11. Tarvit High School is trialling a voting system to decide their representative for the pupil council. A programmer creates a voting app to allow pupils to cast their vote. The winner is displayed once voting is closed.

2023 Tarvit High School Pupil Council Representative Online Vote	2023 Tarvit High School Pupil Council Representative Current Votes	
A Jade Hendry	Jade Hendry	22
B Lisa Murphy	Lisa Murphy	13
C Lukasz Kowalski	Lukasz Kowalski	19
D Robert Green	Robert Green	21
Enter your vote using your keyboard: A, B, C or D **C**		

(a) Identify one process carried out by the voting app.   **1**

(b) A pupil must enter A, B, C or D to cast their vote.

   (i) State the most suitable data type for storing the vote.   **1**

   (ii) Using a design technique of your choice, design a solution that will allow only these values to be entered.   **4**

11. (continued)

(c) The following code displays the number of votes for each candidate.

```
…
Line 22   REPEAT 4 TIMES
Line 23     < display candidate name and number of votes >
Line 24   END REPEAT
…
```

Before the code is run it must be translated.

Complete the table below to identify the type of translator that should be used for each effect.

2

Type of translator	Effect
	Loop will be translated once and converted into machine code
	Loop will be translated four times as the program is run

(d) After voting is closed three candidates have received the same number of votes. Their names are stored in a data structure called `winners`.

The app uses a predefined function to pick one candidate from `winners`.

Using a programming language of your choice, write the code that will display the name of the winning candidate.

3