

## ITSE 2321 – Object-Oriented Programming (Java)

### Program 10 – Object-Oriented Programming

The results of a survey of the households in your township are available for public scrutiny. Each record contains data for one household, including a four-digit integer identification number, the annual income for the household, and the number of household members. Write a program to read the survey results into an ArrayList and perform the following analysis.

- Print the record of each household included in the survey in a three-column format with headings.
- Calculate and print the average household income.
- List the identification number and income of each household that exceeds the average.
- Determine and print the identification number and income of households that have income below the 2018 United States' Contiguous States poverty level.
- Determine and print the percentage of households that have income below the 2018 United States' Contiguous States poverty level.

**Compute the poverty level income using the formula below.**

$$povertyLevel = 16460.00 + 4320.00 * (m - 2)$$

where *m* is the number of members of each household. This formula shows that the poverty level depends on the number of family members, *m*, and the poverty level income increases as *m* gets larger.

The input data is available in a file named, **Program10.txt**, on the I: drive and has the format of identification number, annual income for the household, and the number of household members.

Define a Class named, **HouseHold**, that contains the attributes described earlier. Write a test Class named, **TestHouseHold**, that creates an ArrayList of **HouseHold** objects. No input, processing, or output should happen in the main method. All work should be delegated to other non-static methods. The output of the program must be sent to an output file named, **Program10-out.txt**.

Create a folder named, **fullname\_program10**. Copy your source code and the output file to the folder. Zip the folder and upload it to Blackboard.