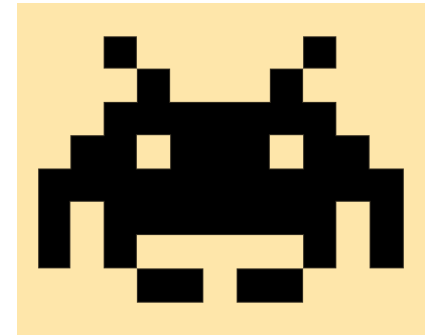




CSCI 1106

Lecture 07



Game Project and Project Management



Announcements

Summer School at the Department of Computer Science at Bonn-Rhein-Sieg University
from May 15 - June 30, 2015.

Two courses offered in parallel:

Effective Software Testing, 6 ECTS

Game Development, 6 ECTS

No course fee

<https://www.h-brs.de/de/inf/summer-school-brsu>

“A note taker is required to assist a student in this class. There is an honorarium of \$75/course/term, with some conditions. If you are interested, please go to the Advising and Access Services Centre, Killam G28 for more information or send an email to notetaking@dal.ca.”

Announcements

- Today's Topics
 - The Game Design Project
 - High-level game design
 - The Unifying Theme
 - The Game Story
 - Game Mechanics

Your Mission: Write a Video Game

- Come up with an idea for a game
- Design the game
- Implement the game in Scratch
 - If it is not a first-person action game, be sure to clear it with the instructor first!
- Test and polish your game
- Create a user manual for the game
- Create a technical manual for the game

Design Considerations

- What is the theme and objective of the game?
- How will the player move?
- How will the player win and lose?
- How will the player know how well they are doing?
- How will additional levels differ?
- How will you communicate the purpose, rules, and controls of the game?

Project Evaluation

F	No game.
D	Sprites are moving on the stage, some interaction between sprites but game is not playable.
C-	Player movement is successfully added to the game.
C	The game tracks collisions between the player and game objects and responds to them.
C+	The game has a clear objective (including the use of positive and/or negative game objects).
B-	The player is able to easily track their progress through the game (in the form of points or some other measure / approach).
B	Winning and losing the game are both possible and the game rules, purpose and how to play are clearly communicated to the player.
B+	The game includes multiple levels that increase in difficulty.
A-	The game has some polish (looks OK) and includes audio effects.
A	The game is polished (looks good) and has some interesting special effects.
A+	The game is highly polished (looks really good) and is compelling.

To achieve a certain grade you must also have all of the features of the lower grades.

Deliverables

- The game: .zip file
- The user manual (3 pages)
- The technical manual (7 pages)
- Presentation of your game during the presentation period

- The .zip file must be submitted before your presentation period (details to follow)
- All deliverables are due shortly after presentation day (date to follow)

The User and Technical Manuals

User Manual

- Contents:
 - Title page with screenshot
 - Game overview
 - Rules
 - How to play
- 3 pages, 11pt font
- Worth 20% of the written component
- Templates are available on course website
- Rubric is in the project specification

