

# *Risk Management analysis*

*Specification presentation of SEP group project*

**Coding Pharaohs**



# Structure

- ▶ Risk identification and analysis
  - ▶ Table of risk analysis
  - ▶ analysis diagrams
- ▶ Risk planning
  - ▶ Strategy
  - ▶ Contingency plan
- ▶ Risk Monitoring



# Risk types

- ▶ Technology
  - ▶ Tool
  - ▶ People
  - ▶ Requirement
  - ▶ Organisational
  - ▶ Estimation
- ▶ Specific for the scenario



# *Risk Analysis*



# Risk analysis

## Technology risks

Risks	Probability	Effects
Problems inherent in using a new technology: communicating with device, learning new protocols, working with leJOS software, uploading programs etc.	moderate	catastrophic
Device doesn't function properly; device is damaged	low/moderate	serious
Device/leJOS software has defects/flaws	low	moderate



# Risk analysis

## Tool risks

Risks	Probability	Effects
Members are not proficient in using required tools; time required to become familiar with tools negatively impacts schedule	high	catastrophic
Unable to find necessary tools for project; tools do not provide required functionality	low	serious
Bluetooth errors; Radio frequency interface	moderate	tolerable/moderate



# Risk analysis

## People risks

Risks	Probability	Effects
Group permanently loses one or more members: member sent to another group, withdraws from course, etc	low	serious
Group member not contributing	low	serious
Group doesn't function well as a team, disagreements within group	moderate	moderate
Group member gets sick or otherwise unable to contribute for a limited period	moderate	moderate
Group members of unequal skill level	moderate	tolerable



# Risk analysis

## Requirements risks

Risks	Probability	Effects
Clients dispute requirements or suddenly change requirements; Clients and group agree to requirements/changes without fully realising ramifications	low/moderate	moderate/serious
miss certain requirements	moderate	moderate/serious
Prioritisation not meet needs	moderate	serious



# Risk analysis

## Organisational risks

Risks	Probability	Effects
Discovery of underlying flaws in system design/architecture, but too late for effective restructuring	moderate	serious/catastrophic
Code not up to standard; mistakes made in coding and/or testing	moderate	serious



# Risk analysis

Estimation risks		
Risks	Probability	Effects
Underestimate budget/time taken for project/components	moderate	serious
Overestimate group skill level/productivity	moderate	moderate
Missed deadlines, misunderstood requirements	moderate	serious
Poor performance in presentations, etc.	moderate	serious



# Risk analysis

## Risks specifically for the scenario

Risks	Probability	Effects	Classification
Language barrier	low	tolerable	requirements risk
Cultural barrier	low	tolerable	requirements risk
Hospitality failure	low/moderate	tolerable/moderate	requirements risk
Tough deadline	high	catastrophic	estimation risk



