National University of Computer and Emerging Sciences, Lahore Campus

Course:	Technical and Business Writing	**Course Code:**	SS 2007
Program:	BS CS/DS/SE	**Semester:**	Fall 2023
Duration:	3 Hours	**Total Marks:**	70
Paper Date:	20th December-2023	**Weight:**	50%
Section:	ALL		
Exam:	Final		

Instructions: Attempt all questions on the answer sheet.

Q1. Write an Informal Report on the given task:

The educational institution, Global Learning Academy, is experiencing a decline in student engagement and satisfaction with its remote (online) learning programs, which have been a regular part of their program of BS Computer Engineering since after 2020. The issues possible include the technological, pedagogical (teaching methodology), and communication aspects. As a Manager Computer Science Department, you need to address potential challenges in implementing changes to the remote learning model, and additionally, provide solutions and recommendations for the given problem.

Write an Informal Memo Report and identify the key factors or problems contributing to this decline. Discuss the problem(s) in detail. You may also write about a plan for faculty training and student support.

[20]

Q2. Write the concluding paragraph of the following business letter.
(Word limit 60-70words)

[5]

December 15, 2023

Emily Turner
Chief Executive Officer
Green Energy Dynamics
456 Industry Street
Townsville, State 67890

Dear Mr. Johnson:

I hope this letter finds you well. My name is John Anderson, and I am the Vice President of Strategic Partnerships at Nebula Solutions, a forefront leader in sustainable technology solutions with headquarters at 456 GreenTech Street in EcoCity.

In response to our admiration for Stellar Innovations' exceptional achievements in the sustainable energy sector, we are writing to express our interest in exploring potential collaboration opportunities. Nebula Solutions specializes in eco-friendly technology solutions and sustainable infrastructure development, providing cutting-edge products that contribute to environmental conservation. We firmly believe that our tailored solutions, aligned with the pioneering work of Stellar Innovations, can complement your goals seamlessly and contribute to mutual success.

Q3. Write a Job Application/Cover letter to the HR Manager, Sohail Ahmed at ARBISOFT Lahore, responding to the job advertisement, given below:

[15]

Follow the ABC format of a Cover Letter. You may fictionalize some part of the information about your degree program and other experiences not yet acquired. This way, the job letter reflects the background you would have if you were applying for the job.

We're HIRING JOB openings

Arbisoft is a custom software development company, and a chosen engineering partner for market leaders all over the world in a variety of verticals.

Post	Key Responsibilities	Qualification
Software Engineer	• Design, develop, test, and deploy scalable software applications. • Implement and maintain CI/CD pipelines using tools like Jenkins. • Develop and integrate services using Spring and WSO2. • Work with front-end technologies such as Angular and React to create responsive and interactive user interfaces. • Utilize Spring Framework for the development of robust back-end systems. • Ensure adherence to Agile methodologies and continuous improvement processes.	• Bachelor's or Master's degree in CS • Over 4+ years of experience • Expertise in Computer Science, Back-End Web Development, and Software Development. • Proficiency in programming languages such as Java, C++, or Python. • Demonstrated experience with DevOps practices and tools, particularly in CI/CD and Jenkins. • Proficiency in using WSO2 for service integration (Optional) • Strong problem-solving, analytical and effective communication skills. • Experience with Agile development methodologies.
Data Scientist	• Perform statistical inference on large data sets to inform decisions and drive actions. • Drill down on results (problem-solving analysis) and conduct custom analysis. • Build predictive models to optimize agent and customer interactions • Collaborate and communicate with data analytics, and cross-functional teams on a task basis. • Adapt theoretical concepts and standardized techniques to real-world problems • Working at a stretch in EST hours as per client requirements (starting work post midday till midnight). • Opportunity to lead production activities on deployed accounts, or execute on deployment plan.	• Bachelors or Masters in Computer Science, Mathematics, Economics, Physics, Engineering or related quantitative field. • 2-3 years of working experience in relevant field. • Programming experience in one or more of the following languages i.e. R/Python/ Julia/SQL. • Experience with statistics, machine learning, linear programming, or mathematical optimization, both practical and theoretical • Strong attention to details. • Ability to document and explain cutting-edge techniques to other team members • Comfort working in a collaborative environment with cross-team communication to bring projects into production • Familiarity with Bayesian statistics, hierarchical modeling, MCMC algorithms, latent factor models
Programmer	• Organizing and ensuring the quality and timely delivery of product releases within defined scope and budget • Serving as the technical leader for GFI's engineering team, making critical decisions on software implementation • Coaching the C++ software engineers on both hard and soft skills, fostering professional growth and team cohesion	• 5+ years of professional experience in C++ development • 2+ years of experience in either the network communications or security domain • Demonstrated experience in leadership and mentoring • A grasp of AI, Large Language Models (LLMs), and prompt engineering, including Chain-of-Thought (CoT) prompting and Self-Consistency in CoT

