>**Sub CMPK06-2:**<br>1. Mampu menghasilkan (C3) rancangan penelitian dalam bentuk proposal penelitian sebagai solusi atas permasalahan kompleks di bidang Informatika<br>2. Mampu menghasilkan (C3) luaran hasil penelitian berupa solusi atas permasalahan kompleks di bidang Informatika ke dalam bentuk artikel ilmiah, poster penelitian, dan presentasi ilmiah.<br>**CPMK08-1:**<br>Mampu menerapkan pemikiran logis, kritis, dan inovatif dalam mengkaji implikasi pengembangan hasil riset bidang Informatika terkini<br>**Sub CPMK08-1:**<br>1. Mampu menjelaskan (C2) berbagai macam konsep dasar dan tahapan riset dengan benar |

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| | 2. Mampu memilih (C1) sumber pustaka yang sahih dan berm dalam proses *literature review* dan mendemonstrasikan (C3) hasil *literature review* yang telah dilakukan ke dalam berbagai bentuk representasi serta mengorganisasikan sumber pustaka yang dipilih menggunakan *reference manager tool*<br>3. Mampu menjelaskan (C2) konsep metodologi riset dan tipe-tipe metode riset.<br>4. Mampu menjelaskan (C2) pengertian data dan variabel, jenis data dan variabel, serta memahami validitas dan reliabilitas<br>5. Mampu menjelaskan (C2) definisi penelitian kuantitatif dan kualitatif, karakteristiknya serta penerapannya pada penelitian kuantitatif dan kuantitatif |

**Petunjuk Pengerjaan Soal:**
Jawablah soal-soal berikut pada lembar jawab yang telah disediakan

1. **[CPMK08-1 (1)** bobot 20%] Sebuah penelitian harus memenuhi 3 aspek utama. Sebutkan dan jelaskan ketiga aspek tersebut disertai contoh!
2. **[CPMK08-1 (2)** bobot 30%] Terdapat dua jenis artikel ilmiah, yakni *research article* dan *review article*.
   a. Jelaskan perbedaan diantara keduanya!
   b. Jelaskan bagaimana strategi/cara untuk me-*review* kedua jenis artikel tersebut!
3. **[CPMK02-1 (2) dan CPMK08-1 (2)** bobot 30%] Perhatikan 4 (empat) buah potongan artikel berikut ini dan buatlah paragraf/kalimat untuk mendemonstrasikan sebuah proses literature review terhadap topik terkait untuk **2 kategori** *(compare, contrast, criticize, synthesize)*!

   **(Catatan:** tuliskan kategori yang dipilih beserta sitasinya menggunakan teknik APA untuk menunjukkan sumber referensi serta dituliskan dalam Bahasa Indonesia)

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| Service Quality: A Measure of Information Systems Effectiveness<br>Journal: MIS Quarterly<br>Author: Leland F. Pitt, Richard T. Watson, and C. Bruce Kavan<br>Year: 1995<br>Vol. 19, Issue 2<br>Page. 173-187 | The IS function now includes a significant service component. However, commonly used measures of IS effectiveness focus on the products, rather than the services, of the IS function. Thus, there is the danger that IS researchers will mismeasure IS effectiveness if they do not include in their assessment package a measure of IS service quality. SERVQUAL, an instrument developed by marketing researchers, is offered as a possible measure of IS service quality. SERVQUAL measures service dimensions of tangibles, reliability, responsiveness, assurance, and empathy. The suitability of SERVQUAL was assessed in three different types of organizations in three countries. After examination of content validity, reliability, convergent validity, nomological validity, and discriminant validity, the study concludes that SERVQUAL is an appropriate instrument for researchers seeking a measure of IS service quality |
| Is user satisfaction a valid measure of system effectiveness?<br>Journal: Information & Management<br>Author: Amy W. Gatian<br>Year: 1994<br>Vol. 26, Issue 3 | User satisfaction (US) is often used as a surrogate measure of information system effectiveness. If an effective system is defined as one that adds value to the firm, then an effective system must have some positive influence on user behavior (i.e., improve productivity, decision making, etc.). Advocates of US argue that there is theoretical support for linking attitudes (i.e., satisfaction) and behavior in the psychology literature. At the same time, there is evidence of increasing employment of US questionnaires in firms as a measure of system effectiveness. Yet there is surprisingly little information systems research linking user satisfaction with user behavior. In this study, measures of user satisfaction and system affected behavior are taken for an indirect and a direct |

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| Page: 119–131 | user group of the same information system in 39 organizations. Results indicate that a relationship does exist between satisfaction and behavior for both user groups. |
| Word2Vec for Indonesian Sentiment Analysis towards Hotel Reviews: An Evaluation Study<br>Proceeding: The 4th International Conference on Computer Science and Computational Intelligence 2019<br>Author: Rizka Putri Nawangsari, Retno Kusumaningrum, Adi Wibowo<br>Page: 728-735 | There are several conducted studies of sentiment analysis tasks for the Indonesian language, such as sentiment analysis towards movie reviews, tweets of social media twitter, sales reviews of the marketplace, hotel reviews, etc. Most of those studies implement the baseline shallow learning methods such as MaxEnt (Maximum Entropy) [2,3], Naive Bayes [2,3,4,5], and Support Vector Machine (SVM) [2,6]. Furthermore, those studies generally employ hand-crafted features such as word occurrence, word presence, TF-IDF, sentiment lexicon, etc. The performance of many studies which implement combination between shallow learning methods and hand-crafted features commonly depends on the selected of data representation or features. In other words, the performance of shallow learning methods depends on the success of hand-crafted features. It is caused by an inability of shallow learning methods to extract and organize discriminative information from data. Therefore, the implementation of shallow learning methods always requires feature engineering process. Unfortunately, feature engineering process has several drawbacks, i.e. (i) It is labor-intensive, (ii) It highly-cost to obtain the preferred accuracy since it needs manual pre-processing, e.g. POS tagging and stemming, that is time-consuming and challenging task. |
| Sentiment Analysis using Word2Vec and Long Short-Term Memory (LSTM) for Indonesian Hotel Reviews<br>*Proceeding: The 5th International Conference on Computer Science and Computational Intelligence 2020*<br>*Author: Putra Fissabil Muhammad, Retno Kusumaningrum, Adi Wibowo*<br>Page: 728-735 | The classical machine learning methods have a problem wherein it is difficult to determine in the feature extraction what to be included in the given model. If features are missing or incomplete, the model will generate imperfect outcomes. If there are too many features and if all of them do not contribute to the output of the model, this model will not give optimal performance. Nonetheless, it has been found that this problem can be overcome by using CNN (Convolutional Neural Network) since it is a deep learning technique that uses the neural network framework where every layer obtains input from the preceding layer and is delivered to the subsequent layer. Nonetheless, CNN also has the drawback that it cannot work with long sequential data. It is because CNN does not possess a memory, so it cannot retain information about the word meaning. This drawback can be overcome by using the LSTM (Long-Short Term Memory) model. LSTM is a kind of RNN (Recurrent Neural Network) architecture which is designed to "retain" values that have been obtained before for a specific period. LSTM consists of 3 gates that regulate the flow, which are the input gate, forget gate, as well as output gate. The input gate regulates the input of new data into memory, the forget gate regulates how long particular values get stored in memory, and the output gate regulates how much the value retained in memory influences the output block activation [9]. |

4. **[CPMK08-1 (1)** bobot 10%] Jelaskan yang dimaksud dengan experimental research!
5. **[CPMK06-2 (1)** bobot 10%] Jelaskan bagaimana sebaiknya abstrak sebuah proposal penelitian dibuat!