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Project DEAL
Digitally Enhanced hAndwriting Learning

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1. Introduction and Motivation

- Handwriting remains an essential life skill for all ages yet with pressures on teachers' time, the emphasis on taught handwriting is on the decline.
- Current classroom approaches are heavily dependent upon learners receiving regular validation from the teacher.
- Technology could ease teachers' pressure through providing learners with real-time feedback thereby promoting independent learning.
- Project DEAL explored the possibility of a futurist pen which could provide visual real-time feedback through developing a proof-of-concept system.

2. The Problem

3. Selected Technologies

MyScript.

Windows 10

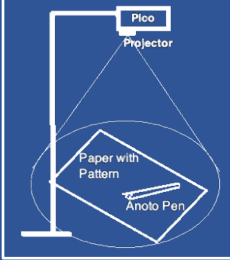
Java8

ANOTO

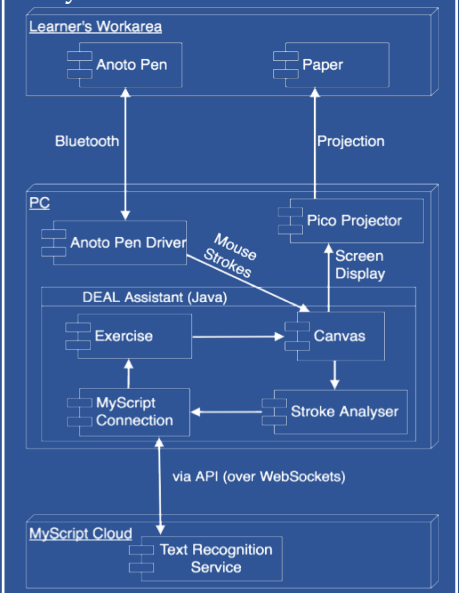
4. Design and Implementation

- *Exercises* powered learning experience.
- *Canvas* captured strokes powering projectable GUI.
- *MyScriptConnection* recognised strokes.
- *Stroke Analyser* divided strokes into words.
- *Learner's Workarea* gathered written strokes and projected visual feedback.
- *PC* provided business logic and connectivity.
- *MyScript Cloud* enabled system to understand the learner's strokes.

6. Learner's Work Area

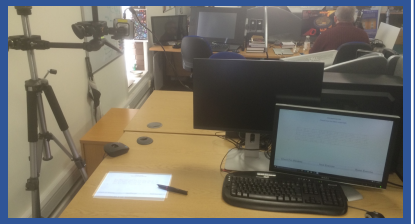


5. System Architecture



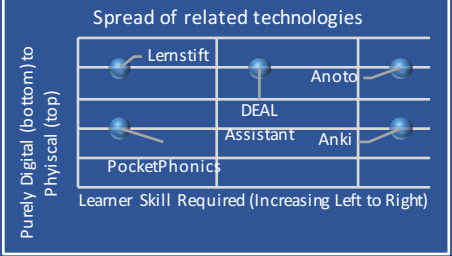
7. Demo System and Testing Case Study

- System was developed with component reuse in mind in order in order to lay the ground work for further research.
- Three different types of handwriting exercises were created to demonstrate the flexible nature of the developed framework.



8. Evaluation

- Objectives Met:
  P1, P2, P3, S1, S2, S3, T1, T2
- DEAL Assistant was placed top centrally relative to related technologies:



9. Conclusion and Future Works

- Developed a strong understanding of Web Sockets.
- Overcame difficulty of dividing strokes into words.
- Created a flexible framework for exercises creation.
- Code reuse was promoted through comprehensive documentation and following good coding practices.
- Expanded System could implement Leitner system. Exploiting memory spacing through regularly reviewing difficult words at increasing time intervals.
- Further data aggregation would enable deeper insights into individual and group trends.
- Progress tracking to third parties such as teachers.