Mobile User Interface for Graph Navigation

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Introduction

- Background and motivation
  - Lack of an Application utilizing relationships between applications
  - Using graph to depict relationships
  - Graph database
  - Parallel research

- Objective

- Contribution
  - Trials on Android platform
  - Requirements elicitation and refining
  - Application design and construction
Technical research

• Graph

![Graph for our application](image)

• Android platform
  - Android platform architecture
  - User interface design on a touch screen
  - Advantages
  - Drawbacks
Requirement Analysis

• Key features

• Functional Requirements

• Non-functional Requirements

Figure: Application user case
Technical design

• Design pattern

  - Design consideration
  - Alternative layout
  - No absolute layout
  - Using density-independent-pixel where possible

Figure: Observer Pattern
Implementation

• Two versions with different widgets

• Challenge faced
  ➢ Dealing with touch events
  ➢ Use of animation
  ➢ Application resource management
Testing

• Test data
• Test plan
  ➢ 4 test scenarios, 18 test cases

<table>
<thead>
<tr>
<th>S/N</th>
<th>Test Scenario Name</th>
<th>Test Scenario Description</th>
<th>Reference to Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Graph loading</td>
<td>Check whether system can load a graph and display it properly</td>
<td>requirement analysis 3.2.5</td>
</tr>
<tr>
<td>02</td>
<td>Current Node list</td>
<td>Check the functionalities of the Current Node list perform as defined in requirement specification</td>
<td>requirement analysis 3.2.1 3.2.2 3.2.6 3.2.10 3.2.11</td>
</tr>
<tr>
<td>03</td>
<td>Next Node list</td>
<td>Check the functionalities of the Current Node list perform as defined in requirement specification</td>
<td>requirement analysis 3.2.3 3.2.4 3.2.7 3.2.8</td>
</tr>
<tr>
<td>04</td>
<td>Left-handed and right-handed user</td>
<td>Check the application is suitable for both left-handed and right-handed user</td>
<td>requirement analysis 3.2.12</td>
</tr>
</tbody>
</table>
Conclusion and future work

• Conclusion
  ➢ Application is ready for use
  ➢ Most of the functionalities are achieved
  ➢ Experience gained with respect to developing on Android platform

• Future work
  ➢ Improve user experience
  ➢ More functionalities
  ➢ Cross platform
Thank you

Questions?