**CRC cards**

**Class Responsibility Collaborator (CRC)** model is a collection of CRC cards. A CRC cardsare a brainstorming tool used in the design of Object-Oriented Software. They are used for determining classes, their responsibilities and their collaborators which we are going to use in our programs. A CRC card is divided into three sections.

**1. Class:** - A class represents a collection of similar objects. A class name appears on the top of the CRC cards.

**2. Responsibility: -** A responsibility is anything that a class knows or does. The responsibilities of a class appear along the left side of the CRC card.

**3. Collaborator: -** A collaborator is another class that a class interacts with to fulfill its responsibilities. The collaborator of a class appears along the right side of the CRC card.

We have designed the following CRC cards for our program (IPR).

1. Class for checking the primality of a number

|  |  |
| --- | --- |
| Check Prime | |
| Input number |  |
| Checking primality |  |
| Taking primality testing algorithm |  |
| Implementing algorithm |  |
| Showing result if number is prime |  |
| Display error if number is not prime |  |
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2. Class for testing the root degree

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| --- | --- |
| Root degree | |
| Input root degree number |  |
| Checking if number is >1 |  |
| Verifying if number is positive |  |
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3. Class for testing the precision of the result

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| --- | --- |
| Precision testing | |
| Taking input for precision of result | Computing prime root |
| Checking if number is > 1 and positive |  |
| Testing with result of program |  |
| Displaying result |  |
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4. Class for computing prime root

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| --- | --- |
| Computing prime root | |
| Input prime number | Check prime |
| Input root degree | Root degree |
| Input Precision | Precision testing |
| Computing root of the prime number |  |
| Presenting result |  |
| Showing error logs |  |
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5. Saving the result of the program

|  |  |
| --- | --- |
| Saving result | |
| Taking the result | Computing prime root |
| Saving in .txt or XML file |  |
| Checking if result can be saved on different operating systems |  |
| Saving result after verification from user that he wants to overwrite previous file or not. |  |
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6. Displaying result on screen

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| --- | --- |
| Display result | |
| Input of result | Computing prime root |
| Display result on screen |  |
| Display result with scrolling windows if it contains large digits |  |
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7. Checking operation time of the program

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| --- | --- |
| Operation time | |
| Observing the computation | Computing prime root |
| Checking operation speed |  |
| Counting operation time |  |
| Verifying that operation time not to exceed 1 second per digit |  |
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8. To ensure that program is compatible with multiple systems

|  |  |
| --- | --- |
| Multi system compatibility | |
| Running program on different operating system | Computing prime root |
| Displaying error massages if not compatible | Help |
| Showing help |  |
| Run the program if compatible |  |
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9. Design the Graphical User Interface

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| Graphical User Interface | |
| Showing menus and submenus |  |
| Design Buttons |  |
| Design Toolbars |  |
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10. Presenting help about the program

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| Help | |
| Showing help options for the program |  |
| Explain the reason for wrong result |  |
| Showing help text file |  |
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11. Showing tooltips

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| Tooltips | |
| Showing description of a GUI |  |
| Widgets |  |
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