It is to be proved that $P \to Q \vdash \neg P \vee Q$.

One cannot prove one of the disjuncts, that is, $\neg P$ or Q from the assumption $P \to Q$. Thus proving first $\neg P$ or Q and then applying $\vee$Intro1 or $\vee$Intro2 will hardly work.
In order to prove a disjunction it's often better to assume the negation of the disjunction, in the present case $\neg(\neg P \vee Q)$, and to derive a contradiction, so that one can apply $\neg$Elim and conclude $\neg P \vee Q$. This is the strategy in the following proof.

I assume P and combine it with the premiss $P \to Q$

$P \qquad P \to Q$

By →Elim I conclude Q.

$$\frac{P \qquad P \to Q}{Q}$$

Applying $\lor$Intro2 yields $\neg P \lor Q$.

$$\dfrac{\dfrac{P \qquad P \to Q}{Q}}{\neg P \lor Q}$$

I assume the negation of the conclusion…

$$\dfrac{\dfrac{P \qquad P \to Q}{Q}}{\neg P \vee Q} \qquad \neg(\neg P \vee Q)$$

to get $\neg P$ by $\neg$Intro. The assumption P is discharged accordingly.

$$\dfrac{\dfrac{\dfrac{[P] \qquad P \rightarrow Q}{Q}}{\neg P \vee Q} \qquad \neg(\neg P \vee Q)}{\neg P}$$

I apply $\vee$Intro1…

$$\dfrac{\dfrac{\dfrac{\dfrac{[P] \qquad P \to Q}{Q}}{\neg P \vee Q} \qquad \neg(\neg P \vee Q)}{\neg P}}{\neg P \vee Q}$$

and assume once more the negation of the conclusion.

$$\dfrac{\dfrac{\dfrac{\dfrac{[P] \qquad P \to Q}{Q}}{\neg P \vee Q} \qquad \neg(\neg P \vee Q)}{\neg P}}{\neg P \vee Q} \qquad \neg(\neg P \vee Q)$$

I derive the conclusion by $\neg$Elim. $\neg(\neg P \lor Q)$ has been assumed twice. Both occurrences can be discharged.

$$\dfrac{\dfrac{\dfrac{\dfrac{\dfrac{[P] \qquad P \to Q}{Q}}{\neg P \lor Q} \qquad [\neg(\neg P \lor Q)]}{\neg P}}{\neg P \lor Q} \qquad [\neg(\neg P \lor Q)]}{\neg P \lor Q}$$