ICD2O0 Sample Final Exam

Digital Technology and Innovations in the Changing World
Friday January 17, 2024
Period 1, Room 129
Ms. Gorski

6 Question Pages
16 Questions
70 minutes
8:25 – 9:40

Name (first and last): _____

Signature: _____

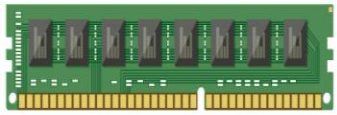
Total: _____ **/ 100**

Instructions:

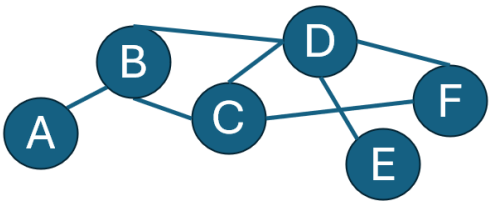
- Students should answer all questions directly on the exam paper.
- Students may write in pencil or black pen or dark blue pen.

- Extra paper is permitted, but probably won't be needed.
- Water is permitted.
- Additional materials, such as bags, coats, and phones, are not permitted at the student's desk during the exam. They may be left at home, or in the student's locker, or at the front of the room.
- No phones or other electronic devices are permitted. Smart watches, headphones and earbuds are not permitted at the student's desk. These devices must be left in the student's bag at the front of the room.

1. Identify each of the following: /4


2. Identify the following in this diagram. /6

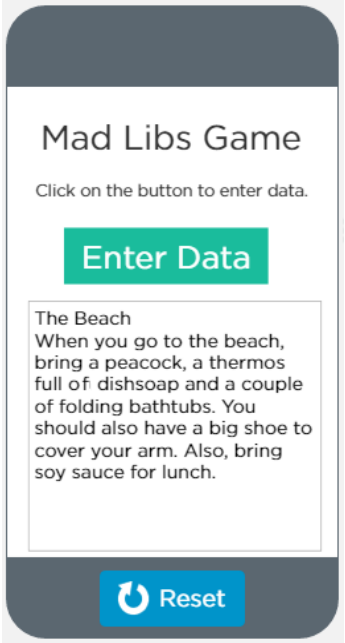


a)	#Nodes	
b)	#Edges	
c)	Degree of Node B	
d)	#Nodes with Odd Degrees	
e)	#Nodes with Even Degrees	
f)	Has an Euler Path? (y/n)	

3. Identify the ergonomic issue caused by each clue /4

(a) Using your headset at max volume.	(b) Typing on a keyboard at a strange angle.	(c) Using a Nintendo console without a break.	(d) Texting for hours and hours each day.

4. Fill in the blanks in the Mad Libs story after looking at the output below. /6



Prompts: (answers in italics)

Enter a noun: *peacock* Enter another noun: *bathtubs* Enter a liquid: *dishsoap*	Enter an article of clothing: *shoe* Enter a food: *soy sauce* Enter a body part: *arm*

Code:

```
onEvent("enter", "click", function(event) {
var noun = prompt ("Enter a _________: ");
var noun2 = prompt ("Enter ______________________________: ");
var liq = prompt ("Enter a _________________: ");
var cloth = prompt ("Enter an ______________________________: ");
var food = prompt ("Enter a __________: ");
var body = prompt ("Enter a ____________________: ");

var words = "The Beach \n";
words = words + "When you go to the beach, bring a " + _______;
words = words + ", a thermos full of "+_____+" and a couple ";
words = words + "of folding " + _________+". You should also ";
words = words + "have a big "+________+" to cover your "+_____;
words = words + ". Also, bring "+_________+" for lunch.";
setText("answer", words);
});
```

5. What is outputted on the screen after each line of code runs? Put one character in each box. /4

```
var name = "Rae";
var age = 4;
var result = age*3;
```

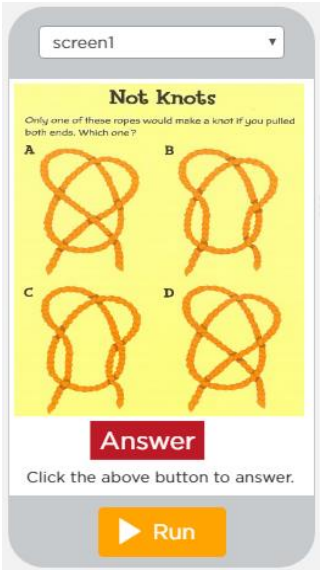
`setText("id", "R="+result);`											
`setText("id", age + " years old");`											
`setText("id", age + "years old");`											

6. What is printed on the screen for each of the following values of n? /6

```
onClick("enter", "click", function(event){
    var n = promptNum ("Value? ");
    if (n == 9)
        setText("result", "Leaf");
    else if (n >= 8)
        setText("result", "Cold");
    else if (n < 7)
        setText("result", "Fall");
    else
        setText("result", "Maple");
});
```

