Aim : Write a Java program for Encryption and Decryption using Blowfish Algorithm.

Program :

```
import
java.io.UnsupportedEncodingException;
import java.nio.charset.Charset;
import java.security.InvalidKeyException;
import
java.security.NoSuchAlgorithmException;
import java.util.Base64;
import
javax.crypto.BadPaddingException;
import javax.crypto.Cipher;
import
javax.crypto.IllegalBlockSizeException;
import
javax.crypto.NoSuchPaddingException;
import javax.crypto.spec.SecretKeySpec;
```

```
/**
 * This program demonstrates how to
encrypt/decrypt
 * input using the Blowfish
 * Cipher with the Java Cryptography.
 */
public class BlowfishDemo {

    public String encrypt(String password,
String key) throws
                NoSuchAlgorithmException,
NoSuchPaddingException,
                 InvalidKeyException,
IllegalBlockSizeException,
                  BadPaddingException,
UnsupportedEncodingException {
        byte[] KeyData = key.getBytes();
        SecretKeySpec KS = new
SecretKeySpec(KeyData, "Blowfish");
```

```
        Cipher cipher =
Cipher.getInstance("Blowfish");
        cipher.init(Cipher.ENCRYPT_MODE,
KS);
        String encryptedtext =
Base64.getEncoder().

encodeToString(cipher.doFinal(passwor
d.getBytes("UTF-8")));
        return encryptedtext;

    }

    public String decrypt(String
encryptedtext, String key)
            throws
NoSuchAlgorithmException,
NoSuchPaddingException,
              InvalidKeyException,
IllegalBlockSizeException,
```

```
                    BadPaddingException {
        byte[] KeyData = key.getBytes();
        SecretKeySpec KS = new
SecretKeySpec(KeyData, "Blowfish");
        byte[] ecryptedtexttobytes =
Base64.getDecoder().
                        decode(encryptedtext);
        Cipher cipher =
Cipher.getInstance("Blowfish");
        cipher.init(Cipher.DECRYPT_MODE,
KS);
        byte[] decrypted =
cipher.doFinal(ecryptedtexttobytes);
        String decryptedString =
                    new String(decrypted,
Charset.forName("UTF-8"));
        return decryptedString;

    }
```

```
    public static void main(String[] args)
throws Exception {
        final String password = "hello";
        final String key =
"knowledgefactory";
        System.out.println("Password: " +
password);
        BlowfishDemo obj = new
BlowfishDemo();
        String enc_output =
obj.encrypt(password, key);
        System.out.println("Encrypted text: "
+ enc_output);
        String dec_output =
obj.decrypt(enc_output, key);
        System.out.println("Decrypted text:
" + dec_output);
    }
}
```

Output :

Password: hello
Encrypted text:
ZvO6pmiXAdU=Decrypted text: hello