Computer Programming 12

Please read each portion of the following pages carefully. It must be completed in full before you are placed in the active class. It's worth 100 marks and makes up 5% of your overall grade. Please answer right on this form.

Course Selection/Student Learning Plan (SLP) Form

Answer the following questions and fill in the chart below. Don't forget to date and sign the page.

1) Why have you selected this course and how does it fit into your Educational Goals?

As I learned more and more about programming, I started to get more and more interested in it. Now I find I can do many complicated programming tasks and look forward to learning more skills in this new course. I am also planning to apply into engineering so having vital skills in programming would be useful in the future.

2) What grade are you currently in?

Currently in Grade 11

In the following chart fill in any grade 10, 11 and 12 courses you have **already completed = C** or are **currently taking/are in progress = IP**. If there are courses you have not taken yet simply **leave it blank**.

Required Courses…

GRADE 10	C/IP	GRADE 11	C/IP	GRADE 12	C/IP
English 10 (two 2-credit	C	Any English 11 course	IP	Any English 12 course	
Any Mathematics 10 credit		Explorations in Social Studies 11		Career Life Connections 12	
Physical and Health Education 10	C	Any Science 11 course	IP		
Career Life Education 10		Any Mathematics 11course	C		
Social Studies 10					
Science 10	C				
List **ONE** Fine Arts/Applied Skills course from grade 10, 11 or 12:				Creative Arts	C

Elective Credits…

GRADE 10	C/IP	GRADE 11	C/IP	GRADE 12 (Minimum 3 courses)	C/IP
Psychology	C	Creative Arts	C		
Business/Economics	C	Philosophy	C		
History	C	Chemistry	IP		
		Biology	C		
		Japanese	IP		
		Computer Programming	C		

*You can add more rows by clicking into the last box (bottom right) and clicking on the **Tab** key.*

Student's/Parent's E-Signature: Ho Leung Chan Date: 26/1/2023

Student's Full Name (Please Print): Anson Chan Email: ananryry180@gmail.com

Date of Birth (Month,-Day,-Year): 05/09/06 PEN (MUST be 9-digits): 146701776

NOTE: For the E-Signature you can simply type in the name.

Course Information:

Please read the following information with regards to your course.
https://curriculum.gov.bc.ca/curriculum/adst/12/computer-programming

Prescribed Learning Outcomes
Please review the Ministry of Education's Prescribed Learning Outcomes for Computer Programming 12:

Resources
All the resources are available online.

Assessment
The Computer Programming 12 course is graded as follows:

a. 70% - **Assignments and Online Quizzes**
b. 30% - **Capstone Project**

Course Timeline

The following timeline will be used in this course.

Course Topics/Units	Approximate Date I Intend to complete.
Start Date (The Day You Enrolled)	Jan 26
1. Module 1 Different Types of Data	Feb 3
2. Module 2 Data Structures	Feb 17
3. Module 3 Algorithms	March 3
4. Module 4 Data Persistence	March 17
5. Module 5 GUI's	March 31
6. Module 6 Cap Stone Project	April14

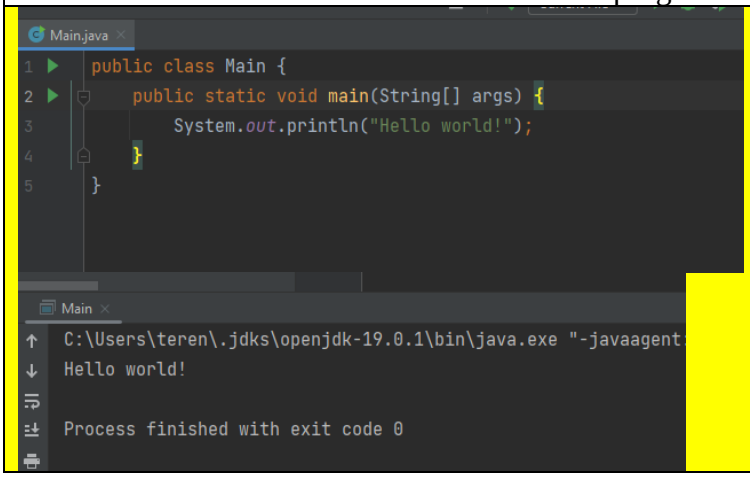
The Assignment

Email and Image Profile

1. Add an image that represents you to your profile. If you enjoy sports then add a sports image. Go to My Home > Profile > Change Picture
2. Add a signature (your name) to your VLN Email. Go to Email tab > Settings.
3. Forward your incoming VLN email to your external email address. Go to Email tab > Settings (Forwarding Options).

