

American International University-Bangladesh (AIUB)

**Department of Computer Science**

**Faculty of Science & Technology (FST)**

**Research Methodology**

**Assignment**

Submitted By

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| **Semester: Summer\_22\_23 FINAL TERM** | | | **Section:** | **Group No:** |
| SN | Student Name | Student ID | Individual  Contribution (in %) | Total Marks: 45 |
| Earned Marks: |
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Submission Date:

**The assignment will be Evaluated for the following Course Outcomes**

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| CO1: Determine and Demonstrate Ethical Constraints and Considerations in conducting Research. | Total Marks (15) | |
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| **Plagiarism:** Report should be totally plagiarism free (e.g., *Word-for-word copying, Unacknowledged multiple authors or collaboration, The use of a particularly unique term or concept without acknowledging the original author or source*) | [5 Marks] |  |
| **False Data:** Research data should not be fabricated or altered intentionally to fit into the predetermined research findings. | [5 Marks] |  |
| **Citation and referencing:** Material should be properly cited and referenced if it is taken from other sources. And should not be attributed to a source from which it has not been obtained *(i.e., false citation)* | [5 Marks] |  |

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| CO2: Formulate and Compose a Research proposal considering complex research activities, background studies, and following standard guidelines. | Total Marks (15) | |
|  | |
| **Problem Analysis and Literature Review:** Background information of the research area and definition of the key research terms. Existence research within the problem area (other’s work). The comprehensiveness, correctness, and discussion of the related works in relation to the topic and as a background motivation for the study. | [5 Marks] |  |
| **Research Objective and Contribution:** Research aim relation with the problem area within existence research. Formulation of Motivation and Research Question. Impact on the society and make a difference | [5 Marks] |  |
| **Formatting and Submission:** Research article should be following the appropriate Structure, Style, Font size, Alignment, Grammar, Spelling, etc. | [5 Marks] |  |

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| CO3: Design and compose a Research article after conducting mock research on a given topic by leveraging a research method. | Total Marks (15) | |
|  | |
| **Abstract and Keywords:** The relevance, completeness, and conciseness of the abstract and keywords in relation to the research topic. | [5 Marks] |  |
| **Research Method:** Discussion on the research method, its appropriateness and detail on data collection, analysis, and synthesis. | [5 Marks] |  |
| **Result Analysis & Conclusion:** Discussion the research finding and argument on the novelty of the results, Limitation, and future studies. | [5 Marks] |  |

Write Your Manuscript Title Here

Author’s Name  
Department of Computer Science  
American International University – Bangladesh  
author’s email address

**Abstract**

* Your article must include an abstract, consisting of **100-150 words**, which provides readers with an overview of the content of your article.
* It is important that your abstract clearly states the purpose of your article, data analyzing methods, and summarizes the research finding/content with its usefulness to various communities (e.g., you may write: this paper/article discusses/investigates……using SLR/Interview/Survey. The primary findings are……which would be helpful for…. OR the purpose of this research….)

**Keywords:** Word One, Word Two, Word Three

* Please include a list of 5-10 keywords that figure prominently in your article. These words should include important vocabulary, names of people, and names of organizations, primarily.
* These terms will be included to generate the index for the book. Please do not include words that are part of the book title or article title. Each word should be capitalized.

INTRODUCTION

* After reading the introduction, the reader should be aware of why this paper is worth reading.
* Provide broad definitions and discussions of the topic and incorporate views of others (literature review) into the discussion to support, refute, or demonstrate your position on the topic.

**Problem Background**

* Background information of the research area and definition of key research terms.
* Clearly state what is the real problem in the research domain and why this problem is important to consider. Add some references to support the texts.
* How is this problem background related to your RQs?

**Related Studies**

To demonstrate the novelty of your research, discuss the existing research within the problem area (other’s work). Who else has studied this problem? And what were their findings? How are these studies related to the problem domain? What is the research gap still existing to consider?