Value of n?	Output
5	
6	
7	
8	
9	
10	

7. This is the code for the "Not Knots" game shown. Fill in the blanks. /5




```
onEvent("answer", "click", function(event) {
  var ans = prompt("Which one is a knot?");
  if (_____=="A")
     setText("result", "Your final answer?");
  else ______ (ans=="____")
    setText("result", "Try again.");
  _______ if (ans=="C")
    setText("_____________", "YES!!! That's it.");
  else
    _____________("result", "Hmmm.... no.");
____;
```

8. Fill in the loops to print these 2 patterns. /4

```
    3 6 9 12 15 18 21 24 27 30

onEvent("button1", "click", function(event) {
  setText("output","");

   for (var i = ______; i _______; i______) {
    setText("output", (getText("output")+" ")+i);
  }
});
```

```
    50 49 48 47 46 45 44 43 42 41

onEvent("button2", "click", function(event) {
  setText("output","");

   for (var i = ______; i _______; i______) {
    setText("output", (getText("output")+" ")+i);
  }
});
```

9. Fill in the text variable in the memory diagram. /4

```
var n = "4 Privet Drive";
```

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]

Based on the above variable, match the code to its output. Write the letter in the FIRST column.

	2	a) setText("output", n.length);
	4	b) setText("output", n.indexOf ("P"));
	5	c) setText("output", n.indexOf ("v"));
	14	d) setText("output", n.charAt (0));
	e	e) setText("output", n.toUpperCase ());
	Privet	f) setText("output", n.toLowerCase ());
	Drive	g) setText("output", n.charAt (n.length-1));
	4 privet drive	h) setText("output", n.substring (9, 14));
	4 PRIVET DRIVE	i) setText("output", n.substring (2, 8));

10. Fill in the memory diagram. Then, write the code to get each piece of output shown. /6

```
var h = "The Sorting Hat";
```

[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]

(a)	The	setText("output",
(b)	Sorting	setText("output",
(c)	Hat	setText("output",
(d)	15 **//the length**	setText("output",
(e)	4 **//where S appears**	setText("output",
(f)	a	setText("output",
(g)	the sorting hat	setText("output",

11. (a) What are the parts of a loop? /6

A	I L S V
B	T L S C
C	S T R
D	P T T L S C

(b) On the following loop, use the letters from part a to label each circled part.

```
for (var i = 5; i < 60; i+=10) {
setText("output", (getText("output") + " " + i);
}
```

12. Name three computer security solutions that might be used in a home (low-risk setting). /3

1	
2	
3	

13. Fill in the words that match the descriptions given. /10

	a) The malware that caused the Northeast Blackout of 2003.
	b) A type of hacking that has never been used before.
	c) An Ontario organization that was D-Dosed in 2016.
	d) A hacker who controls a botnet.
	e) A form of malware that can spread itself.
	f) An attack by a nation-state (country) using malware or hacking.

	g) Rules that all network users must follow.
	h) Computers not connected to a network for security reasons.
	i) A term for a company that gathers your data and sells it.
	j) The state of being free from being observed by other people.

14. Look at the following and answer the data miner's questions. /7

PlayerGame

PlayID	GameID
12	1
14	1
15	1
12	2
15	2

Game

GID	Name	Rating
1	Minecraft	78
2	Pokémon	95

Player

PID	First	Last
12	Jean	Poole
14	Ella	Vader
15	Jo	King

a)	Which game has the highest rating?	
b)	What is player #15's last name?	
c)	Which game has the most players?	
d)	What are the names of the two people playing Pokémon?	
e)	Does Ella Vader play Minecraft?	

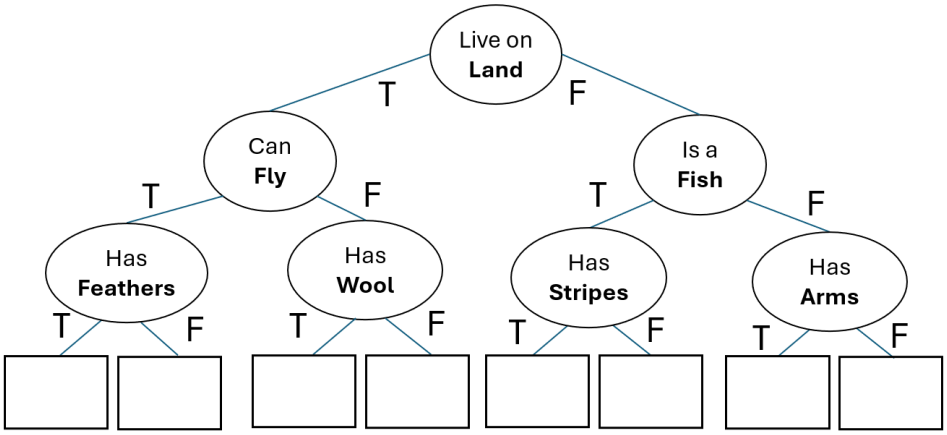
(a) What is one positive feature of datamining for gamers?