Technical Manual

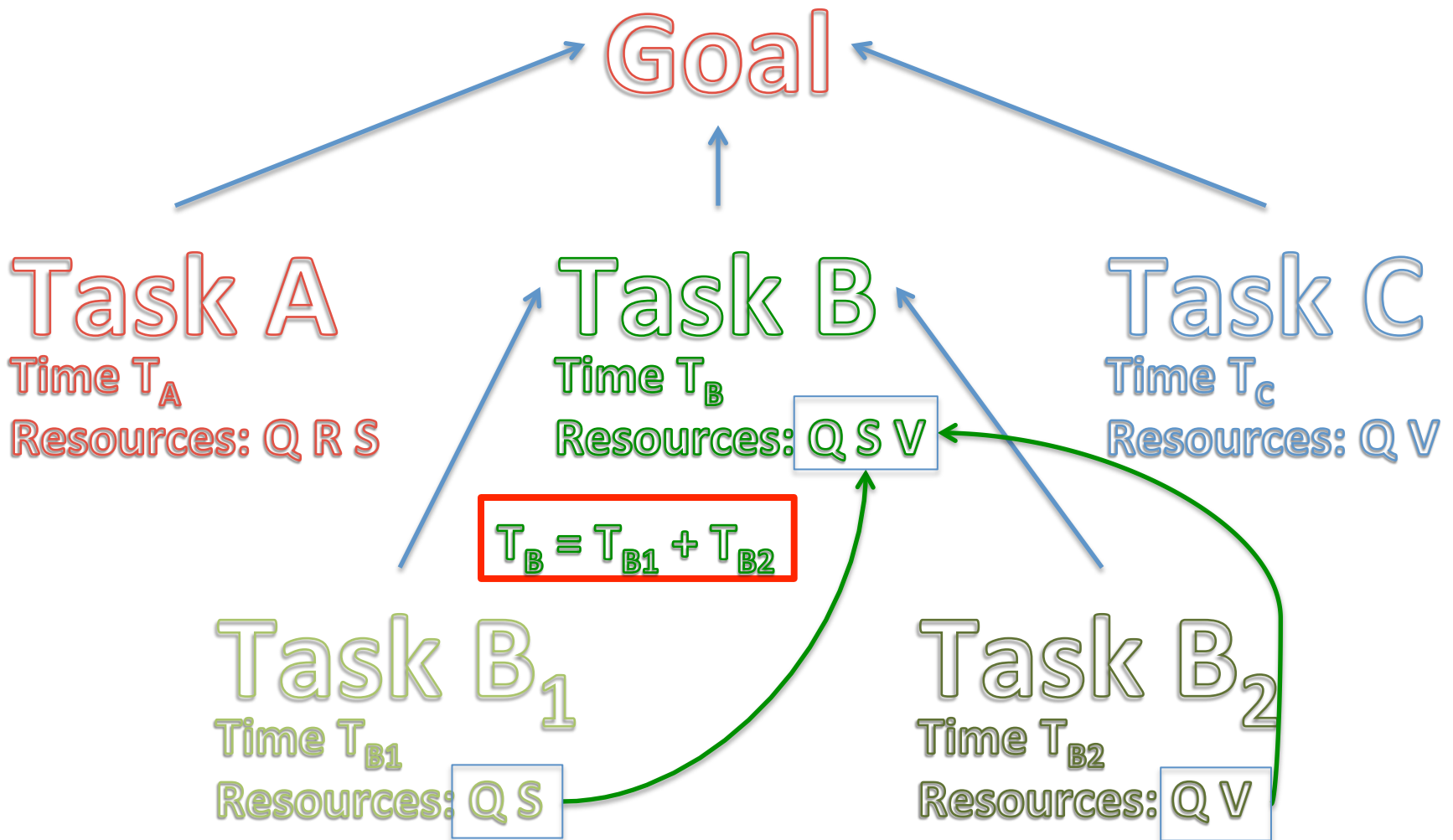
- Contents
 - Title and Authors
 - Introduction
 - Description of Concept
 - Description of Sprites
 - Description of Stage
 - High-level Description
 - Description of Important Scripts
 - Description of Artwork and Sound
 - Future Work
- 7 pages, 11pt font
- 80% of the written component

Project Management

Good read: MIT project management tutorial

<http://ocw.mit.edu/courses/mechanical-engineering/2-000-how-and-why-machines-work-spring-2002/tools/management.pdf>

Identifying Tasks



Scheduling Tasks & Allocating Resources



- Problem:
 - There are many tasks
 - There are many resources
 - Each task may have multiple dependencies
- Need to
 - Organize all of them in one place
 - Sort dependencies
 - Check for resource contention (i.e. capabilities)
- Idea: Use a Gantt chart

Gantt Charts

Resource	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	...
Resource 1	Task 4						
Resource 2		Task 1					
Resource 3				Task 3			
Resource 4				Task 3			
Resource 5			Task 2				
Resource 6							
Resource 7							
Resource 8	Task 4						
...							

Gantt Chart Rules

- Time is represented horizontally (left to right)
- Resources are denoted vertically
- A task requires both time and resources
 - Represented by one or more rectangles
- If two tasks require the same resource, they cannot overlap
- If task A depends on task B, task A must follow task B
- The minimum amount of time needed to fit in all the tasks is the minimum amount needed for the project

Resource	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	...
Resource 1	Task 4						
Resource 2		Task 1					
Resource 3				Task 3			
Resource 4							
Resource 5			Task 2				
Resource 6							
Resource 7							
Resource 8	Task 4						

Purpose of Gantt Chart

- Represent all tasks
- Represent resource use
- Represent dependencies
- Represent time of tasks

Resource	Period 1	Period 2	Period 3	Period 4	Period 5	Period 6	...
Resource 1	Task 4						
Resource 2		Task 1					
Resource 3				Task 3			
Resource 4							
Resource 5			Task 2				
Resource 6							
Resource 7							
Resource 8	Task 4						
...							

- Question: How do we know where to place what on the chart?

Three Main Issues

- Dependency chains
- Resource contention
- Risk management

Dependency Chains

- Task A depends on B depends on C depends on D ...
- Time of longest chain is the minimum time of the project
- Place longest chain first
- Then the next longest ...

Resource Contention

- Tasks cannot use a resource at the same time
- A *bottleneck* occurs when many tasks need the same resource
- Solution:
 - Stagger tasks to avoid resource contention
 - Add more resources to contention



Risk Management

- Things will take longer than you think!
 - What happens to our schedule if we cannot find a solution for software bugs?
- How do we accommodate this fact of life?
- Solutions:
 - Schedule tasks as early as possible to provide time to deal with unforeseen events
 - Schedule extra time for each task
 - 10% to 15% extra time per task is not uncommon