Started on	Thursday, 20 July 2023, 14:06
State	Finished
Completed on	Thursday, 20 July 2023, 14:20
Time taken	13 mins 43 secs
Grade	13 out of 20 (83%)

Question 1
Incorrect
Mark 0 out of 1
Flag question

Which of the following answers best describes what a cross-compiling compiler and a self-compiling compiler achieve:

Select one:
- A cross-compiler compiles code for a different host to that on which it runs, whereas a self-compiling compiler is itself written in the source language that it compiles
- A cross-compiler can never be a self-compiling compiler
- A cross compiler can only generate code for the host system, i.e. the system on which it runs
- A cross-compiler compiles code for a different host to that on which it runs, whereas a self-compiler compiles code for the host on which it runs ✗

Your answer is incorrect.
The correct answer is: A cross-compiler compiles code for a different host to that on which it runs, whereas a self-compiling compiler is itself written in the source language that it compiles

Question 2
Incorrect
Mark 0 out of 1
Flag question

Which of the following methods is NOT included in the IntSet library?

Select one:
- copy()
- excl()
- isMember()
- isFull()
- union() ✗

Your answer is incorrect.
The correct answer is:
isMember()

Question 3
Incorrect
Mark 0 out of 1
Flag question

What is stored in the IR variable in a stack-based computer (i.e. Parva virtual machine)?

Select one:
- The value at the top of the stack
- A pointer to the next instruction to be interpreted in memory ✗
- The instruction being interpreted
- A pointer to the base of the stack

Your answer is incorrect.
The correct answer is: The instruction being interpreted

Question 4
Partially correct
Mark 2 out of 2
Flag question

In practical 1 you used a number of systems programs. Classify the type of program used when executing the following commands in the practical:

parva2ToJava sievepav.pav	high-level translator ✓
oolong Sieve.j	assembler ✓
jad Sieve.class	decompiler ✓
javac sievej.java	native-code compiler ✗

Your answer is partially correct.
You have correctly selected 3.
The correct answer is: parva2ToJava sievepav.pav → high-level translator, oolong Sieve.j → assembler, jad Sieve.class → decompiler, javac sievej.java → interpretive compiler

Question 5
Partially correct
Mark 2 out of 3
Flag question

When compiling the SievePAV.pav source code in practical 1, several syntax errors needed to be fixed. Select only three (3) of the given options that match some of the errors you fixed.

Select one or more:
- [ ] Added a missing ';' at the end of the file
- [x] Replaced the unsupported mod operator with suitable code ✓
- [ ] Removed the incorrect "do" keyword from the while loop
- [x] Replaced the end-of-comment delimiter "*/" with "/*" ✗
- [ ] Replaced all incorrect assignment operators "=" with the correct version ":="
- [x] Replaced the unsupported operator "+=" by rewriting the code as "k=k+1" ✓

Your answer is partially correct.
You have correctly selected 2.
The correct answers are: Removed the incorrect "do" keyword from the while loop, Replaced the unsupported operator "+=" by rewriting the code as "k=k+1", Replaced the unsupported mod operator with suitable code

Question 6
Partially correct
Mark 1 out of 2
Flag question

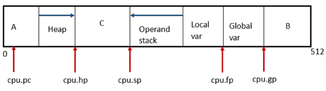
When using the Parva to Java translator, you should have noticed that the Java code produced differed somewhat from the original parva code. Select the answer that BEST explains how the Java code differed.

Select one:
- It contained no comments and more braces {} than the Parva code
- It contained more comments than the original Parva code
- It contained more braces {} and more comments than the Parva code
- It contained more braces {} than the Parva code ✓

Your answer is partially correct.
The correct answer is: It contained no comments and more braces {} than the Parva code

Question 7
Correct
Mark 2 out of 2
Flag question

Considering the illustration of memory for the PVM given below, match the memory areas to what is likely to be stored in each while the PVM interpreter is executing.



According to the diagram given, which memory area contains nothing?	Area labelled C ✓
In which memory area is the program code stored?	Area labelled A ✓

Your answer is correct.
The correct answer is: According to the diagram given, which memory area contains nothing? → Area labelled C, In which memory area is the program code stored? → Area labelled A

Question 8
Incorrect
Mark 0 out of 1
Flag question

In practical 1, you made use of a batch script csharp.bat.
What code is executed when running this script?

Select one:
- csharp %1 %2 %3 %4 %5 %6
- None of the answers is correct
- csharp sieve.cs
- csc @include 1% %2 %3 %4 %5 %6
- csc @include sieve.cs ✗

Your answer is incorrect.
The correct answer is:
csc @include 1% %2 %3 %4 %5 %6

Question 9
Correct
Mark 1 out of 1
Flag question

What mathematical problem does the Sieve of Eratosthenes solve?

Select one:
- None of the answers given is correct
- Counts the number of prime numbers smaller than a given value
- Calculates all prime numbers smaller than a given value ✓
- Calculates the Fibonacci sequence for a given value

Your answer is correct.
The correct answer is:
Calculates all prime numbers smaller than a given value

Question 10
Complete
Mark 2 out of 3
Flag question

In your own words, briefly (max 3 sentences) explain how the algorithm known as the Sieve of Eratosthenes works.

It starts with an empty list/array/set/etc, and each time it reaches a number it checks if its in that list. If it is in said list, skip it, else it is a prime number, then add all multiples of that number to the list made at the start. By doing this, all multiples will never be counted and thus the only numbers left will be prime as they have no multiples but 1 and theirself.
Note: This example does not store the prime numbers only counts them but if we stored the value when it fails the if statement,we can create a list of primes.

Comment:
How do you reach a number if you start with an empty array? In fact you don't start with an empty array -- your start with a list of numbers you want to check. You have to explain how you get to the numbers that you check. Mark changed after the discussion but in future be sure that what you write makes sense to the marker

Question 11
Correct
Mark 3 out of 3
Flag question

Match the following definitions with the most suitable class of translator:

A translator that converts one high level language into another high level language	High level translator ✓
A translator that takes object code at a low level and regenerates the source code in a high level language	Decompiler ✓
A translator that maps low-level language constructs to machine code	Assembler ✓

Your answer is correct.
The correct answer is: A translator that converts one high level language into another high level language → High level translator, A translator that takes object code at a low level and regenerates the source code in a high level language → Decompiler, A translator that maps low-level language constructs to machine code → Assembler

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PREVIOUS ACTIVITY
Prac 2 solution

NEXT ACTIVITY
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