**Research Objectives**

* Research motivation and aims in relation to the problem area within existence research.
* Research Question (RQs can be one or two).

**Research Contributions**

How your research will be contributed to society and make a difference? Who is the audience of your research? What is your contribution to them? Who can use your proposed solutions and get benefits in which way?

* Paper Organization plan (Optional part)

methodology

Elaborate the data collection/analysis method and tools completely and accurately with diagrams, making analysis easy to reproduce. Describe how the selected methods/tools are highly appropriate for this type of research and are directly linked to the purpose and research questions. Provide a description of why you select interview/survey/literature review instead of other available data collection techniques with some strong arguments.

**For Systematic Literature Review (SLR):**

* Discuss what databases you have searched for to find relevant literature.
* What were your searching keywords using AND OR Boolean logic?
* Discuss How did you search literature using forward/backward/author’s citation index techniques?
* What was the number of literatures you’ve initially selected?
* What are the inclusion and exclusion criteria you’ve followed to finalize your literature selection?
* How did you analyze the final selected literature to extract data to answer your research question?

**For Interview/Survey:**

* Explain how did you generate interview/survey questions?
* What are the questions you’ve asked in interview/survey?
* How did you conduct an interview or survey?
* Who are the respondents to answer your questions?
* What is the total number of respondents?
* How did you select them?
* How did you analyze the data to present your findings?

results and analysis

**Research Data/Results**

* Discuss the results of your research based on the data you have collected from SLR/Interview/Survey and answer your research question/research objective. You need to establish a direct connection between your proposed solutions with the research objective (RQs) based on your research data.
* Demonstrate and visualize your proposed solutions in various diagrams describing the process of your solutions.
* Integrates alternate and divergent ideas or processes to solve the problem mentioned in the introduction section.

**Analysis and Discussion**

* Provide a description of how you plan to test/verify your proposed solution. And what is the results of your test/verification.
* Provide a description of the accuracy of your research findings. This can be done by:
* Comparing your research findings with the results of other existing published studies
* Using some mathematical formula to prove your findings are logically consistent.
* Applying your findings to the real-world case or simulation software tools

Conclusion

Provide discussion of the overall coverage of the article and concluding remarks.

* Define the project/thesis objective again considering the existing problems and challenges.
* Discuss your data collection/data analysis process in providing solutions.
* Discuss the thesis/project solutions and with any significant remarks.
* Discuss the limitations of your work where the next researcher can start. Provide a description of the **limitations of your study** and how the **future researcher** can extend your study further.

**ACKNOWLEDGMENT (Optional)**

Any acknowledgment to fellow researchers, funding grants, and conflicts of interest should be placed within this section. Funding agency and conflicts of interest statements are now required in all journal article submissions based on information we have received from the indices.

**Funding Agency (Optional)**

All journal articles are required to have funding information at the end of their articles. Articles that are being published under the traditional, subscription-based model in Hybrid Open Access journals could provide funding information if an outside source funded their ability to do their research but did not fund open access publishing. If the authors have received no funding for their article, please see below under the “No Funding Information” heading.

**REFERENCES**

Use a single referencing style (e.g., APA) to provide references to citations you have used in the article.

Appendix (Optional)

Appendices are at the end of the manuscript and, if more than one, numbered with numerals. Any Figure or Table numbering should continue from article body. If Figure or Tables are not called out and explained within the article, please provide prior to its placement within the Appendix.

**Paragraph Text Format:**

* Style: Times New Roman
* Size: 12
* Space: 1.0
* Text Alignment: Justify
* Paragraph Alignment: left indent, one line gap between paragraphs
* Keep one line gap before and after the heading and sub-heading.
* Assignment Length: Maximum 8 pages (including cover page, evaluation, and reference)
* Provide figure/table number and title of the figure/table and refer this figure/table number in the text.
* Do not use first or second person (I, me, my, we, us, our, you…). Instead use “this article” or “the authors”.