**CPSC1012 Core Portfolio 2 – Decision Structures**

**Weight: 5% of your final mark**

**Estimated Flight Time**

An airline needs to determine whether the current estimates of flight times are accurate. Because there is a larger possibility of variations due to weather and air traffic in the longer flights, the airline allows a larger error in the time estimates for them. The airline compares an actual flight time with the estimated flight time and considers the estimate to be too large, acceptable, or too small., depending on the following table of acceptable error margins:

|  |  |
| --- | --- |
| **Estimated Flight Time in Minutes** | **Acceptable Error Margin in Minutes** |
| 0-29 | 1 |
| 30-59 | 2 |
| 60-89 | 3 |
| 90-119 | 4 |
| 120-179 | 6 |
| 180-239 | 8 |
| 240-359 | 13 |
| 360 or more | 17 |

For example, if an estimated flight time is 106 minutes, the acceptable error margin is 4 minutes. Thus, the estimated flight time is too large if the actual flight time is less than 102 minutes, or the estimated flight time is too small if the actual flight time is greater than 110 minutes; otherwise, the estimate is acceptable.

Create a new C# Console App project named as **CorePortfolio02-*YourFullName*** (eg: CorePortfolio02-CodeGuru) that reads an estimated flight time and an actual flight time and then print whether the estimate time is too large, acceptable, or too small. If the estimated flight time is too large or too small, the program should also print the amount of the overestimate or underestimate. Here are some sample runs:

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| Flight Time Estimate |

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This program is used to determine if the estimated flight time is acceptable.

Enter estimated flight time in minutes: 106

Enter actual flight time in minutes: 100

Estimated time too large (by 2 minutes)

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| Flight Time Estimate |

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This program is used to determine if the estimated flight time is acceptable.

Enter estimated flight time in minutes: 106

Enter actual flight time in minutes: 111

Estimated time too small (by 1 minutes)

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| Flight Time Estimate |

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This program is used to determine if the estimated flight time is acceptable.

Enter estimated flight time in minutes: 106

Enter actual flight time in minutes: 110

Estimated time is acceptable

**Coding Requirements**

The following coding standards must be followed when developing your program:

* A C# comment block at the beginning of the source file describing the **purpose**, **input**, **process**, **output, author, last modified date** of the program.
* Write only one statement per line.
* Write only one declaration per line.
* Use camelCase for local variable names.
* Use PascalCase for constant variable names.
* If continuation lines are not indented automatically, indent them one tab stop (four spaces).

Submission **Requirements**

* Submit a compressed (zip) copy of your Visual Studio 2019 project folder to Moodle on or before the due date.

**Marking Rubric**

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| --- | --- |
| **Mark** | **Description** |
| 5 | Excellent – program passes all test cases and coding follows best practices and class standards |
| 4 | Very Good – program passes all test cases, but coding does not follow best practices and class standards |
| 3 | Acceptable – coded all the requirements and program produce the expected results for some of the test cases |
| 2 | Needs Work – coded all the requirements but program fails to produce expected results |
| 1 | Unsatisfactory – coded less than 50% of the requirements |
| 0 | Not done. |