4. Java class with suitable attributes and methods. For the entity Student.

```
public class Student{
		String name;
		int age;
		float mark;
		Student(String f_name, int f_age, float f_mark){
			name = f_name;
			age = f_age;
			mark = f_mark;
		}

		void calc_grade(){
			if(mark > 90)
				System.out.println("\nO");
			else if(mark > 80)
				System.out.println("\nA");
			else if(mark > 70)
				System.out.println("\nB");
			else if(mark > 60)
				System.out.println("\nC");
			else if(mark >45)
				System.out.println("\nP");
			else
				System.out.println("\nFAILED.");
		}
		void display(){
			System.out.println("\nName:\t"+name);
			System.out.println("\nAge:\t"+age);
			System.out.println("\nPercentage"+mark);
		}
}
```

8. User defined invalid no exception

```
public class test{
	public void verifyNo(int num){
		if(num < 0){
			throw new ArithmeticException("InvalidNumberException\n");
		}else{
			System.out.println("Number is valid.\n");
		}
	}
	public static void main(String args[]){
		verifyNo(-2);
		System.out.println("Number verified.\n");
	}
}
```

9. Avg of N positive integers given via CLI

```
class test{
```

```
	public static void main(String args[]){
		int sum = 0;
		for(int i = 0; i < args.length; i++)
			sum = sum + Integer.parseInt(args[i]);
		System.out.println("\nAvg is "+ (sum/args.length));
	}
}
```

17. Palindrome check via CLI

```
public class MyClass {
   public static void main(String args[]){
		String string = args[0];
		int f = 1, size = string.length();
		for(int i = 0; i < size; i++){
		   if(string.charAt(i) != string.charAt(size-i-1)){
		      f = 0;
		      break;
		   }
		}
		if(f == 1){
		   System.out.println("Is a palindrome");
		}else{
		   System.out.println("Is not a palindrome");
		}

	}
}
```

23. Student name.. if necessary add more variables

```
public class Student{
   String name;
   Student(){
      name = "Unknown";
   }
   Student(String passed_name){
      name = passed_name;
   }
   void display(){
      System.out.println("\nName is"+name);
   }
}

public class MyClass {
   public static void main(String args[]){
		Student s1 = new Student();
		Student s2 = new Student("Amal");

		s1.display();
		s2.display();
	}
```

}