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OPTIMIZATION OF THE INTERFACE DESIGN PROCESS USING AUTO LAYOUT TECHNOLOGY IN THE FIGMA ENVIRONMENT

Currently, the UI/UX design industry is gradually transforming from static design to the development of flexible design systems. The relevance of optimizing interface design through the implementation of Auto Layout technology is driven by the need to adopt a systemic approach and the principles of atomic design, where each element is considered part of a coherent hierarchical structure [2].

The purpose of this study is to define an approach for optimizing user interface design under conditions of constantly changing requirements and content. Specifically, the work aims to address the problem of high labor intensity in manual layout adjustments and to bridge the technical gap between visual design and programmatic implementation. Today, as content is constantly updated and devices have various screen sizes, creating static designs becomes a barrier to rapid product scaling. Using Auto Layout technology, designers can create "smart" layers where elements resize based on the volume of internal content. This helps maintain order throughout the project and significantly simplifies the workflow [3].

Various contradictions arise during the interface design process that slow down product development. The first problem is that a designer's layout often looks correct only until real data is inserted. Consequently, designers spend a significant amount of time adjusting buttons or product cards when text becomes longer. This creates a risk of setting incorrect margins and grids [1]. Another issue is the discrepancy between the design solution and its technical implementation. Conventional grouping of elements in Figma has nothing in common with layout (coding) principles, which forces developers to independently interpret layouts and can lead to errors in element placement [4].

Two approaches to working in Figma can be compared: conventional grouping of elements and the use of Auto Layout technology. In conventional groups, each element remains in a static position; therefore, removing an object leaves an empty space. In contrast, the Auto Layout function rearranges elements based on the principles of dynamic flow and relative positioning of objects within a container. This means that when the size of an element changes, or when a component is added or removed, all adjacent elements are automatically repositioned while preserving predefined spacing parameters and alignment logic. Such an approach transforms a static set of layers into an adaptive system, which, in turn, reduces the need for the designer to perform mechanical actions manually and minimizes the risk of composition errors. The designer can specify direction (horizontal, vertical) and set precise spacing between elements. Thus, the need to move everything manually is eliminated [3]. Another vital feature is automatic resizing: the "Hug contents" mode adjusts the frame to fit the text, while "Fill container" causes an element to expand to the full available width. This logic is identical to how real websites function according to Flexbox principles, making it much easier for developers to work with such layouts [4].

The use of Auto Layout fundamentally changes the design methodology by introducing a systemic approach to interface development. Process optimization is achieved by minimizing the number of routine mechanical actions and reducing the cognitive load on the designer, as the focus shifts from creating individual pages to building a coherent design system. Due to hierarchy (the "small to large" principle), individual components are integrated into subsystems that can be reused multiple times. This enables a much faster response to changing requirements, as any modifications made to a single base element are automatically applied to all parts of the project where it is utilized. The main advantages of this approach are high quality and iteration speed, although it also has certain limitations, such as the complexity of the initial configuration of nested structures. However, these challenges can be mitigated through logical layer naming and clear component structuring [2].

In conclusion, the study demonstrates that the implementation of Auto Layout technology serves as a key tool for achieving the stated objective of optimizing interface design under conditions of constantly changing content and requirements. It enables the transformation of a layout into a dynamic system in which the automatic enforcement of layout rules effectively eliminates human error in spacing and ensures the technical accuracy of the interface during handoff to developers. Despite the need to invest more time initially to configure component logic, this approach significantly accelerates subsequent maintenance and product scaling. Further research will focus on a more detailed examination of methods for the full automation of complex adaptive grid creation based on advanced Auto Layout properties [1][3].

REFERENCES

1. Lunar D. Everything you need to know about Figma Auto Layout / D. Lunar // Medium. – 2024. – URL: https://medium.com/@lunarDesigner/everything-you-need-to-know-about-figma-auto-layout-9d6e49050f64.
2. Frost B. Atomic Design / B. Frost. – 2023. – URL: https://atomicdesign.bradfrost.com/table-of-contents/.
3. Guide to auto layout // Figma Help Center. – 2024. – URL: https://help.figma.com/hc/en-us/articles/360040451373-Guide-to-auto-layout.
4. Integrating Flexbox principles with Figma Auto Layout // Pros Ascend. – 2023. – URL: https://pros.com/ascend/integrating-flexbox-principles-with-figma-auto-layout/.