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| --- |
| IT325G Assignment\_1 |
| <Year> - Group X00 |
| Name Name <x00namna>  Name Name <x00namna>  Name Name <x00namna>  Name Name <x00namna> |

# Identify the classical problem

## Which classical problem is the assignment similar to?

<Fill your answer here>

## Why is the problem you are facing similar to the classical problem? With your answer you should focus on the similarities and differences in synchronization needs, resources and process types.

<Fill your answer here alongside with the motivation>

## Why is your solution different from other classical problems? Like for example if you identified a solution resembling Dining Philosophers, how is it different from Readers/Writers or Producer/Consumers?

<Fill your answer here alongside with the motivation >

## Based on the selected classical problem, describe your design decisions, like which processes are you using, which responsibilities they have and how communication is designed to work.

<Fill your answer here alongside with the motivation>

# Verification decisions

## Testing the code - Unisex bathroom

|  |  |  |
| --- | --- | --- |
| Test case | Result | What does this mean / represent? |
| Woman: 2, Man: 2 | <fill your answers in the table> | <fill your answers in the table> |
| Woman 10, Man: 10 |  |  |
| Woman 10, Man: 1 |  |  |
| Woman 0, Man: 5 |  |  |
| <add rows if needed> |  |  |

<What can you draw as a conclusion based on the tests? Think about limitations too. Motivate your answer.>

## Testing the code - Limited bathroom

|  |  |  |
| --- | --- | --- |
| Test case | Result | What does this mean / represent? |
| Woman: 2, Man: 2 | <fill your answers in the table> | <fill your answers in the table> |
| Woman 10, Man: 10 |  |  |
| Woman 10, Man: 1 |  |  |
| Woman 0, Man: 5 |  |  |
| <add rows if needed> |  |  |
|  |  |  |

<What can you draw as a conclusion based on the tests? Think about limitations too. Motivate your answer.>

## Testing the code - Fair bathroom

|  |  |  |
| --- | --- | --- |
| Test case | Result | What does this mean / represent? |
| Woman: 2, Man: 2 | <fill your answers in the table> | <fill your answers in the table> |
| Woman 10, Man: 10 |  |  |
| Woman 10, Man: 1 |  |  |
| Woman 0, Man: 5 |  |  |
| <add rows if needed> |  |  |

<What can you draw as a conclusion based on the tests? Think about limitations too. Motivate your answer.>

## Model verification: Safety (as part of extrafunctional requirements)

|  |  |  |  |
| --- | --- | --- | --- |
| Test case | Expected result | Actual result | What does this mean / represent? |
| A[] !deadlock | false | <fill your answers in the table> | <fill your answers in the table> |
| <add more queries about **deadlock** if needed> |  |  |  |
| <**mutual exclusion** related queries> |  |  |  |
|  |  |  |  |
| <**unnecessary delay** related queries> |  |  |  |
|  |  |  |  |
| <add more rows if needed> |  |  |  |

<What can you draw as a conclusion based on the queries? Think about limitations too. Motivate your answer.>

## Model verification: Liveness (as part of extrafunctional requirements)

|  |  |  |  |
| --- | --- | --- | --- |
| Test case | Expected result | Actual result | What does this mean / represent? |
| <**livenes**s related queries> | false | <fill your answers in the table> | <fill your answers in the table> |
|  |  |  |  |
| <add more rows if needed> |  |  |  |

<What can you draw as a conclusion based on the queries? Think about limitations too. Motivate your answer.>

## Model verification: Functional requirements

|  |  |  |  |
| --- | --- | --- | --- |
| Test case | Expected result | Actual result | What does this mean / represent? |
| E<> nm > 0 | true | <fill your answers in the table> | <fill your answers in the table> |
| <more **functional requirement** related queries> |  |  |  |
| <add more rows if needed> |  |  |  |

<What can you draw as a conclusion based on the queries? Think about limitations too. Motivate your answer.>

# Discussion

<This section contains a discussion of whether the problem was successfully solved. Have you identified any problems with your solution? Can your solution be improved and if so how? Was it anything that surprised you during the verification? **Note**: it’s seldom a good approach to conclude that the program is perfect. I want to see that you can estimate your success. At most half A4 page.>