AP CS Goes OO

David Gries
Computer Science
Univ. of Georgia
gries@cs.uga.edu

Kathleen Larson
Mathematics
Kingston HS
klarson@ulster.net

Susan H. Rodger
Computer Science
Duke University
rodger@duke.edu

Mark A. Weiss
Computer Science
Florida IU
weiss@cs.fiu.edu

Ursula Wolz
Computer Science
The College of NJ
wolz@tcnj.edu

1 Overall Objective

Members from both the Advanced Placement Computer Science (AP CS) Development Committee and AP CS Ad Hoc Committee will present information about the shift of the AP CS exam toward object orientation, including the change of the language of the AP CS exam to the Java programming language and the new AP CS Marine Biology Case Study. In the presentation of the language change, the reasoning of the change of the language, the proposed subset, and the timeline for the change will be discussed.

2 Outline of Session

Susan H. Rodger is an Associate Professor of the Practice at Duke University and has been on the AP CS Development Committee since 1995 and the Chair of the committee from 1997-2000. Her research interests include computer science education and designing visual and interactive tools.

Susan will give an overview, history, and timeline of the AP CS Development Committee and the AP CS Ad Hoc Committee's decision to change the language of the AP CS program from C++ to Java. She will moderate the question and answer session.

Mark Allen Weiss is Professor of the Computer Science at Florida International University. He has been on the AP CS Development Committee since 1997 and is currently serving as the Chair of the committee. He also served as a member of the most recent AP CS Ad Hoc Committee. His research interests include data structures, algorithms, software engineering, and computer science education.

Mark will discuss the Java subset that is proposed for eventual use on the AP Examination. He will discuss the distinction between the subset used for the exam and the addditional non-subset features that are likely to be covered in an AP course and explain the reasoning for the inclusion or exclusion of certain Java features from the proposed examination subset.

David Gries, Franklin Professor of Computer Science at the University of Georgia, is a member of the AP CS Ad Hoc Committee. His research is on programming methodology and related areas, such as the use of logic as a tool and semantics of programming languages. He has received several awards for his contributions to computer science education.

Ursula Wolz, Chair of the Department of Computer Science at the College of New Jersey is also a member of the AP CS Ad Hoc Committee. Her research is in User Interfaces, and the teaching of programming.

David and Ursula will present an overview of the work of the AP CS Ad Hoc Committee. In particular they will discuss the motivations for the recommendation to change to the language Java. The rationale they will present includes a desire to focus more on object orientation, as well as an opinion that the language used in a first programming course should meet certain criteria concerning simplicity and safety that can be better achieved in Java than in C++.

Kathleen Larson teaches Advanced Placement Computer Science at Kingston High School, Kingston, New York. She has been a member of the AP CS Development Committee since 1997, a reader or question leader at the AP CS Reading since 1989 and is a faculty consultant for the College Board presenting workshops for high school teachers.

Kathy will talk about the Marine Biology Case Study and how it is more object oriented than previous case studies. She will describe her experiences using this case study to introduce her students to object oriented design. She will also discuss transitioning to Java at the high school level.

3 Committee Memberships

The AP CS Development Committee is composed of four college faculty and three high school teachers. The members of the current committee are Mark A. Weiss (Chair) of Florida International University, Susan H.

Rodger of Duke University, Andrea Lawrence of Spelman College, Scot Drysdale of Dartmouth College, Don Kirkwood of North Salem High School, Kathleen Larson of Kingston High School, and Joseph Kmoch of Washington High School. Chris Nevison, the AP CS Chief Faculty Consultant, meets regularly with the committee.

The AP CS Ad Hoc Committee was formed to make recommendations on the future direction of AP CS. Its membership includes six college faculty, one nominated from SIGCSE and one nominated from the ACM Education Board, two high school teachers and a representative from the College Board. The members of the committee are Owen Astrachan (Chair) of Duke University, David Gries of the University of Georgia, Robert Cartwright (ACM Education Board) of Rice University, Ursula Wolz of The College of New Jersey, Henry Walker (SIGCSE) of Grinnell College, Cay Horstmann of San Jose State University, Fran Trees of Westfield High School, Richard Kick of Hinsdale Central High School, and Gail Chapman of The College Board.

4 Information on AP CS

There are many resources available for AP CS, including a listserv and a web page. The moderated listserv has over 500 high school teachers and college professors involved with the CS AP exam.

To join the listserv, send email to:

```
listproc@ets.org
```

with one line that says:

```
subscribe ap-compsci
```

The college board web page for AP CS can be found at

```
www.collegeboard.org/ap/computer-science/
```