| **Section 1 – Assessment Task Overview and Description** |
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| Student / Class Details **Full name:** Mitchell Henry  **Student ID:** 102661522  **Teacher:** Tim Baird  **Date / Time started:** 14/10/2019 2:00 PM  By checking the box below, you agree that penalties exist for plagiarized work and that all work submitted is your own. Please refer to the bottom of the document for more information.  I agree and confirm that all work in this assessment is mine |
| **Resources**   * Shapes\_Class\_Diagram.pdf * Interface\_Challenge.docx   **Tasks – Time Limit 3 hours**  **Pass Tasks** (Only these are required to pass)   1. Create a class library of shapes, following the class diagram provided in the pdf.  * Perimeter is addition of all sides * Area for a square is Side1Length \* Side1Length * Area for a square is Side1Length \* Side2Length * The third side of a Right-Angled triangle is calculated using Pythagora’s theorem. * The area for a Right-Angled Triangle is ½ \* side1Length \* side2Length * The area for an Equilateral Triangle is * The perimeter of a Circle is 2\*PI\*Radius * The area of a Circle is PI\*Radius2  1. Create a unit test project that performs tests below on the classes created. (Hint: Rounding is used to deal with double precision)   **Square**   |  |  |  | | --- | --- | --- | | **Input** | **Expected Area** | **Expected Perimeter** | | Side1 = 5 | 25 | 20 | | Side1 = 15 | 225 | 60 | | Side1 = 7 | 49 | 28 |   **Rectangle**   |  |  |  | | --- | --- | --- | | **Inputs** | **Expected Area** | **Expected Perimeter** | | Side1 = 5, Side2 = 10 | 50 | 30 | | Side1 = 4, Side2 = 6 | 24 | 20 | | Side1 = 9, Side2 = 7 | 63 | 32 |   **Equilateral**   |  |  |  | | --- | --- | --- | | **Input** | **Expected Area** | **Expected Perimeter** | | Side1 = 5 | 10.83 | 15 | | Side1 = 15 | 97.43 | 45 | | Side1 = 7 | 21.22 | 21 |   **Right Angle**   |  |  |  | | --- | --- | --- | | **Inputs** | **Expected Area** | **Expected Perimeter** | | Side1 = 5, Side2 = 10 | 25 | 26.18 | | Side1 = 4, Side2 = 6 | 12 | 17.21 | | Side1 = 9, Side2 = 7 | 31.5 | 27.4 |   **Circle**   |  |  |  | | --- | --- | --- | | **Input** | **Expected Area** | **Expected Perimeter** | | Side1 = 5 | 78.55 | 31.42 | | Side1 = 15 | 706.95 | 94.26 | | Side1 = 7 | 153.96 | 43.99 |  1. Create a console program to allow the creation of all shapes.    1. Invalid inputs must be dealt with via exceptions. Catch exceptions from the console program and do not allow it to crash on invalid inputs.    2. Create and catch an exception that will not allow the user to enter lengths that are decimal.   **Credit Task**   1. Tests must also check that the Interface *IShapeData* is used in all of the shapes.   **Distinction Task**   1. Create two new shapes; Regular Pentagon and Regular Hexagon. They need to use the shapes interface. Develop unit tests for these shapes and integrate the new shapes into the console program.   **High Distinction**   1. Allow the program to store shapes that are created. Allow the user to select shapes to view info on the shape chosen. |

| **Section 2 – Assessment Task Submission Information** | |
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| **Submission Details** | **Due date:** |
| 1. The assessment task must be submitted via Canvas or directly to the teacher with an assessment cover sheet. 2. Ensure to include on the front page or in the header or footer of your assessment:    * your name    * student ID    * your teacher’s name    * the unit code/s and title/s    * the assessment task title 3. The program must be observed and checked off during the assessment time 4. Submissions received after the submission date must be approved by your teacher. |

| **Summary of Evidence to be Submitted** |
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| * This document with the relevant parts filled in |
| * GitHub link of Source Code in Canvas |
| * Observation Checklist photo with signatures uploaded to Canvas |
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| The task will be assessed as satisfactory when all of the required evidence listed has been satisfactorily demonstrated.  \* If applicable, for graded units, the task must be satisfactorily completed before marks will be allocated. Refer to your unit outline for more information. |

| Section 3 – Assessment Task Criteria and Outcome | |
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| *All items/criteria must be demonstrated satisfactorily to achieve this task. The items/criteria for this activity will be assessed as S – Satisfactory or US – Unsatisfactory.* | |
| Items/criteria | |
| 1. | Application building from design documents |
| 2. | Use of libraries |
| 3. | Remote calls |
| 4. | Testing |
| 5. | Documentation |
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| **Section 4 – General Assessment Information** | |
| **Decision Making Rules** | Each activity in the assessment task must be satisfactorily completed for the task to be assessed as satisfactory.  Every task must be satisfactorily completed to be assessed as competent in the unit.  *\* For graded units, competence must be demonstrated before a mark can be given.* |
| **Plagiarism** | There are serious penalties for plagiarism that may include repeating a new assessment task or being withdrawn for the unit / course.  Students must ensure that all assessments are their own work (or group work and clearly noted as such).  Please refer to [www.swinburne.edu.au/corporate/registrar/plagiarism/index.html](http://www.swinburne.edu.au/corporate/registrar/plagiarism/index.html) |
| **Reasonable Adjustment** | Students may request reasonable adjustment for assessment tasks.  Reasonable adjustment usually involves varying:   * the processes for conducting the assessment (eg: allowing additional time, varying the venue) * the evidence gathering techniques (eg: oral rather than written questioning, use of a scribe, modifications to equipment)   However, the evidence collected must allow the student to demonstrate all requirements of the unit.  If you have any other issue that may impact your ability to undertake the assessment, please discuss with your teacher. |
| **Re-submission** *(where tasks are not satisfactorily completed)* | Assessment tasks that are not satisfactory can be resubmitted up until the end of the unit as scheduled on the Unit Outline. The timing on this may depend on the equipment required for this assessment task.  Resubmissions received after the scheduled unit end date may not be accepted unless approved by the teacher prior to the end date.  Note: Assessment tasks submitted for the first time after the unit end date as scheduled in the Unit Outline will not be assessed and the student should re-enrol into the unit. |
| **Special consideration** | Students may apply for Special Consideration where personal circumstances have adversely affected their task result or ability to undertake an assessment. A Special Consideration form can be completed prior to, but no later than 3 days after, the date of assessment and submitted to the relevant Manager. |
| **Work Health & Safety** | Activities may require the use of equipment or participation in group exercises. If the teacher identifies any unsafe activity or potentially dangerous situations, the teacher can stop the assessment at any time. |