Challenge2Code: Encouraging first-year computer-science students to program
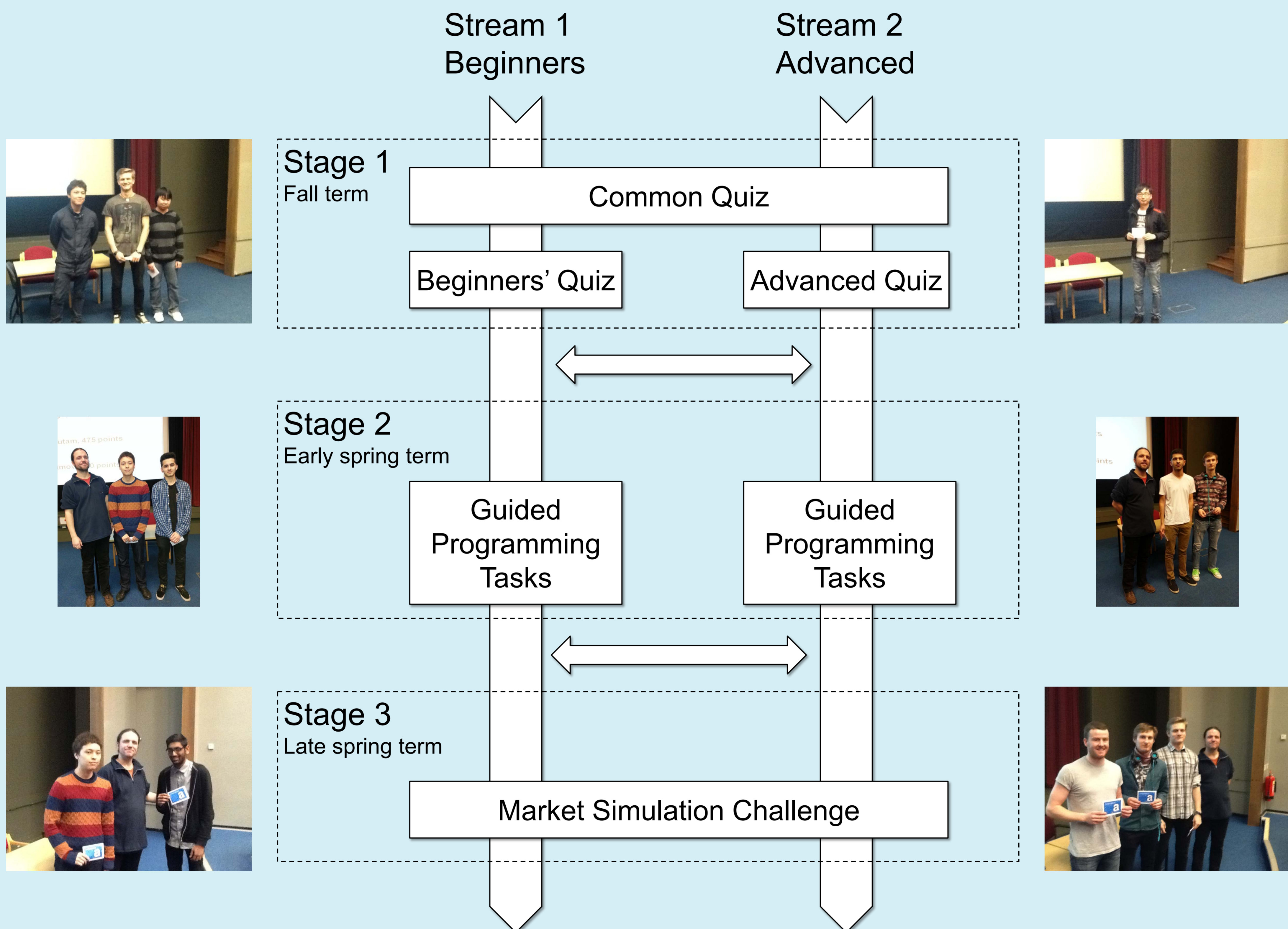
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Problem:
- Programming is a skill that needs to be learned through continuous and intensive practice
- UG Computer Science students, especially those with limited or no previous programming experience, are difficult to motivate to engage in active programming
- This negatively affects
  - Attainment and motivation in first-year UG programmes
  - Ability of affected students to cope with the material in later years of their UG programme

Aim of project:
- Get first-year UG Computer Science students to actively engage with programming by offering a coding competition in parallel to their studies

Stream 1
Beginners

Stream 2
Advanced

Stage 1
Fall term

Common Quiz

Beginners' Quiz | Advanced Quiz

Stage 2
Early spring term

Guided Programming Tasks | Guided Programming Tasks

Stage 3
Late spring term

Market Simulation Challenge

Outcomes:
- On-line competition platform
  - Submission and automatic marking of student solutions
  - Backend management of competition
  - Access control
- Market simulation platform
  - Trade in bets on success of Kickstarter projects
  - Real-world data collected over half a year
- Student-run hackathon kicking of Stage 3

Effects on Learning:
- Students with non-zero scores in the competition account for the majority of high-end marks in all programming assessments

PRA coursework mark
Breakdown of students in each mark bracket