Budgeting allows you to plan what you will do with the money you earn. The goal is to make sure you will have enough money for the things you need, the things you want, and for your future.

You have been asked to write a simple program that will help the students of SMCS examine their earnings, spending patterns, and savings.

After prompting the user for their name, their earnings last month, and their expenses for food, clothing, entertainment, and cell phone, the program will calculate their percentage of expenses per category and their percentage of savings.

The program output must look like the sample output below:

**Enter your name: Robin**

**Enter how much you earned last month: 500.00**

**Enter how much you spent last month on the following:**

**Food: 120.00**

**Clothing: 100.00**

**Entertainment: 40.00**

**Cell Phone: 75.00**

**Robin, this is a summary of your spending pattern:**

**Category Budget**

**---------------- ------**

**Food 24%**

**Clothing 20%**

**Entertainment 8%**

**Cell Phone 15%**

**Your expenses total $335.00 or 67% of earnings**

**Your savings are $165.00 or 33% of earnings**

**HINT: Divide category expense by earning to get percentage   
(i.e. (120.00 / 500 = 0.24)**

**Your task:**

1. With a partner, create an algorithm using your preferred tool (i.e.: IPO chart, pseudo code, or flowchart).
2. Code the program using the algorithm. Both group members must work together on the code. Do not contact other students from my other section.
3. Show me your code and results in class where they will be graded.
4. You have 3 work periods in which to complete this activity.

**Program Checklist:**

|  |  |  |
| --- | --- | --- |
|  | **Description** | **Marks** |
| **Knowledge** | **Programming Concepts:**   * Appropriate declaration of variables and constants (i.e. efficient use of memory, and suitable data types) **(4 marks)** * Appropriate use of standard input, output, and formatting object classes to gather data, and to display information **(4 marks)** * Appropriate use of arithmetic operators and assignment operators to perform program calculations **(2 marks)** |  |
| **Thinking** | **Algorithms:**   * IPO Chart, pseudo code, or flowchart standards are appropriately used to provide detailed step-by-step instructions for proper implementation of program specifications **(5 marks)** * Detailed step-by-step instructions provided in the IPO Chart, pseudo code, or flowchart are accurately interpreted and implemented  **(5 marks)** |  |
| **Communication** | **Program Header:**   * Header contains all of the required information (e.g. programmer’s name, course code, date program written, and a comprehensive description of the program’s purpose) **(2 marks)**   **Internal Documentation:**   * All comments are appropriately placed within the program to provide a meaningful summary of major processes **(2 marks)** * All variables are declared with meaningful names **(2 marks)**   **Formatting:**   * program source code is properly indented where required and contains appropriate white space for readability **(2 marks)** * User interface is courteous, esthetically pleasing, and free of spelling and grammar errors **(2 marks)** |  |
| **Application** | **Implementation:**   * User prompts are implemented according to program specifications **(3 marks)** * Program calculations accurately implement program specifications  **(3 marks)** * Output of information meets all program specifications (i.e. looks like sample output provided **(4 marks)** |  |