CodeJr : Comprehensive Programming Application for Children

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Abstract

Since the beginning of the millennium, computer technology has been the key area of concern and developing essential programming knowledge and intellectual skills from the young age have proven that they will gain more success in their careers. The ideology behind this research is, the problem with absence of a complete multi-disciplinary and interactive programming application for children between the age of 10 - 15 years, to learn programming concepts with a well- established text-based programming language. There are 4 major approaches in this research. Gamification approach focuses on expressing knowledge about Python programming via a game while concentrating on low performers. Collaborative approach aims to deliver a brand-new experience for children by aggregating cooperative methodologies and Artificial Intelligence with learning to enforce mutual learning. This component is based on collaborative sessions which allow a group of students with similar interest to join together to learn python programming. Drag-drop approach enables children to learn Python language through videos and will be given basic practice questions after finishing the course. Story telling approach guides children to learn programming concepts step by step using story telling. Focused on storytelling approach and interactivity via voice conversation to learn programming language for children.

Keywords

Python, Programming, Collaborative, Gamification, Storytelling, Text-Based Programming, Children, E-Learning, Artificial Intelligence.