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Aim :- Create debug and run Java program based on decision making and branching

Theory :-

A programing language uses control statement of control statments. Control the flow of execution of programmed based on certain condition.

if :- If statement is most simple decision making statement. It is used to decide wether a ceptain statement or black of statement will be executed or not i.e., if a certain condition is true then a black of statement is executed otherwise not

Syntax :-

```
if [condition]
{
    " statment to execute of
      Condition is true "
}
```

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if-else :- The if statement alone tells us that if a condition is true it will execute a block of statement and if the condition is False it won't But what if we want to do something else if the condition is false if the Here comes the else statement with if statement to execute a block of code when the condition is false.

Syntax :-

```
if [condition]
{
  // excute this block if
  condition is true
}
else
{
  // excute this block
  if condition is false
}
```

if-else-if-ladder :- Here a user can decide among multiple option The is developments are executed from the top down As soon as one of

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the condition controlling the if is true the statement associated with that if is exu and the rest of ladder is bypased. if none of the condition is true then the final else statement will be executed.

Syntax :- if [condition]
statement
else if [condition]
statement,
else if [condition]
statement;
.
.
else
statement;

Switch case :-

The switch case statement is a mutiple branch statement it provides an ex. way to distpatch exution to diff. erent parts of code based on the value of the expression

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```
Switch [exp-ression]
{
    Case value 1:
        statment 1;
        break;
    case value 2;
        statement 2;
        break;
    :
    case value N;
        statement N;
    default :
        statement pefualt;
}
```

Duplicate case value are not allowed

Program :-

① program :-

```
import java.util.Scanner;
class practical2 {
    public static void main (String [] args) {
        int n;
        Scanner s = new Scanner (System.in);
        System.out.println (" Enter a No. : ");
        n = s.nextInt ();
        if (n % 2 == 0) {
            System.out.println (" Given number is even ");
        } else {
            System.out.println (" Given number is odd ");
        }
}
```

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(3) program :-

```
import java.util.Scanner;
class practical2-3 {
    public static void main (String [] args ) {
        String levelname = " Beginner ";
        int level = 0;
        Switch (levelname ) {
            case " Beginner " : level = 1;
            break;
            Case " Intermidiate " : level = 2;
            break;
            Case " Expert " : level = 3;
            break;
            default : level = 0;
            break;
        }
        System.out.println (" Your level is : " + level);
    }
}
```

Conclusion :- Hence, we successfully create, run and debug program on decision making and branching.