Questions

1. Take a screen shot of a "Hello World" program in Intelij using Java.



2. What are different behaviours between reference data and primitive data? Use an example.

Primitive variable:
- Store values
- Cannot be null
- When assigning variables, the values are copied
- For comparison (==), the values are compared

Reference variable:
- Store the "memory location" of the data
- Can be null
- When assigning variables, the "references addresses" are copied instead.
- For comparison (==), the "reference addresses" are compared

For example, I created a class as follows:

```
public class Person{
    String name;
    Person(String input){this.name = input;}
}
```

For the following code

```
// For reference variable
     Person A = new Person("Ann");
     Person B = new Person("Ben");

     B = A;
```

```
     System.out.println(B.name); // B's name is Anne
     A.name = "Dale";  // Change A's value
     System.out.println(B.name);   // B's name changed to Dale now



 // For primitive variable
     int a = 10;
     int b = 20;
     b = a;
     System.out.println(b); // b's value is 10
     a  = 30;  // Change a's value
     System.out.println(b);   // b's value unchanged
```

The output is

```
Ann
Dale
10
10
```

3. Write a simple program in Java that can do the following: (Screen Shot of code will suffice)
   Ask the user how many hot dogs they want to buy.
   Ask the user how many drinks they want to buy.
   Print out the total they owe including taxes (12%) $3.50 for hotdogs and $1.00 for drinks.

```
public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.println("How many hotdogs do you want?");
    int hotdogs = scanner.nextInt();
    System.out.println("How many drinks do you want?");
    int drinks = scanner.nextInt();

    double total = (hotdogs*3.5 + drinks)*1.12;
    total = Math.round(total * 100.0) / 100.0;
    System.out.println("Total you owe $" + total);
}
```

Outcome is

```
How many hotdogs do you want?
2
How many drinks do you want?
3
Total you owe $11.2
```

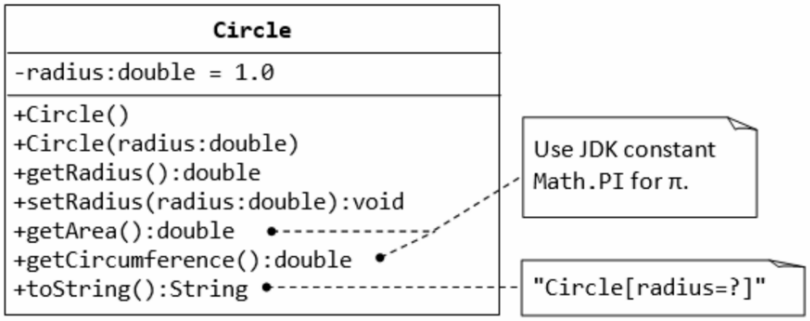
4. Write code that makes an array that holds integers. Fill it with random numbers then reverse the order of the array using a for loop. (Screen shot)

```java
public class Main {
    public static void main(String[] args) {
    question4();
    }
    public static void question4(){
        int arraySize=5;
        int numbers[] = new int[arraySize];
        int reverseNumbers[] = new int[arraySize];

        Random rand = new Random();   // obj to generate random number

        for (int i=0; i<arraySize ; i++ ){            // generate random array
            numbers[i] =     rand.nextInt( bound: 9);
        }
        System.out.println("The random array is ");    // print array
        System.out.println(Arrays.toString(numbers));

        for (int i=0; i<arraySize ; i++ ){            // reverse the array
            reverseNumbers[arraySize-1-i] = numbers[i];
        }

        System.out.println("The reverse random array is ");  // print reversed array
        System.out.println(Arrays.toString(reverseNumbers));
    }
```

