

Winter 2011

COSC 3P98 Assignment 3 mark breakdown

### **Q1: Fountain**

Basic fountain: **[tot = 35]**

- models for ground, fountain, particle [4]
- Engine
  - basic gravity, motion [10]
  - ground bouncing [4]
  - die eventually after falls off edge [4]
  - speed toggle S [3]
  - manual or stream generation F [3]
  - random spin toggle [3]
  - friction on ground toggle [3]
  - reset [1]

5 options from this list: **[tot 5 x 5 = 25]**

- water stream effect
- explode
- sparks when collisions
- lighting (normals, lights,...)
- collide with obstacles (fountain, other ground objects)
- textures
- viewer's eye is a particle
- particles have different colours, shapes, ...
- square hole in ground in which particles fall through
- inter-particle collision
- sound FX
- groovy effect (anything reasonable!)

Bonus options: **[3 marks per extra item in above list (max 21)]**

**Subtotal: 60 (up to max 81 with bonus)**

(See general list on p. 3)

Winter 2011

## **Q2: Swarm of insects**

### Basic flocking [**tot 35**]

- world model [2]
- insect model [2]
- basic flocking engine  
(destination, breathing space, social rule, prime directive) [15]
- leader insect (random destination) [4]
- speed toggle S [4]
- multiple insect generation [4]
- insect collision avoidance [3]
- reset [1]

### 5 options from this list [**tot 5 x 5 = 25**]

- colour states for insects
- smooth turning
- normals and lighting
- more flocking rules (mating? predator/prey?)
- textures
- viewer eye is an insect
- dart-shaped insects with front orientation
- speed acceleration/deceleration
- trails
- exploding insects
- sound FX
- groovy effect (anything reasonable!)

Bonus options: [**3 marks per extra item in above list (max 21)**]

**Subtotal: 60 (up to max 81 with bonus)**

(See general list on p. 3)

Winter 2011

General requirements [12]

- scene framed well in window [1]
- rotation of scene on x, y, z, mouse [1]
- glPerspective [1]
- glLookat [1]
- toggle point, wireframe, solid objects [2]
- toggle flat and smooth (Gouraud) [1] (note: might not be visible)
- backface culling [2]
- double buffer for animation [2]
- print out commands on DOS window, OR use GLUT menus [1]

Style: [8]

- adequate comments [2]
- modular code [2]
- good use of data structures, global structures [2]
- discretionary [2]

**General: 20 total**

**SUMMARY:**

**Application:** \_\_\_\_\_ ( tot 60 )

**General:** + \_\_\_\_\_ ( tot 20 )

**Bonuses:** + \_\_\_\_\_ ( max 21 )

**TOTAL** = \_\_\_\_\_ (base = 80, max= 101)