Develop a Java program for a secure user interaction system. Users will input their details, including name, age, and gender. If the user is over 18 and provides a valid gender (Male or Female), a passcode is generated. After entering the passcode, users can perform prime number and palindrome checks. Create a program to implement this system.

* The program begins by prompting users to enter their details, including their name, age, and gender with fields separated by colon (**:**). The format of the input string is shown below:
* **Format: Name:Age:Gender**
* If the age of the user is less than 18, then print **"Your age is less than 18 so code cannot be generated"** and terminate the program.
* If the gender of the user is other than Male or Female (**case-sensitive**), then print **"There is no such gender"** and terminate the program.
* If the user is over 18 and provides a valid gender (either "**Male**" or "**Female**"), generate a passcode by taking the first three letters of the user's name in reverse order, their age, the first letter of their gender in lowercase, and the length of their name and print as shown in the sample output.
* For example, if the user's name is "Sujith," age is 25, and gender is "Male," the passcode will be "juS25m6" (reversed "Suj", age 25, first letter of the gender in lowercase - m, and length of "Sujith" is 6).
* Once the passcode is generated, the user is prompted to enter their user ID and passcode for authentication and if the passcode is not the same as generated passcode, then print, **"You have entered an incorrect passcode"** and terminate the program.
* If the passcode matches the generated one, the user can perform actions such as prime number check and palindrome check by entering the option 1 or 2 as shown in the sample output.
* While prime number check if the input is a prime number, print**"<number> is a prime number"**else print**, "<number> is not a prime number".**
* Similarly**,**while palindrome check if the input string is a palindrome, print**"<input> is a palindrome"**else print,**"<input> is not a palindrome".**
* If the option entered is other than 1 or 2, then print**"Invalid option"** and terminate the program.

**Note :**

* In the Sample Input / Output provided, the highlighted text in bold corresponds to the input given by the user, and the rest of the text represents the output.
* Adhere to the code template, if provided.
* **Don't use System.exit(0) to terminate the program.**

**Sample Input1/Output1:**

Enter your details

**Anjali:30:Female**

The generated passcode is jnA30f6

Enter your userid

**anjali@mail.com**

Enter your passcode

**jnA30f6**

Choose an option:

1. Prime Number Check

2. Palindrome Check

**1**

Enter a number

**11**

11 is a prime number

**Sample Input2/Output2:**

Enter your details

**Sneha:23:Female**

The generated passcode is enS23f5

Enter your userid

**sneha@mail.com**

Enter your passcode

**enS23f5**

Choose an option:

1. Prime Number Check

2. Palindrome Check

**2**

Enter a string

**radar**

radar is a palindrome

**Sample Input3/Output3:**

Enter your details

**Ajay:19:Male**

The generated passcode is ajA19m4

Enter your userid

**ajay@yahoo.com**

Enter your passcode

**ajA19m4**

Choose an option:

1. Prime Number Check

2. Palindrome Check

**5**

Invalid option

**Sample Input4/Output4:**

Enter your details

**Meera:45:Female**

The generated passcode is eeM45f5

Enter your userid

**mee@reddifmail.com**

Enter your passcode

**mee45**

You have entered an incorrect passcode

**Sample Input5/Output5:**

Enter your details

**Subha:16:Female**

Your age is less than 18 so code cannot be generated

**Sample Input6/Output6:**

Enter your details

**Allen:27:animal**

There is no such gender