ATAM Document
TDT4240 - Group A14

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Introduction

The evaluated group of this report is: A13. Group A13 have decided to focus their project on modifiability and testability.

Attribute utility tree

Attribute	Scenario	Priority	Details
Testability	T1	H	-
Modifiability	M1	L	-
Modifiability	M2	H	-
Modifiability	Change COTS	(M,L)	Semantic coherence and decoupling. Decoupling is good and it's easily combined with modularity, but keep in mind that it's not the same thing.
Testability	The verification of working game features	(M,L)	Limited Structural complexity might not improve the testability of the program.

Analysis of Architectural Approach

Scenario

- Scenario : M1
- Scenario name: Add game mode
- Attribute(s): Modifiability
- Environment: Build time
- Stimulus: Add game mode

- Response: Modification is made

Architectural Decisions

Architectural Decisions	Sensitivity	Tradeoff	Risk	NonRisk
Modifiability by being able to add diverse content	Could possibly interfere with the environment	Tradeoff with single, unifying, marketable, game mode	Reduce game functionality and richness	N1
Reduce coupling	S1, S3	T1	-	N1
Keep semantic coherence	S1, S2	T2	-	N1
Limit structural complexity	S1, S3	T3	-	N1

Reasoning:

Because of the importance of game modes this is choosen as a scenario.

Scenario

- Scenario : M2
- Scenario name: Add landscape generator
- Attribute(s): Modifiability
- Environment: Build time
- Stimulus: Add landscape generator
- Response: Modification is made

Architectural Decisions

Architectural Decisions	Sensitivity	Tradeoff	Risk	NonRisk
Expandability, Diversity, Choice	Changes to how the game reads landscapes	Will be hard to change the way terrains are implemented later	Won't require rewriting when adding more terrains later.	N1

Reasoning:

Users should be able to choose which generator to use, so it should be easy for the developer to add new ones.

Scenario

- Scenario : T1
- Scenario name: Immediate effects of game settings change
- Attribute(s): Testability
- Environment: Run-time
- Stimulus: Changing game settings
- Response: Gameplay is adjusted to changes

Architectural Decisions

Architectural Decisions	Sensitivity	Tradeoff	Risk	NonRisk
Use libGDX	S1, S2	T1	R1	N1

Reasoning:

Tests are good because knowledge of the program is needed for a productive development. The risk is that the test might crash things if not done properly, and that is very bad if it happens at run-time. Tradeoff is that testing consumes time that could have been spent on development. A NonRisk is that it will most likely not hurt the tester, developers, or other stakeholders.

Sensitivity Points

(how architectural decisions affects either modifiability or testability)

- S1: affects testability positively.
- S2: affects modifiability negatively.
- S3: affects modifiability positively.
- S4: affect testability negatively.

Tradeoff Points

- T1: No apparent trade off.
- T2: trades code readability for implementation time.
- T3: trades functionality for modifiability.

Risks and non-risks

- R1: libGDX turns out to be hard to use properly
- N1: No apparent risks.

Own Experiences from using ATAM

We were reminded about some functional requirements that we had not included in our own design, mainly because of the fact that we did not create an exhaustive list of requirements.

Problems and issues

The low level of detail in the architecture and requirements documents, made it difficult to write a comprehensive report.

Change log

none