# Analysis diagram

Probability  
High

Moderate

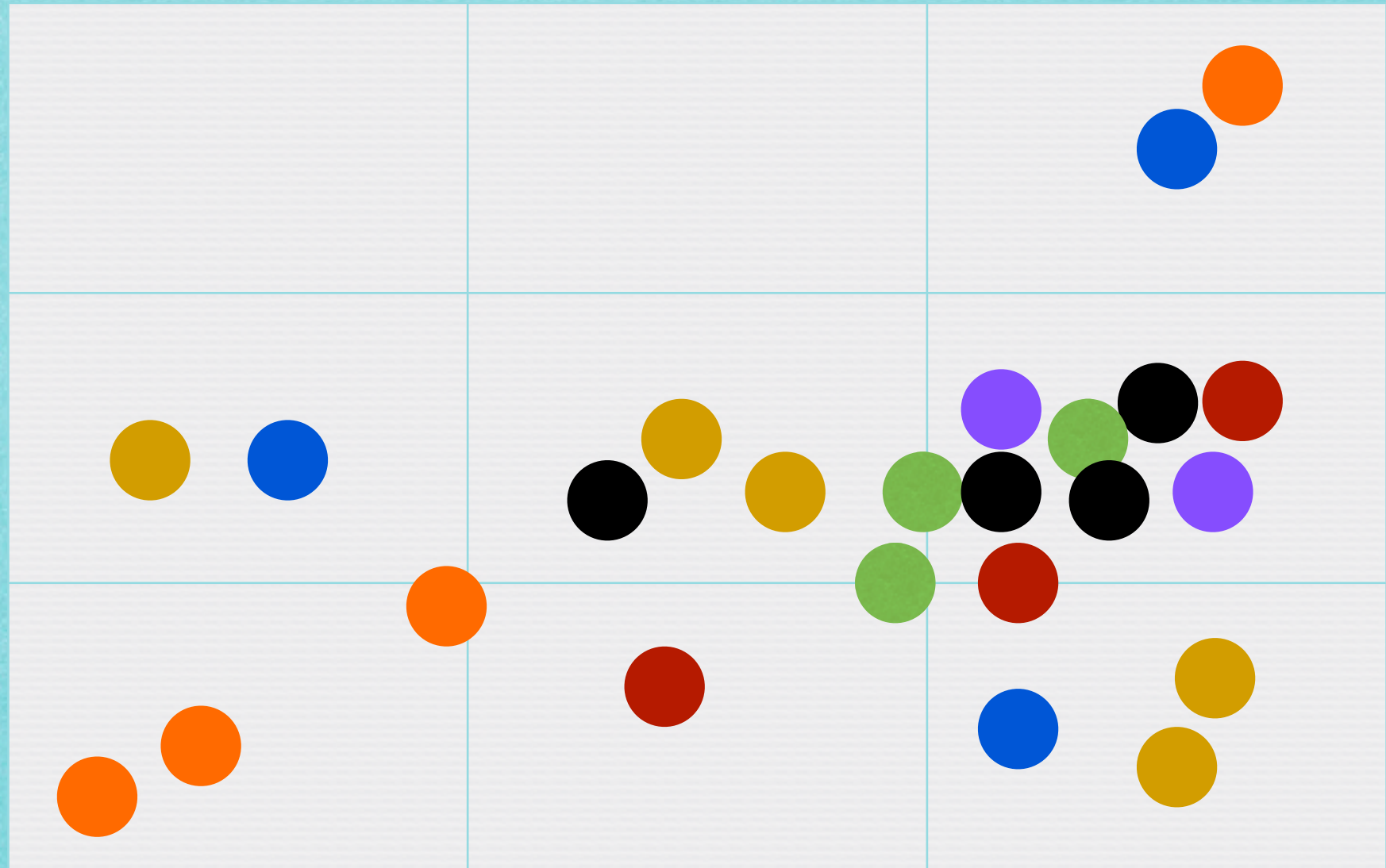
Low

Importance

Low

Medium

High





# *Risk Planning*



# Risk planning

## Technology risks

Risks	Strategy	Contingency
Problems inherent in using a new technology: communicating with device, learning new protocols, working with leJOS software, uploading programs etc.	Begin working with robot and associated tools ASAP	
Device doesn't function properly; device is damaged	Checking all parts on receipt of kit; taking due care with equipment	Alert lecturers ASAP, source replacement, liaise with lecturers to reschedule any missed presentations, etc.
Device/leJOS software has defects/flaws	Begin working with robot and associated tools ASAP	Program accordingly; work-arounds



# Risk planning

## Tool risks

Risks	Strategy	Contingency
Members are not proficient in using required tools; time required to become familiar with tools negatively impacts schedule	Begin researching and using tools ASAP. Each group member to research a tool associated with their role and give group a demonstration/tutorial	Seek assistance from someone proficient in using tools. In some cases, alternative tools or other work-arounds may be acceptable
Unable to find necessary tools for project; tools do not provide required functionality	Majority of required and useful tools have been specified	
Bluetooth errors; Radio frequency interface	sufficient tests before every demonstration	Wait or test until good



# Risk planning

## People risks

Risks	Strategy	Contingency
Group permanently loses one or more members: member sent to another group, withdraws from course, etc	keep frequent communication within group; all group members being informed about others' roles and tasks	Distribution of member's tasks amongst other group members
Group member not contributing	Fair distribution of roles and tasks according to skills and strengths, Group Manager to ensure all members are meeting responsibilities	
Group doesn't function well as a team, disagreements within group	Roles and responsibilities are well-defined; transparency, discussion and open decision-making; each area has one Manager to arbitrate	Role Managers and/or Group Managers resolve decisions
Group member gets sick or otherwise unable to contribute for a limited period	keep frequent communication within group; all group members being informed about others' roles and tasks	Distribution of member's tasks amongst other group members
Group members of unequal skill level	Fair distribution of roles and tasks according to skills and strengths, Group Manager to ensure all members are meeting responsibilities	



# Risk planning

## Requirements risks

Risks	Strategy	Contingency
Clients dispute requirements or suddenly change requirements; Clients and group agree to requirements/changes without fully realising ramifications	Careful requirements elicitation; confirmation of requirements	
miss certain requirements	Careful requirements elicitation; confirmation of requirements	
Prioritisation not meet needs	Emphasis prioritisation when requirements elicitation	



# Risk planning

## Organisational risks

Risks	Strategy	Contingency
Discovery of underlying flaws in system design/architecture, but too late for effective restructuring	Early discussion by whole group of system design, iterative process whereby changes can be incrementally made; modularity to order system and keep potential contained	
Code not up to standard; mistakes made in coding and/or testing	Careful testing regime, coding in pairs, peer review, clear Software Quality Attributes	



# Risk planning

## Estimation risks

Risks	Strategy	Contingency
Underestimate budget/time taken for project/components	Detailed breakdown of all tasks	Revision of scheduling, proposed deliverables, possible redistribution of tasks, and possible renegotiation of milestones
Overestimate group skill level/productivity	Modest goals; serious and careful consideration of milestones and deliverables	Revision of scheduling, proposed deliverables, possible redistribution of tasks, and possible renegotiation
Missed deadlines, misunderstood requirements	Project schedule includes all due dates; major tasks and deliverables divided into smaller deliverables with evenly distributed due dates	
Poor performance in presentations, etc.	Group runs through presentations to ensure all members are prepared	



# Risk planning

## Risks specifically for the scenario

Risks	Strategy	Contingency
Language barrier	We have Chinese members	
Cultural barrier	We have Chinese members	
Hospitality failure	ask hospitality requirements before clients come to Adelaide	Synchronisation of clients' hospitality requirements
Tough deadline	Plan a tighter schedule and work harder	



# *Risk Monitoring*



# Risk Monitoring

- ▶ Carefully identify emerging risk indicators
- ▶ Assess risks and risk changes
- ▶ Discuss risks on meetings and record risks



# Thanks a lot

► Q & A