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| **Use Case:** | UC01 - Create Feature Model Diagram | |
| **Actor:** | User | |
| **Precondition** | User is logged in | |
| **Post condition** |  | |
| **Actor Actions** | | **System Actions** |
| **Main Flow:** | | |
| 1. User selects **Create Diagram** option | |  |
| 2. User selects feature model notation | |  |
|  | | 3. System checks notation |
| 4. User adds features to diagram | |  |
| 5. User saves diagram | |  |
|  | | 6. System Validates diagram and save it in the repository |
| **Alternative Flows:** | | |
| 1.A - User selects **Load Diagram** notation | | |
|  | | 1. System shows diagrams repository |
| 2. User selects diagram and clicks on **load** | |  |
|  | | 3. System loads the selected diagram |
| 4. Got to step 4 in main flow | |  |
| 4.A - User selected FODA notation | | |
|  | | 1. System loads diagram editor for FODA notation |
| 2. Do use case "UC02 - Use FODA notation" | |  |
| 4.B - Use selected Generative Programming notation | | |
|  | | 1. System loads diagram editor for Generative Programming notation |
| 2. Do use case "UC03 - Use Generative Programming notation" | |  |
| 4.C - Use selected Cardinality-based notation | | |
|  | | 1. System loads diagram editor for Cardinality-based notation |
| 2. Do use case "UC04 - Use Cardinality-based notation" | |  |
| 4.D - Use selected FeatuRSEB notation | | |
|  | | 1. System loads diagram editor for FeatuRSEB notation |
| 2. Do use case "UC05 - Use FeatuRSEB notation" | |  |
| 4.E - Use selected GBS notation | | |
|  | | 1. System loads diagram editor for GBS notation |
| 2. Do use case "UC06 - Use GBS notation" | |  |
| **Exception Flows:** | | |
| 6.A. Diagram is not valid | | |
|  | | 1. System show error message |
| 2. Go to step 4 in main flow | |  |
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| **Use Case:** | UC02 - Use FODA notation | |
| **Actor:** | User | |
| **Precondition** | User selects FODA notation | |
| **Post condition** |  | |
| **Actor Actions** | | **System Actions** |
| **Main Flow:** | | |
| 1. User adds a root feature | |  |
|  | | 2. System shows root feature in the diagram |
| 3. User adds a mandatory feature | |  |
|  | | 4. System shows mandatory feature in the diagram |
| 5. User makes the mandatory feature a child of root | |  |
|  | | 6. System makes a relationship between parent and child features |
| 7. User adds optional feature | |  |
|  | | 8. System shows optional feature in the diagram |
| 9. User makes the optional feature a child of some feature | |  |
|  | | 10. System makes a relationship between parent and child features |
| 11. User makes a feature an alternative feature | |  |
|  | | 12. System makes the feature set an alternative set |
| 13. Go to step 5 in "UC01 - Create Feature Model Diagram" main flow | |  |
| **Alternative Flows:** | | |
| \*.A user adds a new mandatory feature | | |
|  | | 1. System shows mandatory feature in the diagram |
| 2. User makes the mandatory feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.B user adds a new optional feature | | |
|  | | 1. System shows optional feature in the diagram |
| 2. User makes the optional feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.C user makes a new alternative feature | | |
|  | | 1. System makes the feature set an alternative set |
| 2. Go to step 3 in main flow | |  |
| 3.A User doesn't want to add mandatory features | | |
| 1. Go to step 7 in main flow | |  |
| 3.A User doesn't want to add more features | | |
| 1. Go to step 13 in main flow | |  |
| 7.A User doesn't want to add optional features | | |
| 1. Go to step 3 in main flow | |  |
| 11.A User doesn't want to make alternative features | | |
| 1. Go to step 3 in main flow | |  |
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| **Use Case:** | UC03 - Use Generative Programming notation | |
| **Actor:** | User | |
| **Precondition** | User selects Generative Programming notation | |
| **Post condition** |  | |
| **Actor Actions** | | **System Actions** |
| **Main Flow:** | | |
| 1. User adds a root feature | |  |
|  | | 2. System shows root feature in the diagram |
| 3. User adds a mandatory feature | |  |
|  | | 4. System shows mandatory feature in the diagram |
| 5. User makes the mandatory feature a child of root | |  |
|  | | 6. System makes a relationship between parent and child features |
| 7. User adds optional feature | |  |
|  | | 8. System shows optional feature in the diagram |
| 9. User makes the optional feature a child of some feature | |  |
|  | | 10. System makes a relationship between parent and child features |
| 11. User makes a feature an alternative feature | |  |
|  | | 12. System makes the feature set an alternative set |
| 13. User adds an or-feature | |  |
|  | | 14. System shows or-feature in the diagram |
