Slide (1)

Hi my name is jordan and here I will talk about my project which is in software engineering in safety critical Systems

Slide (2)

The project aim is to investigate approaches to safety critical Systems(this means the approaches in terms of programming languages and software development processes ) then select two and apply it to a case study

Objects are

Develop a safety critical System using different safety critical languages

Compare these languages with an evaluation criteria such as usability and security

Also to investigate issues into safety critical systems development

Slide(3)

My safety critical system which could change later is to develop a railway crossing simulation

This will involve features such as editable scenario which I think should involve speed of a train, signal for barriers and changeable barrier time

Goal is to be able to implement a safe railway crossing.

Slide(4)

After looking at a few different software development processes I decided to go down the Plan driven development root and in turn I chose the waterfall development process,

As all the events are planned before development It is must more reliable to choose waterfall for a safety critical System

Slide(5)

For my project I have chosen Spark and Spec #

This because in safety critical Development these stand out as most affective safety critical languages they both have individual features that make them unique and I will compare how these two stand up against each other. Also these two are very accessible and extend languages such as ada for spark and c# for spec#

Slide(6)

My evaluation criteria so far involve these 4 things

Ease of use - how easy is it to write code in these languages compared to something like java.

Effectiveness – can I say that for certain that my code will cope under different cirtemstances

Security – what kind of percentage of my code is proofed is the code bullet proof?

Features – also what kind of features do these languages offer for example spark has contracts which involves and pre and a post condition which makes sure code is always satisfied.

Slide(7)

Look into issues for development for example one issue is that companies says that developing code in this way so that it is reliable would take a long time and would prefer an algile type of development

Fully implement the evaultion criteria

Learn spark ada and spec#

Development systems

Evaluation and testing