Send your applications to HR Manager, ARBISOFT
25 Canal Rd, Westwood Colony
Lahore, Punjab
www.arbisoft.com
Phone: (042) 37498533
LAST DATE: 27th December 2023

DAWN
14th December 2023

Read the case study and answer the questions that follow: [10]

A. Ali is preparing for an important interview at Textiles Ltd, a large textile manufacturing company based in Lahore. He applied for a marketing manager role. This case study provides an overview of Textiles Ltd, details about the role Ali applied for, expected interview format and questions, and tips for Ali to improve his interview performance.

More About Ali:

- Ali is a 28 year old who recently completed his Master's degree in Marketing. He has 3 years of experience working as an Assistant Brand Manager at a consumer goods company.
- He is personable, ambitious, and looking to take on more responsibility in marketing to continue advancing his career. Landing the marketing manager role at a respected company like Textiles Ltd would be a great opportunity.
- Ali has had success launching and managing marketing campaigns part-time during his degree. He received strong performance reviews at his current company but was seeking a role with more growth potential and leadership components.

More About the Interview Process:

- After the initial phone screening, Ali has been selected to attend a face-to-face interview. This will take place at Textiles Ltd's headquarters.
- Ali discovers the panel will include: Ravi Kumar (Marketing Director), Ayesha Abid (Sales Manager), and Imran Bashir (HR Business Partner)
- In addition to competency-based questions about Ali's skills and experience, he will deliver a 10 minute presentation on expanding exports to new markets followed by Q&A from panel.

Questions:

1. What research should Ali do you before the interview? Mention any 2 types with ezamples.
2. What tips do you have for making a strong first impression and building rapport with an interviewer? How do you balance professionalism with showing personality?

Q5. Read the case study and answer the questions that follow: [10]

Michael, a computer science student, is embarking on a research project to explore user experiences in software development. In determining the most effective method to collect primary and secondary data, he faces the challenge of maintaining originality and avoiding plagiarism. Michael is also curious about the best practices for collecting data in the realm of computer science research. Additionally, he is contemplating whether he should opt for quantitative or qualitative data for his research project.

Questions:

1. Which are the possible sources of data for Michael to collect for his computer science research project focused on user experiences in software development?
2. How can Michael collect quantitative data rather than qualitative data for his computer science research on user experiences in software development? Explain with examples.

Q5. Read the Report given below and write an ABSTRACT for a Formal Report. [10]

Evaluation of Data-Driven Learning in University Teaching: A project report

Sandra Götz and Joybrato Mukherjee Justus Liebig University, Giessen

Introduction

The concept of Data-Driven Learning (DDL) has been at the heart of applied corpus linguistics right from the beginning of using corpus data and concordances in foreign language teaching (cf. Chambers 2005: 1). There seems to be general agreement on the point that learners benefit from DDL activities to a very large extent because they are enabled to inductively discover patterns and routines in the foreign language. However, the applied corpus linguist's enthusiasm about DDL activities is strangely at odds with the reluctance of many teachers and learners to actually make use of DDL-based learning techniques (cf. e.g. Mukherjee 2004). It is thus necessary to test and evaluate the usefulness of DDL activities from the learner's perspective under real-time conditions.

Literature Review

Data-driven Learning (DDL)

2.1 The role of DDL in foreign language learning

One of the most fundamental ideas of DDL is to change the role of the learner – from a passive consumer of the teacher's output into an autonomous researcher (cf. Bernadini 2004: 16ff., Gavioli 2001: 110ff.). In this way, learners are to discover facts about the target language in authentic contexts by using corpora and concordance programmes: "This supports learning, partly because students are motivated to remember what they have worked to find out" (Hunston 2002: 170). But DDL not only

makes inductive learning possible, but also enhances deductive learning, as "learners apply previously-acquired generalizations in order to classify concordance data, testing the 'rules' they have learned, and thereby consolidating and/or refining their knowledge" (Aston 2001: 19-21).

