1. IPO chart

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| **Input** | **Processing** | **Output** |
| Principle amount | Loop to repeat program | Year |
| interest rate | Compute annual interest | Beginning balance |
|  | Compute ending balance | Ending balance |
|  | Display year, beginning balance | Accumulated interest for 5 years |
|  | Display year, ending balance | Total interest earned |
|  | Update the principle for the following year |  |
|  | Accumulate total interest earned over 5 years |  |
|  | Display formatted output |  |

1. IPO chart

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| **Input** | **Processing** | **Output** |
| None | Compute the first 20 numbers in the Fibonacci sequence using a for loop | First 20 numbers in the sequence |

1. IPO chart

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| **Input** | **Processing** | **Output** |
| Employee last name | Read in the contents of the text file | Display for each line: employee last name, salary, bonus |
| Salary | For each line, extract the employee's last name and salary | Display sum of all bonuses paid out |
|  | Determine the bonus rate based on the salary according to the chart |  |
|  | Compute the bonus using the bonus rate and salary |  |
|  | Display the employee's last name, salary, and bonus |  |
|  | Keep track of the sum of all bonuses paid out |  |
|  | After the loop, display the sum of all bonuses paid out |  |

1. IPO chart

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| Input | Processing | Output |
| Item | Open the file for reading | The total extended price |
| Quantity | Loop over each line in the file | The number of orders |
| Price | Split the line into item, quantity, and price | The average order |
|  | Convert quantity and price to integers |  |
|  | Compute the extended price (quantity x price) |  |
|  | Print the item, quantity, price, and extended price for the current line |  |
|  | Update the total extended price and the number of orders |  |
|  | Calculate the average order |  |

1. IPO chart

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| Input | Processing | Output |
| Student last name | Compute tuition owed based on the district code and number of credits taken | Sum of all tuition owned |
| District code (either "I" or "O") | Display the student's last name, number of credits taken, and tuition owed | Number of students |
| Number of credits taken | Repeat for each student in the input data |  |
|  | Compute the total tuition owed across all students |  |
|  | Count the number of students |  |