SRC Instructor guide

SRC assignment name:

Blood Donation

Course level (CS0, CS1, CS2):

Part A: CS0
Part B:CS1

Programming language

Part A: Python
Part B: Java
   Although other languages can be used for both parts.

Domain/context

The importance of Blood donation

Societal factor

The idea is to make students understand social responsibility. Blood donation is important because Every two seconds, someone in the U.S. needs blood and it is essential to help patients survive surgeries, cancer treatment, chronic illnesses, and traumatic injuries.

Prerequisite knowledge

The topic consists of two programming assignments:

- Part A: variables, expressions, conditionals, reading input

- Part B: classes, objects, arrays

Any critical components

The topic consists of two programming assignments:

- Part A: The eligibility criteria can be changed according to the instructor. To explore the whole eligibility list, please refer to:

  $https : //www.redcrossblood.org/donate-blood/how-to-donate/eligibility-requirements/eligibility-criteria-alphabetical.html$.

- The instructor can add other classes or other functionalities to the program. One way to do that will be to consider the blood type O as the donor to all types and type AB as a receiver of all types.

Abstract (include a brief introduction and context):

Every two seconds, someone in the United States needs blood and Approximately 29,000 units of red blood cells are needed every day in the U. S. So, blood donation can make a difference to millions of Americans, including people in your own community. The Red Cross provides about 40% of our nation's blood and blood components, all from generous volunteer donors. But supply can't always meet demand because only about 3% of age-eligible people donate blood yearly. The main goal of this programming assignment is to focus on the importance of blood donation.

Students will learn and discuss :

- blood donation and why it matters

- understanding of blood type compatibility

- how to write a program to check the eligibility of a donor

- how to implement a blood donation system

Lesson Plan

Part A: CS0

- After teaching about conditionals and how to read the input the assignment can be discussed. (It should be sometimes around the midterm exam (week8))

- Allocate one week for students to complete.

Part B: CS1

- After teaching about creating several classes, working with objects, and learning about arrays the assignment can be discussed. It should be sometime after the midterm exam (week9))

- Allocate 10 days for students to complete.

Teaching strategies

- Before explaining the programming requirement parts, the instructor is encouraged to have a short in-class discussion with students.

- Try to engage students in the discussion.

- The instructor can encourage students to demonstrate the program to their family or friends