. . . . . .

(b) What is one negative feature of datamining for gamers?

. . . . . .

15. (a) Fill in the blanks to make the program to build the binary search tree. /10



(b) Then, use your binary search tree to fill in the program.

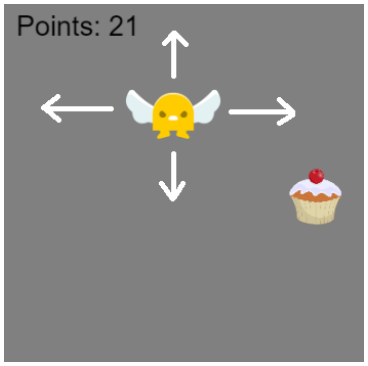
```
onEvent("start", "click", function( ) {
  Land();
});
//AI Question Functions -----------------
function Land() {
  var ans = prompt("Live on Land? (T/F)");
  if (ans == "T") {
    Fly();
  } else {
    Fish();
  }
}
function Fly() {
  var ans = prompt("Can Fly? (T/F)");
  if (ans == "T") {
      Feathers();
  } else {
       Wool();
  }
}
function Feathers() {
  var ans = prompt("Have Feathers?
(T/F)");
  if (ans == "T") {
    __________();
  } else {
    __________();
  }
}
function Wool() {
  var ans = prompt("Have Wool? (T/F)");
  if (ans == "T") {
    ___________();
  } else {
    ___________();
  }
}
function Fish() {
  var ans = prompt("Is a Fish? (T/F)");
  if (ans == "T") {
    ____________();
  } else {
    ____________();
  }
}
```

```
//Code Continued:

_________________ Stripes() {
  var ans = prompt("Have Stripes? (T/F)");
  if (ans == "T") {
    _________________();
  } ____________ {
    _________________();
  }
}
function Arms() {
  var ans = prompt("Has Arms? (T/F)");
  if (ans == "T") {
    _____________();
  } else {
    _____________();
  }
}
//Animal Functions (Leaves) ------------
function Turkey() {
 setText("output", "Turkey");
}
_________________ Bat() {
 setText("output", "Bat");
}
function Sheep() {
 setText("output", "____________");
}
function Dog() {
 setText("output", "____________");
}
function TropicalFish() {
 setText("_________________", "Fish");
}
function BlowFish() {
  _________________("output", "BlowFish");
}
function Octopus() {
 setText("output", "_________________");
}
function Whale() {
 setText("output", "_________________");
}
```

16. In the game "Cupcake Munch" the goal is to eat 25 cupcakes. /15

- The character is always moving.
- If the character hits the wall, they bounce in the opposite direction.
- If the player presses a, the character's direction changes to left, d to right, w to up and s to down. Then it keeps moving in that direction.
- If the cupcake is touched, it moves to a random location on the screen and the user gets a point.
- If you reach 25 points, "You Win!" appears in position 200, 200 and all sprite movement stops.



Use the above information to fill in the blanks.

```
//Make the points variable set to 0
[                                    ]
var sprite = createSprite(100, 300);
sprite.setAnimation("wing_bot");
sprite.velocityX = 0;
sprite.velocityY = -5;
var target = createSprite(randomNumber(50,
             350),randomNumber(50,350));
target.setAnimation("cupcake");

function draw() {
  background("grey");
[                                    ]
    ____________________________();

  if (keyDown("a") || sprite.x>380) {
    sprite.x -= 5;
    sprite.velocityX=-5;
    sprite.velocityY=0;
  }
  else if (keyDown("d") || sprite.x<20) {
[                                    ]
      sprite.x += _______;

      sprite.velocityX= _____;

      sprite.velocityY= _____;
[                                    ]
  }
  else if (keyDown("w") || sprite.y>380) {
[                                    ]
      sprite.y -= _______;

      sprite.velocityX= _____;

      sprite.velocityY= _____;
[                                    ]
 }
```

```
//draw loop continued
  else if (keyDown("s") || sprite.y<20) {
[                                    ]
   ____________.___ += _______;

   sprite.velocityX= _____;

   sprite.velocityY= _____;
[                                    ]
  }
  if(sprite.isTouching(target)){
//move the target to a random location,
// and increase the score
[                                    ]
  _________.___ = randomNumber(_____,____);

  _________.___ = randomNumber(_____,____);

  ____________________________________
[                                    ]
  }
 text("Points: "+points, 20,40);

//if they have enough points, stop the sprite
// and print "You Win!"
[                                    ]
  if(_______________>=_______) {

      sprite.velocityX= _____;

      sprite.velocityY= _____;

      text("_____________",______, ______);

}
[                                    ]
}
```