| 15. Go to step 5 in "UC01 - Create Feature Model Diagram" main flow | |  |
| **Alternative Flows:** | | |
| \*.A user adds a new mandatory feature | | |
|  | | 1. System shows mandatory feature in the diagram |
| 2. User makes the mandatory feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.B user adds a new optional feature | | |
|  | | 1. System shows optional feature in the diagram |
| 2. User makes the optional feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.C user makes a new alternative feature | | |
|  | | 1. System makes the feature set an alternative set |
| 2. Go to step 3 in main flow | |  |
| \*.D user adds a new or-feature | | |
|  | | 1. System shows or-feature in the diagram |
| 2. Go to step 3 in main flow | |  |
| 3.A User doesn't want to add mandatory features | | |
| 1. Go to step 7 in main flow | |  |
| 3.A User doesn't want to add more features | | |
| 1. Go to step 15 in main flow | |  |
| 7.A User doesn't want to add optional features | | |
| 1. Go to step 3 in main flow | |  |
| 11.A User doesn't want to make alternative features | | |
| 1. Go to step 3 in main flow | |  |
| 13.A User doesn't want to add or-features | | |
| 1. Go to step 3 in main flow | |  |

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| **Use Case:** | UC04 - Use Cardinality-based notation | |
| **Actor:** | User | |
| **Precondition** | User selects Cardinality-based notation | |
| **Post condition** |  | |
| **Actor Actions** | | **System Actions** |
| **Main Flow:** | | |
| 1. User adds a root feature | |  |
|  | | 2. System shows root feature in the diagram |
| 3. User adds a mandatory feature | |  |
|  | | 4. System shows mandatory feature in the diagram |
| 5. User makes the mandatory feature a child of root | |  |
|  | | 6. System makes a relationship between parent and child features |
| 7. User adds optional feature | |  |
|  | | 8. System shows optional feature in the diagram |
| 9. User makes the optional feature a child of some feature | |  |
|  | | 10. System makes a relationship between parent and child features |
| 11. User makes a feature an alternative feature | |  |
|  | | 12. System makes the feature set an alternative set |
| 13. User adds an or-feature | |  |
|  | | 14. System shows or-feature in the diagram |
| 15. User adds an feature attribute | |  |
|  | | 16. System shows feature attribute in the diagram |
| 17. User adds a feature cardinality | |  |
|  | | 18. System shows feature cardinality in the diagram |
| 19. User adds group cardinality | |  |
|  | | 20. System shows feature cardinality in the diagram |
| 21. Go to step 5 in "UC01 - Create Feature Model Diagram" main flow | |  |
| **Alternative Flows:** | | |
| \*.A user adds a new mandatory feature | | |
|  | | 1. System shows mandatory feature in the diagram |
| 2. User makes the mandatory feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.B user adds a new optional feature | | |
|  | | 1. System shows optional feature in the diagram |
| 2. User makes the optional feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.C user makes a new alternative feature | | |
|  | | 1. System makes the feature set an alternative set |
| 2. Go to step 3 in main flow | |  |
| \*.D user adds a new or-feature | | |
|  | | 1. System shows or-feature in the diagram |
| 2. User makes the or-feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.E user adds a new feature attribute | | |
|  | | 1. System shows feature attribute in the diagram |
| 2. Go to step 3 in main flow | |  |
| \*.F user adds a new feature cardinality | | |
|  | | 1. System shows feature cardinality in the diagram |
| 2. Go to step 3 in main flow | |  |
| \*.G user adds a new group cardinality | | |
|  | | 1. System shows group cardinality in the diagram |
| 2. Go to step 3 in main flow | |  |
| 3.A User doesn't want to add mandatory features | | |
| 1. Go to step 7 in main flow | |  |
| 3.A User doesn't want to add more features | | |
| 1. Go to step 21in main flow | |  |
| 7.A User doesn't want to add optional features | | |
| 1. Go to step 3 in main flow | |  |
| 11.A User doesn't want to make alternative features | | |
| 1. Go to step 3 in main flow | |  |
| 13.A User doesn't want to add or-features | | |
| 1. Go to step 3 in main flow | |  |
| 15.A User doesn't want a feature attribute | | |
| 1. Go to step 3 in main flow | |  |
| 17.A User doesn't want to add feature cardinality | | |
| 1. Go to step 3 in main flow | |  |
| 19.A User doesn't want to add group cardinality | | |
| 1. Go to step 3 in main flow | |  |

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| **Use Case:** | UC05 - Use FeatuRSEB notation | |
| **Actor:** | User | |
| **Precondition** | User selects FeatuRSEB notation | |
| **Post condition** |  | |
| **Actor Actions** | | **System Actions** |
| **Main Flow:** | | |
| 1. User adds a normal feature | |  |
