

MTS 3053 PROGRAMMING PARADIGM

MID TERM TEST (30%)

DURATION: 2 HOURS INCLUDING SUBMISSION PERIOD

Answer all the questions (marks – 30)

Submit your answer in the pdf file thru myGURU

Question 1

High level programming paradigm can be categorized into imperative and declarative paradigms. What is the different between the paradigms? States 1 example of programming language for each paradigm.

[4 marks]

ANSWER

The difference between declarative and imperative paradigms is the declarative paradigm is a programming paradigm that expresses the logic of a computation without describing its control flow. However, the imperative programming is a programming paradigm that uses statement that changes the program's state. For the main focus, declarative paradigm focuses on what the program should accomplish but for the imperative paradigm focuses on how the program should achieve the result. For the flexibility and complexity, the declarative paradigm provides less flexibility and declarative paradigm simplifies the program. However, the imperative paradigm provides more flexibility and imperative paradigm also can increase the complexity of the program. Lastly, the difference between declarative and imperative paradigm is from their categorization, for the declarative paradigm, they categorize on functional, logic, query programming. For the imperative paradigm, they categorize on procedural and Object Oriented programming.

Declarative paradigm is a programming paradigm that expresses the logic of a computational without describing its control flow. For example, asking your friend to fix your car. You don't care how to fix it, that's up to her.

Imperative paradigm is a programming paradigm that uses statement that change a program's state. For example, your friend calling you father that tells her how to fix your car step by step.

Question 2

In C++ programming language, assignment and equal operators are different. Explain the differences between the operators. Give a simple example in your explanation.

[5 marks]

ANSWER

The difference between assignment and equal operators is the assignment operator symbol is like [=] and can be used to assign the value on the right to the variable on the left. For the equal operator, the symbol is like [==] and can be used to checks whether the two given operands are equal or not. If so, it return. Otherwise, it returns false. Equal operator also can be pronounce as rational or comparison operator.

The assignment operator defined that constant term cannot be placed on left hand side. For example, 1=x; is invalid.

However, the equal operator defined that constant term can be placed in the left hand side. For example, 1==1 is valid and returns 1.

Question 3

Write a C++ program to display the following output on the screen.

What is your name: Johana

What is your cgpa : 4.00

[5 marks]

ANSWER

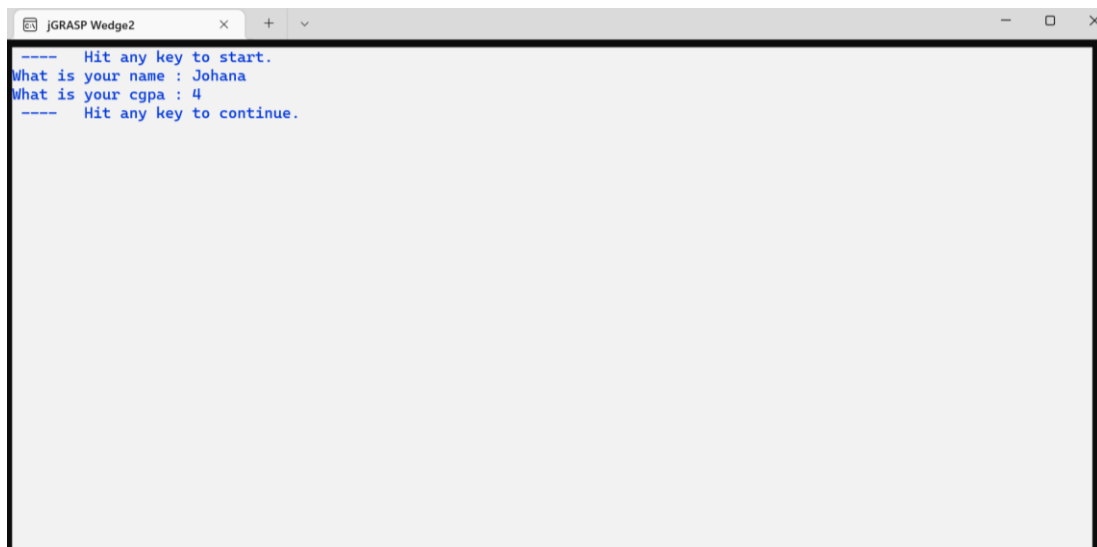
```
//C++ program to display a following output

#include <iostream>
using namespace std;

void main()
{
    string name = "Johana";
    double cgpa = 4.00;

    cout<< "What is your name : " << name << endl;

    cout<< "What is your cgpa : " << cgpa;
}
```

