

CISC 1600, Final exam review sheet

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1 Unit 1: Web Programming & Web Design

1.1 HTML

1. Define “markup languages”.
2. There are 3 things that markup languages can be used for: what are they?
3. Define Tag, Element, and Attribute.
4. What are the 3 types of HTML tags?

1.2 CSS

1. There are 3 ways to include CSS on a page, what are they? What is the “best” way?
2. What the difference in CSS between a class and an id?
3. Create a custom class called “caution” that will make the text red with a font-size of 20px. This class needs to be able to be used by all tags.
4. Apply the custom class you created above to the word “special” below:
The word
special
has been formatted using a custom class.
5. Find and fix the errors in the following CSS code
h1 [
font-family; Verdana, sans-serif,
color; red,
font-size; 20px,
]
p, div, h2 [color; #00DDFF, width; 80%,]

2 Unit 2: Interactive Programming & Graphics

2.1 General

1. What is a programming paradigm?
2. Name three popular programming paradigms. Describe them.
3. Imperative languages are like “smart lists”. These smart lists need 3 things to function, what are they?
4. What is a protocol? Give one example of an Internet protocol.
5. Name one advantage and one disadvantage of using a client/server architecture?

2.2 JavaScript

1. Where do “client side” web scripts run?
2. Define ‘event listener’.
3. What’s wrong with the JavaScript in the following web page? How would you fix it?

```
<html>
<head>
<script type="text/javascript">
function displaymessage()
[
alert("HelloWorld!")
]
/ this is a comment
</script>
</head>
<body>
<input type="button" value="Click me!" onclick="displaymessage()"/> </body>
</html>
```

4. What does the webpage (after you have fixed it) above do?

2.3 Processing

1. How does processing implement the imperative concepts of “sequence”, “selection”, and “repetition”?
2. What is special about the draw() and setup() functions in processing?
3. What’s wrong with the program below? Fix the errors.

```
void setup() {
void draw() {
void keyPressed() {
if ( key == 'P' || key == 'p' ) {
point( 50, 50 )} else if ( key == 'L' || key == 'l' ) {
line( 10, 20, 30, 40 )
} else {
background( #ffffff )
}
```

4. What would the program above (now that you have fixed it) do if you pressed the ‘space’ key?
5. What’s the difference between a vector and a bitmap image?
6. What is an animation?
7. How does processing implement the event-driven paradigm?
8. How does processing implement the object oriented paradigm?

3 Unit 3: Game Programming

3.1 Scratch

1. What is a visual programming language?
2. What is an advantage of using a visual programming language?
3. What is one of the disadvantages of Scratch as a language (what sort of things can you NOT do in Scratch)?
4. How does Scratch implement the imperative concepts of “sequence”, “selection”, and “repetition”?
5. How does Scratch implement the object-oriented paradigm?
6. How does Scratch implement the event-driven paradigm?

3.2 Game design

1. Describe in one or two sentences the “Theory of Natural Funativity”?
2. When the “Theory of Natural Funativity” is applied to humans, we can identify three overlapping categories into which we can divide aspects of enjoyable gameplay. Name and give a brief description of each of these three abstract categories (or spheres of “game functionality”).
3. Along with the theory of funativity we examined concrete components or rules that can also be applied to games to make them more enjoyable. Briefly describe one of these rules that we discussed in class.
4. If you are going to include a narrative in your game, what should be the ultimate goal of that narrative?
5. We can define a game as a progression of “states”. Define “state”; give an example.

3.3 Game math

1. Give a brief description of the object overlap testing approach to collision detection in graphics and games.
2. We discussed two different methods for reducing the number of tests necessary when using object overlap testing. Name and describe one.
3. Object overlap testing is the most common method for collision detection, but it has limitations. Describe one of these limitations.

4 Unit 4: Agents, Simulations and Visualizations

1. What is an agent?
2. If we were to consider Scratch sprites as agents, name 2 sensors and 2 effectors available to them
3. How does NetLogo implement the object oriented paradigm?
4. what is the difference between a simulation and a visualization?
5. We discussed two properties the defined “multi-agent” systems. Name and describe one.

6. We discussed two advantages to using multi-agent systems (i.e., two specific reasons to use them). Name and describe one of them.
7. Simulations are complex computer models (usually) built using agents. Why bother creating a simulation?
8. For each numbered component of the agent in the following picture, provide a label as to what it is and a description or example of what is happening in that part of the agent.

