In recent years, the field of education has witnessed a significant shift towards the integration of technology, particularly in the assessment design. One area where this integration has gained significant attention is the use of generative AI in assessment tasks. Generative AI refers to computer algorithms that can generate new content or responses based on a set of input data. The integration of generative AI in assessment tasks provides various benefits such as efficient grading, increased objectivity, and reduced bias in the assessment. However, the use of generative AI in assessment tasks poses several challenges, especially in the areas of academic integrity. (Almond, 2002 #1; Gorin, 2006 #2; Van den Berg, 2006 #3; Villarroel, 2018 #4; Fergus, 2023 #5; Geerling, 2023 #6; Yeadon, 2023 #7; Benuyenah, 2023 #8; Kooli, 2023 #9)

Academic integrity is a critical aspect of education that ensures students maintain high ethical standards in their academic work {Emenike, 2023 #10; Fergus, 2023 #5}. Plagiarism, the act of presenting someone else's work as one's own, is a significant concern in academic integrity, as it undermines the credibility and reliability of assessment results {Bretag, 2019 #11}. The use of generative AI in assessment design can facilitate plagiarism, as students can easily use AI-generated content to cheat on assignments {Crawford, 2023 #12}. This issue poses a significant challenge to educators, who must ensure that assessment tasks are designed to promote academic integrity while also taking advantage of the benefits of generative AI {Crawford, 2023 #12}.

This paper addresses the challenges associated with the integration of generative AI in assessment design, specifically in the context of take-home assignments in software-related courses {Gilson, 2023 #13}. The researchers propose a framework that provides guidelines for designing assessment tasks that incorporate generative AI, while also promoting academic integrity {Perkins, 2023 #14}. The proposed framework offers a practical and flexible approach for educators seeking to integrate generative AI into their assessment design process {Fergus, 2023 #5}.

The paper is organized as follows: Section 2 provides a brief overview of the related work in the area of generative AI and assessment design. Section 3 describes our research approach for designing take-home assignments that incorporate generative AI. Section 4 presents findings that demonstrate the application of the proposed framework in the context of software-related courses. Finally, Section 5 concludes the paper and provides directions for future research in the area of generative AI and assessment design.

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| **Course name** | **Programs** | **Year** | **Topics** |
| Advanced Programming Techniques | BSE (British Standards Institution) | Keep it simple. | Keep it simple. |
| Enterprise Application Development | BSE (British Standards Institution) | Keep it simple. | Keep it in a phrase: HTML and Javascript. |
| Object-Oriented Programming | Keep it brief. | Keep it simple. | Keep it simple, stupid. |