A screenshot of a jGRASP Wedge2 window. The window has a title bar with 'jGRASP Wedge2' and standard window controls. The main area is a text editor with a light gray background. It contains the following text: '---- Hit any key to start.', 'What is your name : Johana', 'What is your cgpa : 4', and '---- Hit any key to continue.' The text is in a monospaced font, with the first and last lines in blue and the middle two lines in black.

Question 4

Write a C++ program to display the word MTS3053 three (3) times on the screen using for.

[3 marks]

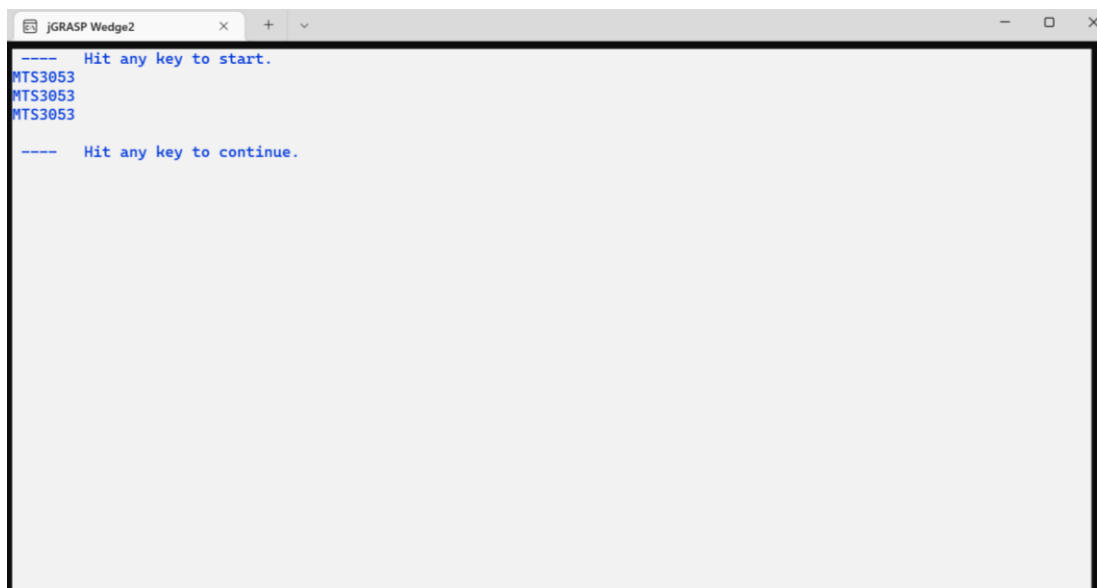
ANSWER

```
//C++ program to display a MTS3053 3 times

#include <iostream>

using namespace std;

int main() {
    for (int i = 1; i <= 3; ++i) {
        cout << "MTS3053" << endl;
    }
    return 0;
}
```



```
jGRASP Wedge2
---- Hit any key to start.
MTS3053
MTS3053
MTS3053
---- Hit any key to continue.
```

Question 5

Tadika NCDRC UPSI accepts only the children with the following criteria.

Year: 5 to 6

Type: B - boy/ G – girl

The fees for boys and girls are RM50.00 and RM40.00 respectively. Write a C++ program to display the fees that the parents must pay for their child on the registration day.

[13 marks]