Outcome is:

```
The random array is
[0, 5, 7, 8, 4]
The reverse random array is
[4, 8, 7, 5, 0]
```

5. Create the following Data Type: (Screen Shot)




```java
public class Circle{
    private double radius = 1.0;

    public  Circle(){this.radius = 1.0;}
    public  Circle(double r){setRadius(r);  }
    public double getRadius(){ return this.radius;}
    public void setRadius(double r){this.radius = r;}
    public double getArea(){ return this.radius*this.radius * Math.PI;}
    public double getCircumference(){ return 2*this.radius * Math.PI;}
    public String toString(){return "Circle[radius=" + Double.toString(radius) + "]";}

}
```

6. What would be the output of the following:

String name = “John Carmack”;
System.out.println(name.substring(6));

Answer
“armack” will be printed out

7. What would be the output of the following:
int x = 20;
int y = 15;
boolean z = false;
System.out.println(!z || x < y);

Answer
The Boolean value true will be printed out.

8. Create a github repository for this course called *YourName*Programming12 (Link)

Link
https://github.com/ansonc314/AnsonC-Programming/tree/main/Anson%20Programming12

9. Write a program that can determine what quandrant a coordinate falls. (github link)
Use scanner to read 2 lines of code from keyboard inputs, the first line is the x-coordinate and the second line is the y-coordinate
determine which quadrant it falls in by printing out “Quadrant #”

Link
https://github.com/ansonc314/AnsonC-Programming/tree/main/Anson%20Programming12/startup/question9

10. Write a program that can solve the following program: (Github Link)
Scanner takes in a text file called “happyorsad.txt”
Reads 1 line of text
Detects if there is a happy emoticon :-) or a sad emoticon :-(
Outputs the following:
None detected print none
equal amount print unsure
more happy than sad print happy
more sad than happy print sad

Link
https://github.com/ansonc314/AnsonC-Programming/tree/main/Anson%20Programming12/startup/question10

11. What programming experience if any do you have?

Answer
Learn Java in the programming 11 course. Also, Scratch as well when young

12. Why does learning about programming interest you?

Answer
Learning programming is interesting. It is like building Lego. As I learned more, I found that I can do a lot of things using computer. In the last course, I learned to create a program for storing passwords. The experience was great knowing I can create something

useful for my own use.

13. Do you intend to pursue a career in computer science?

Answer
It is one of my choices, other than engineering (which also requires programming skills)

14. What topics about computer science interest you the most?

Answer
Artificial Intelligence, e.g., how computer can learn to solve a problem itself

15. A logic Puzzle

A company employee generates a series of five-digit product codes in accordance with the following rules:
The codes use the digits 0, 1, 2, 3, and 4, and no others.
Each digit occurs exactly once in any code.
The second digit has a value exactly twice that of the first digit.
The value of the third digit is less than the value of the fifth digit.

If the last digit of an acceptable product code is 1, it must be true that the
(A) first digit is 2
(B) second digit is 0
(C) third digit is 3
(D) fourth digit is 4
(E) fourth digit is 0

Answer (A) first digit must be 2. The product code is 24031

Anti-Plagiarism Student Contract

I, **Anson Chan,** understand that VLN has a zero tolerance policy on plagiarism. Plagiarism is presenting someone else's work (or parts of someone else's work) as though it is my own. I understand that if I am found to be plagiarizing, I will receive a zero for that assignment. Repeated offenses will result in failure or withdrawal from the course or school.

Dated: January 28, 2023

Formal procedures for cases of plagiarism:
First incident: Student receives zero on assignment and must contact teacher by email immediately.

Second incident: Student receives zero on assignment and must make an appointment to see the teacher in person.

Third incident: Student fails or is withdrawn from course and/or school.

Assignment Feedback

Course Name: Computer Programming 12
Student Name: **Anson Chan**
Feedback Date: January 28, 2023
Mark: %

Teacher Comments:

Ok, I am done the assignment, what do I do now?

- First step is to SAVE AS and name the file ***StartUp_LastnameFirstname_CP12.doc***
- Next step is to upload to the ASSIGNMENTS in your classroom.
- The teacher will then mark your assignment, provide you with feedback and then begin the process open the whole course to you.