|  | | 2. System shows normal feature in the diagram |
| 3. User adds a static binding feature | |  |
|  | | 4. System shows static binding feature in the diagram |
| 5. User makes the feature a child of the normal feature | |  |
|  | | 6. System makes a relationship between parent and child features |
| 7. User adds dynamic binding feature | |  |
|  | | 8. System shows dynamic binding feature in the diagram |
| 9. User makes the dynamic binding feature a child of some feature | |  |
|  | | 10. System makes a relationship between parent and child features |
| 11. Go to step 5 in "UC01 - Create Feature Model Diagram" main flow | |  |
| **Alternative Flows:** | | |
| \*.A user adds a new normal feature | | |
|  | | 1. System shows normal feature in the diagram |
| 2. User makes the normal feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 1 in main flow | |  |
| \*.B user adds a new static binding feature | | |
|  | | 1. System shows static binding feature in the diagram |
| 2. . User makes the static binding feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 1 in main flow | |  |
| \*.C user adds a new dynamic binding feature | | |
|  | | 1. System shows dynamic binding feature in the diagram |
| 2. . User makes the dynamic binding feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 1 in main flow | |  |
| 3.A User doesn't want to add normal features | | |
| 1. Go to step 3 in main flow | |  |
| 3.A User doesn't want to add more features | | |
| 1. Go to step 11 in main flow | |  |
| 7.A User doesn't want to add static binding features | | |
| 1. Go to step 1 in main flow | |  |
| 11.A User doesn't want to add dynamic binding features | | |
| 1. Go to step 1 in main flow | |  |

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| **Use Case:** | UC06 - Use GBS notation | |
| **Actor:** | User | |
| **Precondition** | User selects GBS notation | |
| **Post condition** |  | |
| **Actor Actions** | | **System Actions** |
| **Main Flow:** | | |
| 1. User adds a root feature | |  |
|  | | 2. System shows root feature in the diagram |
| 3. User adds a mandatory feature | |  |
|  | | 4. System shows mandatory feature in the diagram |
| 5. User makes the mandatory feature a child of root | |  |
|  | | 6. System makes a relationship between parent and child features |
| 7. User adds optional feature | |  |
|  | | 8. System shows optional feature in the diagram |
| 9. User makes the optional feature a child of some feature | |  |
|  | | 10. System makes a relationship between parent and child features |
| 11. User adds a XOR feature | |  |
|  | | 12. System adds XOR feature in the diagram |
| 13. User makes the XOR feature a child of some feature | |  |
|  | | 14. System makes a relationship between parent and child features |
| 15. User adds an OR feature | |  |
|  | | 16. System shows OR feature in the diagram |
| 17. User makes the OR feature a child of some feature | |  |
|  | | 18. System makes a relationship between parent and child features |
| 19. User adds an external feature | |  |
|  | | 20. System shows external feature in the diagram |
| 21. User makes the external feature a child of some feature | |  |
|  | | 22. System makes a relationship between parent and child features |
| 23. Go to step 5 in "UC01 - Create Feature Model Diagram" main flow | |  |
| **Alternative Flows:** | | |
| \*.A user adds a new mandatory feature | | |
|  | | 1. System shows mandatory feature in the diagram |
| 2. User makes the mandatory feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.B user adds a new optional feature | | |
|  | | 1. System shows optional feature in the diagram |
| 2. User makes the optional feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.C user adds a XOR feature | | |
|  | | 1. System shows XOR feature in the diagram |
| 2. User makes the XOR feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.D user adds a OR feature | | |
|  | | 1. System shows OR feature in the diagram |
| 2. User makes the OR feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| \*.E user adds a external feature | | |
|  | | 1. System shows external feature in the diagram |
| 2. User makes the external feature a child of some feature | |  |
|  | | 3. System makes a relationship between parent and child features |
| 4. Go to step 3 in main flow | |  |
| 3.A User doesn't want to add mandatory features | | |
| 1. Go to step 7 in main flow | |  |
| 3.A User doesn't want to add more features | | |
| 1. Go to step 23 in main flow | |  |
| 7.A User doesn't want to add optional features | | |
| 1. Go to step 3 in main flow | |  |
| 11.A User doesn't want to add XOR features | | |
| 1. Go to step 3 in main flow | |  |
| 15.A User doesn't want to add OR features | | |
| 1. Go to step 3 in main flow | |  |
| 19.A User doesn't want to add external features | | |
| 1. Go to step 3 in main flow | |  |