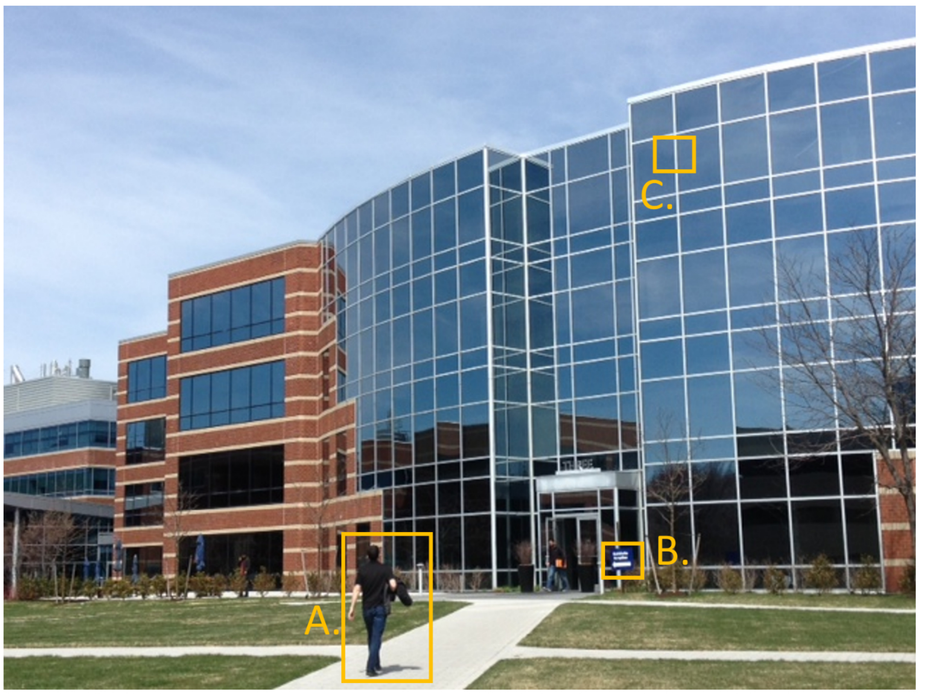
1. Imagine you are using template matching to stabilize a video. Consider the following frame from that video: **1 / 1 point**



Which would be the best choice of template?

- A.
- B. (selected)
- C.

Correct
This template likely has detectable features that are both stable and unique.

2. Consider the following code, which provides a general overview of the steps necessary for simple video stabilization: **1 / 1 point**

```
1  templateMatcher = vision.TemplateMatcher('ROIInputPort',true);
2  templatePos = templateMatcher(curFrame,template,searchROI);
3
4  displacement = templatePos - prevTemplatePos;
5  totalOffset = totalOffset - displacement;
6
7  stabilizedFrame = imtranslate(curFrame,totalOffset);
```

In which line of code is the cumulative camera motion calculated?

- line 2
- line 5 (selected)
- line 7

Correct
Because we choose a stationary template object, the cumulative displacement of the reference object over all frames must be due to camera motion.

The following two questions refer to the stabilized video created by executing the `simpleVideoStabilization.mlx` live script reading.

Read in the 55th and 56th frames of both the shaky and stable videos (`ShakyStreet.avi` and `simpleStabilizedVideoCropped.avi`, respectively).

Then, approximate the reduced motion due to stabilization by calculating the optical flow between frames 55 and 56 for **both** the shaky and stabilized videos using the Farneback method.

3. What was the average optical flow magnitude between frames 55 and 56 of the **shaky** video? **1 / 1 point**

0.63269

Correct
`mean(flow.Magnitude(:))`

4. What was the average optical flow magnitude between frames 55 and 56 of the **stabilized** video? **1 / 1 point**

0.32938

Correct
`mean(flow.Magnitude(:))`