2.2 DDL Activities in the Study

In our case study, the students worked on nine different mini-projects from different areas in which DDL methods can be used. The first project was about concordancing in literary text-analysis as described by Aston (2001).2 Usually, when working with literary texts the focus is on text-analysis and text interpretation. What should be noted here is that concordancing in text analysis is not a new didactic method. It is the computerised concordancer (or any other text-analysis software) which enables the learner to find the relevant information faster and more easily. Using a computer programme can lead not only to a rise in motivation, but also to a more exhaustive list of results.

3. Methodology

The case study While previous research in applied corpus linguistics tended to focus on the different subject areas in which DDL activities can be realised in the classroom, our focus was on finding out more about whether or not learners subscribe to the euphoric view of corpus linguists concerning the benefits of DDL to their learning process. By focusing on learners' evaluations of various DDL activities, we also wanted to learn more about caveats and pitfalls of DDL methods from the learners' point of view in order to make suggestions as to how to improve DDL activities and gear them towards learners' needs.

3.2 Evaluation methods

For our study, we chose a participant-oriented approach, that is to say, the focus is on the participants and on their interests and needs (cf. Schneider 2003: 255). In the course of the project, the following data were used: questionnaires handed out before and after the project phase, our own monitoring of the students during the project phase and the students' project-reports, which they had to write after the project phase. The questionnaires handed out before the project phase were designed to collect information about the students (i.e. course of study, number of semesters, sex, age, previous experience with DDL, interest in DDL, interest in the different projects, general familiarity with computers in private contexts) in order to sketch out a student typology and to gain an initial insight into general tendencies of interest and motivation. The questionnaire handed out after the project phase included questions on the students' previous experience with DDL in general and in their projects, on the project phase in the seminar as such (e.g. how they evaluated the introduction, the instructions, whether or not they liked their project), and on their own assessment concerning an increase in their knowledge, their interest in DDL and the benefits of DDL in general. For all these questions, the students were asked to give reasons for their opinions.

4. Results

Students assessed the usefulness of DDL by giving grades from 1 ("extremely useful) to 6 ("not at all useful"). As Table 3 shows, 79% of the students rated DDL as "extremely useful", "very useful" or "useful", whereas only 21% rated DDL as "not very useful" or "not useful". Nobody rated DDL as "not at all useful ". So the majority of students consider DDL to be beneficial at an average rating of 2.76. If we compare the students' self-evaluations before and after the project phase, we find not only an increase in knowledge about DDL, but also a greater interest in DDL and a higher degree of willingness to work with DDL (see Figure 2). Thus, involving students with DDL activities can achieve a greater interest and motivation on the part of the learners.

Table 3: *Students' assessment of the benefits of DDL*

extremely useful	very useful	useful	not very useful	not useful	not at all useful
9%	43%	27%	6%	15%	0%

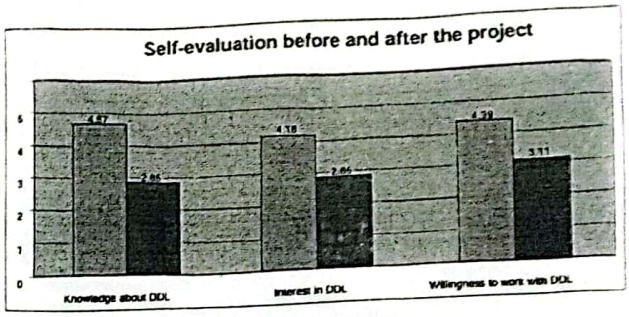

Figure 2: *Students' assessments before and after the project*

While Figure 2 indicates a very welcome development in the course of the project phase, we also noted that the majority of our students did not believe that they had actually profited from DDL in their own learner language, i.e. at the content-level of language learning.

Conclusion

Given the relative small number of participants, our data could not yield any statistically significant results. Still some general tendencies can be derived from our findings. First and foremost, the majority of students found working with DDL interesting, productive and motivating. We do think that one future research need is the specification of what corpus literacy should include. If DDL activities are to be included in the English language curriculum, it is essential to identify the analytical and methodological competencies that learners need to acquire when working with – and learning from – corpora.